



**HL7 Implementation Guide for CDA® Release 2:
IHE Health Story Consolidation, DSTU Release 1.1
(US Realm)**

**Draft Standard for Trial Use
July 2012**

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Table of Contents

1	INTRODUCTION	30
1.1	Audience	30
1.2	Purpose.....	30
1.3	Scope	31
1.4	Approach	31
1.5	Organization of This Guide	32
1.6	Use of Templates	32
1.6.1	Originator Responsibilities: General Case.....	33
1.6.2	Recipient Responsibilities: General Case	33
1.7	Levels of Constraint	33
1.8	Conformance Conventions Used in This Guide	34
1.8.1	Templates and Conformance Statements	34
1.8.2	Open and Closed Templates	36
1.8.3	Conformance Verbs (Keywords).....	36
1.8.4	Cardinality	37
1.8.5	Optional and Required with Cardinality	38
1.8.6	Vocabulary Conformance.....	38
1.8.7	Containment Relationships	39
1.8.8	Null Flavor	40
1.8.9	Unknown Information	42
1.8.10	Data Types.....	43
1.9	XML Conventions Used in This Guide	44
1.9.1	XPath Notation.....	44
1.9.2	XML Examples and Sample Documents	44
1.10	UML Diagrams	45
1.11	Content of the Package	45
2	GENERAL HEADER TEMPLATE	46
2.1	Document Type Codes	46
2.2	US Realm Header	46
2.2.1	RecordTarget.....	48
2.2.2	Author	58
2.2.3	DataEnterer	60
2.2.4	Informant.....	62
2.2.5	Custodian	63

2.2.6	InformationRecipient	64
2.2.7	LegalAuthenticator	65
2.2.8	Authenticator	67
2.2.9	Participant (Support)	69
2.2.10	InFulfillmentOf.....	70
2.2.11	DocumentationOf/serviceEvent	70
2.2.12	Authorization/consent.....	72
2.2.13	ComponentOf.....	73
2.3	US Realm Address (AD.US.FIELDDED)	73
2.4	US Realm Date and Time (DT.US.FIELDDED)	74
2.5	US Realm Date and Time (DTM.US.FIELDDED)	75
2.6	US Realm Patient Name (PTN.US.FIELDDED)	75
2.7	US Realm Person Name (PN.US.FIELDDED).....	77
2.8	Rendering Header Information for Human Presentation	77
3	DOCUMENT-LEVEL TEMPLATES	79
3.1	Continuity of Care Document (CCD)/HITSP C32	84
3.1.1	Header Constraints Specific to CCD.....	84
3.1.2	CCD Body Constraints	86
3.2	Consultation Note.....	96
3.2.1	Consultation Note Header Constraints	96
3.2.2	Consultation Note Body Constraints	103
3.3	Diagnostic Imaging Report	112
3.3.1	DIR Header Constraints.....	113
3.3.2	DIR Body Constraints.....	124
3.4	Discharge Summary	130
3.4.1	Discharge Summary Header Constraints	130
3.4.2	Discharge Summary Body Constraints.....	134
3.5	History and Physical (H&P) Note	146
3.5.1	H&P Note Header Constraints.....	147
3.5.2	H&P Note Body Constraints	150
3.6	Operative Note	160
3.6.1	Operative Note Header Constraints	160
3.6.2	Operative Note Body Constraints	165
3.7	Procedure Note	169
3.7.1	Procedure Note Header Constraints	169
3.7.2	Procedure Note Body Constraints	177

3.8	Progress Note	188
3.8.1	Progress Note Header Constraints.....	188
3.8.2	Progress Note Body Constraints.....	192
3.9	Unstructured Document	197
3.9.1	Unstructured Document Header Constraints	198
3.9.2	Unstructured Document Body Constraints	199
4	SECTION-LEVEL TEMPLATES.....	203
4.1	Advance Directives Section 42348-3.....	210
4.2	Allergies Section 48765-2	212
4.3	Anesthesia Section 59774-0.....	214
4.4	Assessment and Plan Section 51847-2	215
4.5	Assessment Section 51848-0	216
4.6	Chief Complaint and Reason for Visit Section 46239-0	217
4.7	Chief Complaint Section 10154-3.....	218
4.8	Complications Section 55109-3.....	219
4.9	DICOM Object Catalog Section - DCM 121181	220
4.10	Discharge Diet Section 42344-2.....	222
4.11	Encounters Section 46240-8.....	222
4.12	Family History Section 10157-6	224
4.13	Findings Section (DIR) 18782-3	226
4.14	Functional Status Section 47420-5.....	227
4.15	General Status Section 10210-3	232
4.16	History of Past Illness Section 11348-0	233
4.17	History of Present Illness Section 10164-2	234
4.18	Hospital Admission Diagnosis Section 46241-6	235
4.19	Hospital Admission Medications Section 42346-7 (entries optional)	236
4.20	Hospital Consultations Section 18841-7	237
4.21	Hospital Course Section 8648-8.....	237
4.22	Hospital Discharge Diagnosis Section 11535-2.....	238
4.23	Hospital Discharge Instructions Section 8653-8	239
4.24	Hospital Discharge Medications Section 10183-2	240
4.25	Hospital Discharge Physical Section 10184-0	242
4.26	Hospital Discharge Studies Summary Section 11493-4	243
4.27	Immunizations Section 11369-6	244
4.28	Instructions Section 69730-0.....	247
4.29	Interventions Section 62387-6	248

4.30	Medical Equipment Section 46264-8	249
4.31	Medical (General) History Section 11329-0	250
4.32	Medications Administered Section 29549-3	251
4.33	Medications Section 10160-0	252
4.34	Objective Section 61149-1	254
4.35	Operative Note Fluid Section 10216-0	255
4.36	Operative Note Surgical Procedure Section 10223-6	256
4.37	Payers Section 48768-6	257
4.38	Physical Exam Section 29545-1	259
4.39	Plan of Care Section 18776-5.....	260
4.40	Planned Procedure Section 59772-4.....	262
4.41	Postoperative Diagnosis Section 10218-6	263
4.42	Postprocedure Diagnosis Section 59769-0.....	264
4.43	Preoperative Diagnosis Section 10219-4.....	265
4.44	Problem Section 11450-4.....	266
4.45	Procedure Description Section 29554-3.....	269
4.46	Procedure Disposition Section 59775-7	270
4.47	Procedure Estimated Blood Loss Section 59770-8	270
4.48	Procedure Findings Section 59776-5	271
4.49	Procedure Implants Section 59771-6.....	272
4.50	Procedure Indications Section 59768-2	273
4.51	Procedure Specimens Taken Section 59773-2.....	274
4.52	Procedures Section 47519-4	275
4.53	Reason for Referral Section 42349-1	278
4.54	Reason for Visit Section 29299-5	279
4.55	Results Section 30954-2.....	280
4.56	Review of Systems Section 10187-3.....	282
4.57	Social History Section 29762-2	283
4.58	Subjective Section 61150-9.....	285
4.59	Surgical Drains Section 11537-8.....	286
4.60	Vital Signs Section 8716-3	287
5	ENTRY-LEVEL TEMPLATES	289
5.1	Admission Medication.....	289
5.2	Advance Directive Observation	291
5.3	Age Observation	296
5.4	Allergy - Intolerance Observation	298

5.5	Allergy Problem Act	306
5.6	Allergy Status Observation.....	309
5.7	Assessment Scale Observation	310
5.8	Assessment Scale Supporting Observation	314
5.9	Authorization Activity	315
5.10	Boundary Observation	317
5.11	Caregiver Characteristics	318
5.12	Code Observations.....	321
5.13	Cognitive Status Problem Observation.....	323
5.14	Cognitive Status Result Observation	328
5.15	Cognitive Status Result Organizer.....	331
5.16	Comment Activity	333
5.17	Coverage Activity	336
5.18	Deceased Observation	337
5.19	Discharge Medication	339
5.20	Drug Vehicle	341
5.21	Encounter Activities	343
5.22	Encounter Diagnosis	346
5.23	Estimated Date of Delivery.....	348
5.24	Family History Death Observation.....	349
5.25	Family History Observation.....	351
5.26	Family History Organizer	356
5.27	Functional Status Problem Observation	360
5.28	Functional Status Result Observation	363
5.29	Functional Status Result Organizer	366
5.30	Health Status Observation.....	368
5.31	Highest Pressure Ulcer Stage	371
5.32	Hospital Admission Diagnosis	372
5.33	Hospital Discharge Diagnosis.....	373
5.34	Immunization Activity.....	375
5.35	Immunization Medication Information.....	381
5.36	Immunization Refusal Reason.....	384
5.37	Indication.....	386
5.38	Instructions	388
5.39	Medication Activity	390
5.40	Medication Dispense.....	399

5.41	Medication Information.....	402
5.42	Medication Supply Order	404
5.43	Medication Use – None Known (deprecated)	407
5.44	Non-Medicinal Supply Activity	408
5.45	Number of Pressure Ulcers Observation	410
5.46	Plan of Care Activity Act.....	412
5.47	Plan of Care Activity Encounter.....	413
5.48	Plan of Care Activity Observation	414
5.49	Plan of Care Activity Procedure	416
5.50	Plan of Care Activity Substance Administration	417
5.51	Plan of Care Activity Supply	418
5.52	Policy Activity	419
5.53	Postprocedure Diagnosis.....	430
5.54	Precondition for Substance Administration.....	431
5.55	Pregnancy Observation	432
5.56	Preoperative Diagnosis.....	434
5.57	Pressure Ulcer Observation.....	436
5.58	Problem Concern Act (Condition).....	444
5.59	Problem Observation	446
5.60	Problem Status.....	451
5.61	Procedure Activity Act.....	452
5.62	Procedure Activity Observation	460
5.63	Procedure Activity Procedure	466
5.64	Procedure Context	472
5.65	Product Instance	473
5.66	Purpose of Reference Observation	475
5.67	Quantity Measurement Observation.....	476
5.68	Reaction Observation.....	480
5.69	Referenced Frames Observation	483
5.70	Result Observation	484
5.71	Result Organizer.....	488
5.72	Series Act	490
5.73	Service Delivery Location	493
5.74	Severity Observation.....	495
5.75	Smoking Status Observation.....	497
5.76	Social History Observation	500

5.77	SOP Instance Observation	502
5.78	Study Act	505
5.79	Text Observation	507
5.80	Tobacco Use	510
5.81	Vital Sign Observation	512
5.82	Vital Signs Organizer	515
6	REFERENCES	518
APPENDIX A — ACRONYMS AND ABBREVIATIONS		520
APPENDIX B — CHANGES FROM PREVIOUS GUIDES.....		522
	New and Updated Templates	522
	Cardinality Changes	523
	Section Code Changes	524
	Conformance Verbs	525
	Template ID Changes.....	527
	Consolidated Entries.....	535
	Changes Within Sections	539
APPENDIX C — TEMPLATE IDS IN THIS GUIDE		557
APPENDIX D — CODE SYSTEMS IN THIS GUIDE		563
APPENDIX E — VALUE SETS IN THIS GUIDE.....		565
APPENDIX F — SINGLE-VALUE BINDINGS IN THIS GUIDE.....		568
APPENDIX G — EXTENSIONS TO CDA R2		569
APPENDIX H — XDS-SD AND US REALM CLINICAL DOCUMENT HEADER COMPARISON.....		571
APPENDIX I — MIME MULTIPART/RELATED MESSAGES		573
	MIME Multipart/Related Messages.....	573
	RFC-2557 MIME Encapsulation of Aggregate Documents, Such as HTML (MHTML)	573
	Referencing Supporting Files in Multipart/Related Messages	573
	Referencing Documents from Other Multiparts within the Same X12 Transactions.....	574
APPENDIX J — ADDITIONAL PHYSICAL EXAMINATION SUBSECTIONS		575
APPENDIX K — ADDITIONAL EXAMPLES		577
	Names Examples	577
	Addresses Examples	577
	Time Examples	578

CD Examples.....	578
APPENDIX L — LARGE UML DIAGRAMS	580

Table of Figures

Figure 1: Constraints format example.....	35
Figure 2: Constraints format – only one allowed.....	37
Figure 3: Constraints format – only one like this allowed	37
Figure 4: Binding to a single code.....	38
Figure 5: XML expression of a single-code binding	39
Figure 6: Translation code example	39
Figure 7: nullFlavor example	40
Figure 8: Attribute required.....	41
Figure 9: Allowed nullFlavors when element is required (with xml examples)	41
Figure 10: nullFlavor explicitly disallowed	41
Figure 11: Unknown medication example	42
Figure 12: Unknown medication use of anticoagulant drug example	43
Figure 13: No known medications example	43
Figure 14: XML document example	44
Figure 15: XPath expression example	44
Figure 16: ClinicalDocument example	44
Figure 17: US Realm header example	48
Figure 18: effectiveTime with time zone example	48
Figure 19: recordTarget example	56
Figure 20: Person author example	60
Figure 21: Device author example	60
Figure 22: dataEnterer example	62
Figure 23: Informant with assignedEntity example	63
Figure 24: Custodian example.....	64
Figure 25: informationRecipient example.....	65
Figure 26: legalAuthenticator example.....	67
Figure 27: Authenticator example.....	68
Figure 28: Participant example for a supporting person	70
Figure 29: DocumentationOf example.....	72
Figure 30: Procedure note consent example	73
Figure 31: CCD ClinicalDocument/templateId example	84
Figure 32: CCD code example	85
Figure 33: Consultation note ClinicalDocument/templateId example	97
Figure 34: Consultation note ClinicalDocument/code example.....	100

Figure 35: Consultation note translation of local code example	100
Figure 36: Consultation note uncoordinated document type codes example	101
Figure 37: Consultation note inFulfillmentOf example	101
Figure 38: Consultation note componentOf example	103
Figure 39: DIR ClinicalDocument/templateId example	113
Figure 40: DIR ClinicalDocument/code example	115
Figure 41: DIR use of the translation element to include local codes for document type	115
Figure 42: DIR participant example	116
Figure 43: DIR inFulfillmentOf example	117
Figure 44: DIR procedure context (CDA Header) illustration (non-normative)	117
Figure 45: DIR documentationOf example	118
Figure 46: DIR relatedDocument example	119
Figure 47: DIR componentOf example	121
Figure 48: Physician reading study performer example	122
Figure 49: Physician of record participant example	123
Figure 50: WADO reference using linkHtml example	127
Figure 51: Fetus subject context example	128
Figure 52: Observer context example	129
Figure 53: Discharge summary ClinicalDocument/templateId example	130
Figure 54: Discharge summary ClinicalDocument/code example	131
Figure 55: Discharge summary componentOf example	133
Figure 56: H&P ClinicalDocument/templateId example	147
Figure 57: H&P ClinicalDocument/code example	148
Figure 58: H&P use of translation to include local equivalents for document type	148
Figure 59: H&P componentOf example	150
Figure 60: Operative note ClinicalDocument/templateId example	160
Figure 61: Operative note ClinicalDocument/code example	162
Figure 62: Operative note serviceEvent example	164
Figure 63: Operative note performer example	165
Figure 64: Procedure note ClinicalDocument/templateId category I example	170
Figure 65: Procedure note ClinicalDocument/code example	171
Figure 66: Procedure note serviceEvent example	176
Figure 67: Procedure note serviceEvent example with null value in width element	176
Figure 68: Procedure note performer example	177
Figure 69: Progress note ClinicalDocument/templateId example	188
Figure 70: Progress note ClinicalDocument/code example	190

Figure 71: Progress note serviceEvent example	191
Figure 72: Progress note componentOf example	192
Figure 73: nonXMLBody example with embedded content.....	200
Figure 74: nonXMLBody example with referenced content	200
Figure 75: nonXMLBody example with compressed content	200
Figure 76: Unique file reference example	202
Figure 77: Advance directives section UML diagram.....	210
Figure 78: Advance directives section example.....	211
Figure 79: Allergies section UML diagram	212
Figure 80: Allergies section example	213
Figure 81: Anesthesia section example	215
Figure 82: Assessment and plan section example	216
Figure 83: Assessment section example	217
Figure 84: Chief complaint and reason for visit section example.....	218
Figure 85: Chief complaint section example	218
Figure 86: Complications section example	219
Figure 87: DICOM object catalog section example	221
Figure 88: Discharge diet section example	222
Figure 89: Encounters section UML diagram	223
Figure 90: Encounters section example	224
Figure 91: Family history section UML diagram	225
Figure 92: Family history section example	225
Figure 93: Findings section example.....	226
Figure 94: Functional status section UML diagram	227
Figure 95: Functional status section example	230
Figure 96: General status section example	232
Figure 97: History of past illness section example	233
Figure 98: History of present illness section example	234
Figure 99: Hospital admission diagnosis section example.....	235
Figure 100: Hospital admission medications section example.....	236
Figure 101: Hospital consultations section example.....	237
Figure 102: Hospital course section example	238
Figure 103: Hospital discharge diagnosis section example.....	239
Figure 104: Hospital discharge instructions section example	240
Figure 105: Hospital discharge medications section example.....	242
Figure 106: Hospital discharge physical section example	243

Figure 107: Hospital discharge studies summary section example.....	244
Figure 108: Immunization section* UML diagram	244
Figure 109: Immunization section example.....	246
Figure 110: Instructions section example	248
Figure 111: Interventions section example	249
Figure 112: Medical equipment section UML diagram	249
Figure 113: Medical equipment section example	250
Figure 114: Medical (general) history section example	251
Figure 115: Medications administered section example	252
Figure 116: Medications section UML diagram.....	252
Figure 117: Medications section entries example	254
Figure 118: Objective section example	255
Figure 119: Operative Note fluid section example	256
Figure 120: Operative Note surgical procedure section example	256
Figure 121: Payers section UML diagram	257
Figure 122: Payers section example	258
Figure 123: Physical exam section example	260
Figure 124: Plan of care section UML diagram	260
Figure 125: Plan of care section example	261
Figure 126: Planned procedure section example	263
Figure 127: Postoperative diagnosis section example.....	264
Figure 128: Postprocedure diagnosis section example	265
Figure 129: Preoperative diagnosis section example	266
Figure 130: Problem section UML diagram.....	266
Figure 131: Problem section example	268
Figure 132: Pressure ulcer on a problem list example	268
Figure 133: Procedure description section example	269
Figure 134: Procedure disposition section example	270
Figure 135: Procedure estimated blood loss section example	271
Figure 136: Procedure findings section example.....	272
Figure 137: Procedure implants section example	273
Figure 138: Procedure indications section example	274
Figure 139: Procedure specimens taken section example	275
Figure 140: Procedures section UML diagram	275
Figure 141: Procedures section example	277
Figure 142: Reason for referral section example	278

Figure 143: Reason for visit section example	279
Figure 144: Results section UML diagram.....	280
Figure 145: Results section example	282
Figure 146: Review of systems section example.....	283
Figure 147: Social history section UML diagram	283
Figure 148: Social history section example	284
Figure 149: Subjective section example	285
Figure 150: Surgical drains section example.....	286
Figure 151: Vital signs section UML diagram	287
Figure 152: Vital signs section example	288
Figure 153: Admission medication entry example	291
Figure 154: Advance directive observation example.....	295
Figure 155: Age observation example.....	298
Figure 156: Allergy - intolerance observation example.....	305
Figure 157: Allergy problem act example	308
Figure 158: Allergy status observation example	310
Figure 159: Assessment scale observation example.....	313
Figure 160: Assessment scale supporting observation example	315
Figure 161: Authorization activity example	317
Figure 162: Boundary observation example	318
Figure 163: Caregiver characteristics example with assertion	320
Figure 164: Caregiver characteristics example without assertion	320
Figure 165: Code observation example	323
Figure 166:Cognitive status problem observation example	327
Figure 167: Cognitive status result observation example	331
Figure 168 Cognitive status result organizer example	333
Figure 169: Comment act example	335
Figure 170: Coverage activity example	337
Figure 171: Deceased observation example.....	339
Figure 172: Discharge medication entry example	341
Figure 173: Drug vehicle entry example.....	342
Figure 174: Encounter activities example	346
Figure 175: Encounter diagnosis act example	348
Figure 176: Estimated date of delivery example	349
Figure 177: Family history death observation example.....	350
Figure 178: Family history observation scenario	353

Figure 179: Family history observation example	354
Figure 180: Family history organizer example	359
Figure 181: Functional status problem observation example	363
Figure 182: Functional status result observation example.....	366
Figure 183: Functional status result organizer example	368
Figure 184: Health status observation example.....	370
Figure 185: Hospital admission diagnosis example	373
Figure 186: Hospital discharge diagnosis act example.....	375
Figure 187: Immunization activity example.....	381
Figure 188: Immunization medication information example	384
Figure 189: Immunization refusal reason	385
Figure 190: Indication entry example	387
Figure 191: Instructions entry example	389
Figure 192: Medication activity example	397
Figure 193: Medication dispense example.....	402
Figure 194: Medication information example	404
Figure 195: Medication supply order example	407
Figure 196: Medication use – none known example.....	408
Figure 197: Non-medicinal supply activity example.....	410
Figure 198: Number of pressure ulcers example	412
Figure 199: Plan of care activity act example	413
Figure 200: Plan of care activity encounter example.....	414
Figure 201: Plan of care activity observation example	416
Figure 202: Plan of care activity procedure example	417
Figure 203: Plan of care activity substance administration example	418
Figure 204: Plan of care activity supply example	419
Figure 205: Policy activity example	427
Figure 206: Postprocedure diagnosis example	431
Figure 207: Precondition for substance administration example	432
Figure 208: Pregnancy observation example	434
Figure 209: Preoperative diagnosis example.....	436
Figure 210: Pressure ulcer observation example	443
Figure 211: Problem concern act (condition) example.....	445
Figure 212: Problem observation example.....	449
Figure 213: Problem observation with specific problem not observed	450
Figure 214: Problem observation for no known problems	450

Figure 215: NullFlavor example	450
Figure 216: Problem status example.....	452
Figure 217: Procedure activity act example	459
Figure 218: Procedure activity observation example	465
Figure 219: Procedure activity procedure example	471
Figure 220: Procedure context template example	473
Figure 221: Product instance example	474
Figure 222: Purpose of reference example	476
Figure 223: Quantity measurement observation example	479
Figure 224: Reaction observation example	483
Figure 225: Referenced frames observation example	484
Figure 226: Result observation example	487
Figure 227: No evaluation procedures (e.g., labs/x-rays) performed example	488
Figure 228: Local code example.....	488
Figure 229: Result organizer example	490
Figure 230: Series act example	492
Figure 231: Service delivery location example	494
Figure 232: Severity observation example	497
Figure 233: Smoking status observation example	499
Figure 234: Unknown if ever smoked.....	499
Figure 235: Social history observation template example	502
Figure 236: SOP instance observation example.....	504
Figure 237: Study act example	507
Figure 238: Text observation example.....	510
Figure 239: Tobacco use entry example	512
Figure 240: Vital sign observation example.....	515
Figure 241: Vital signs organizer example	517
Figure 242: Correct use of name example 1	577
Figure 243: Incorrect use of name example 1 - whitespace.....	577
Figure 244: Incorrect use of Patient name example 2 - no tags	577
Figure 245: Correct use telecom address example.....	577
Figure 246: Correct use postal address example	577
Figure 247: Correct use of IVL_TS example.....	578
Figure 248: Correct use of TS with precision to minute example	578
Figure 249: Correct use of TS with time zone offset example	578
Figure 250: Incorrect use of IVL_TS example	578

Figure 251: Incorrect use of TS - insufficient precision example	578
Figure 252: Incorrect use of TS when time zone offset required example	578
Figure 253: Incorrect use of time zone offset - not enough precision example	578
Figure 254: Correct use of CD with no code example.....	578
Figure 255: Incorrect use of CD with no code - missing nullFlavor attribute example	579
Figure 256: Immunizations section UML diagram (larger copy).....	580
Figure 257: Functional Status section UML diagram (larger copy)	580
Figure 258: Medications section UML diagram (larger copy)	580
Figure 259: Plan of care section UML diagram (larger copy).....	580

Table of Tables

Table 1: Content of the Package	45
Table 2: Basic Confidentiality Kind Value Set.....	47
Table 3: Language Value Set (excerpt).....	47
Table 4: Telecom Use (US Realm Header) Value Set.....	52
Table 5: Administrative Gender (HL7) Value Set	52
Table 6: Marital Status Value Set	53
Table 7: Religious Affiliation Value Set (excerpt)	53
Table 8: Race Value Set (excerpt).....	54
Table 9: Ethnicity Value Set	54
Table 10: Personal Relationship Role Type Value Set (excerpt)	54
Table 11: State Value Set (excerpt)	55
Table 12: Postal Code Value Set (excerpt).....	55
Table 13: Country Value Set (excerpt)	55
Table 14: Language Ability Value Set.....	56
Table 15: Language Ability Proficiency Value Set.....	56
Table 16: IND Role classCode Value Set.....	69
Table 17: PostalAddressUse Value Set	74
Table 18: EntityNameUse Value Set.....	76
Table 19: EntityPersonNamePartQualifier Value Set.....	77
Table 20: Document Types and Required/Optional Sections with Structured Body	80
Table 21: Template Containment for a CCD	88
Table 22: Consultation Note LOINC Document Codes	98
Table 23: Invalid Codes for Consultation Note.....	100
Table 24: Template Containment for a Consultation Note.....	105

Table 25: DIR LOINC Document Type Codes	114
Table 26: Template Containment for Constrained DIR Sections	124
Table 27: DIR Section Type Codes	125
Table 28: Discharge summary LOINC Document Codes	131
Table 29: HL7 Discharge Disposition Codes	133
Table 30: Template Containment for a Discharge Summary	137
Table 31: H&P LOINC Document Type Codes.....	148
Table 32: Template Containment for an H&P Note	152
Table 33: Surgical Operation Note LOINC Document Codes	161
Table 34: Provider Type Value Set (excerpt).....	164
Table 35: Procedure Codes from SNOMED CT	164
Table 36: Template Containment for an Operative Note.....	167
Table 37: Procedure Note LOINC Document Type Codes.....	171
Table 38: Participant Scenario.....	172
Table 39: Healthcare Provider Taxonomy Value Set.....	175
Table 40: Template Containment for a Procedure Note	180
Table 41: Progress Note LOINC Document Codes	190
Table 42: Template Containment for a Progress Note	194
Table 43: Supported File Formats Value Set (Unstructured Documents).....	200
Table 44: Sections and Required/Optional Document Types with Structured Body...	204
Table 45: Advance Directives Section Contexts	210
Table 46: Allergies Section Contexts	212
Table 47: Anesthesia Section Contexts	214
Table 48: Assessment and Plan Section Contexts.....	215
Table 49: Assessment Section Contexts	216
Table 50: Chief Complaint and Reason for Visit Section Contexts.....	217
Table 51: Chief Complaint Section Contexts	218
Table 52: Complications Section Contexts	219
Table 53: DICOM Object Catalog Section - DCM 121181 Contexts	220
Table 54: Discharge Diet Section Contexts.....	222
Table 55: Encounters Section Contexts	222
Table 56: Family History Section Contexts.....	224
Table 57: Findings Section Contexts.....	226
Table 58: Functional Status Section Contexts.....	227
Table 59: Functional and Cognitive Status Problem Observation Examples	228
Table 60: Functional and Cognitive Status Result Observation Examples	229

Table 61: General Status Section Contexts	232
Table 62: History of Past Illness Section Contexts	233
Table 63: History of Present Illness Section Contexts	234
Table 64: Hospital Admission Diagnosis Section Contexts	235
Table 65: Hospital Admission Medications Section Contexts.....	236
Table 66: Hospital Consultations Section Contexts	237
Table 67: Hospital Course Section Contexts.....	237
Table 68: Hospital Discharge Diagnosis Section Contexts.....	238
Table 69: Hospital Discharge Instructions Section Contexts	239
Table 70: Hospital Discharge Medications Section Contexts	240
Table 71: Hospital Discharge Physical Section Contexts	242
Table 72: Hospital Discharge Studies Summary Section Contexts	243
Table 73: Immunizations Section Contexts	244
Table 74: Interventions Section Contexts	247
Table 75: Interventions Section Contexts	248
Table 76: Medical Equipment Section Contexts.....	249
Table 77: Medical (General) History Section Contexts.....	250
Table 78: Medications Administered Section Contexts.....	251
Table 79: Medications Section Contexts	252
Table 80: Objective Section Contexts	254
Table 81: Operative Note Fluids Section Contexts	255
Table 82: Operative Note Surgical Procedure Section Contexts	256
Table 83: Payers Section Contexts	257
Table 84: Physical Exam Section Contexts	259
Table 86: Plan of Care Section Contexts.....	260
Table 87: Planned Procedure Section Contexts.....	262
Table 88: Postoperative Diagnosis Section Contexts	263
Table 89: Postprocedure Diagnosis Section Contexts.....	264
Table 90: Preoperative Diagnosis Section Contexts.....	265
Table 91: Problem Section Contexts.....	266
Table 92: Procedure Description Section Contexts	269
Table 93: Procedure Disposition Section Contexts.....	270
Table 94: Procedure Estimated Blood Loss Section Contexts	270
Table 95: Procedure Findings Section Contexts	271
Table 96: Procedure Implants Section Contexts	272
Table 97: Procedure Indications Section Contexts	273

Table 98: Procedure Specimens Taken Section Contexts	274
Table 99: Procedures Section Contexts	275
Table 100: Reason for Referral Section Contexts	278
Table 101: Reason for Visit Section Contexts	279
Table 102: Results Section Contexts.....	280
Table 103: Review of Systems Section Contexts	282
Table 104: Social History Section Contexts	283
Table 105: Subjective Section Contexts	285
Table 106: Surgical Drains Section Contexts	286
Table 107: Vital Signs Section Contexts.....	287
Table 108: Admission Medication Contexts.....	289
Table 109: Admission Medication Constraints Overview	290
Table 110: Advance Directive Observation Contexts	291
Table 111: Advance Directive Observation Constraints Overview	292
Table 112: Advance Directive Type Code Value Set	295
Table 113: Age Observation Contexts	296
Table 114: Age Observation Constraints Overview	297
Table 115: AgePQ_UCUM Value Set.....	298
Table 116: Allergy - Intolerance Observation Contexts	298
Table 117: Allergy - Intolerance Observation Constraints Overview	299
Table 118: Allergy/Adverse Event Type Value Set	303
Table 119: Medication Brand Name Value Set (excerpt).....	303
Table 120: Medication Clinical Drug Value Set (excerpt).....	304
Table 121: Medication Drug Class Value Set (excerpt).....	304
Table 122: Ingredient Name Value Set (excerpt)	305
Table 123: Allergy Problem Act Contexts.....	306
Table 124: Allergy Problem Act Constraints Overview.....	307
Table 125: ProblemAct statusCode Value Set.....	308
Table 126: Allergy Status Observation Contexts.....	309
Table 127: Allergy Status Observation Constraints Overview	309
Table 128: HITSP Problem Status Value Set	310
Table 129: Assessment Scale Observation Contexts	310
Table 130: Assessment Scale Observation Constraints Overview	311
Table 131: Assessment Scale Supporting Observation Contexts	314
Table 132: Assessment Scale Supporting Observation Constraints Overview	314
Table 133: Authorization Activity Contexts	315

Table 134: Authorization Activity Constraints Overview	316
Table 135: Boundary Observation Contexts	317
Table 136: Boundary Observation Constraints Overview	317
Table 137: Caregiver Characteristics Contexts	318
Table 138: Caregiver Characteristics Constraints Overview	319
Table 139: Code Observations Contexts.....	321
Table 140: Code Observations Constraints Overview.....	322
Table 141: Cognitive Status Problem Observation Contexts.....	323
Table 142: Cognitive Status Problem Observation Constraints Overview.....	324
Table 143: Problem type value set	326
Table 144: Problem Value Set (excerpt)	326
Table 145: Cognitive Status Result Observation Contexts.....	328
Table 146: Cognitive Status Result Observation Constraints Overview.....	328
Table 147: Cognitive Status Result Organizer Contexts	331
Table 148: Cognitive Status Result Organizer Constraints Overview	332
Table 149: Comment Activity Contexts	333
Table 150: Comment Activity Constraints Overview	334
Table 151: Coverage Activity Contexts	336
Table 152: Coverage Activity Constraints Overview	336
Table 153: Deceased Observation Contexts.....	337
Table 154: Deceased Observation Constraints Overview.....	338
Table 155: Discharge Medication Contexts.....	339
Table 156: Discharge Medication Constraints Overview.....	340
Table 157: Drug Vehicle Contexts.....	341
Table 158: Drug Vehicle Constraints Overview.....	342
Table 159: Encounter Activities Contexts.....	343
Table 160: Encounter Activities Constraints Overview.....	343
Table 161: Encounter Type Value Set	345
Table 162: Encounter Diagnosis Contexts.....	346
Table 163: Encounter Diagnosis Constraints Overview.....	347
Table 164: Estimated Date of Delivery Contexts	348
Table 165: Estimated Date of Delivery Constraints Overview	348
Table 166: Family History Death Observation Contexts	349
Table 167: Family History Death Observation Constraints Overview	350
Table 168: Family History Observation Contexts	351
Table 169: Family History Observation Constraints Overview	351

Table 170: Family History Organizer Contexts	356
Table 171: Family History Organizer Constraints Overview	356
Table 172: Family History Related Subject Value Set (excerpt)	359
Table 173: Functional Status Problem Observation Contexts	360
Table 174: Functional Status Problem Observation Constraints Overview	360
Table 175: Functional Status Result Observation Contexts	363
Table 176: Functional Status Result Observation Constraints Overview	364
Table 177: Functional Status Result Organizer Contexts.....	366
Table 178: Functional Status Result Organizer Constraints Overview.....	367
Table 179: Health Status Observation Contexts	368
Table 180: Health Status Observation Constraints Overview	368
Table 181: HealthStatus Value Set	369
Table 182: Highest Pressure Ulcer Stage Contexts	371
Table 183: Highest Pressure Ulcer Stage Constraints Overview	371
Table 184: Hospital Admission Diagnosis Contexts	372
Table 185: Hospital Admission Diagnosis Constraints Overview	372
Table 186: Hospital Discharge Diagnosis Contexts.....	373
Table 187: Hospital Discharge Diagnosis Constraints Overview.....	374
Table 188: Immunization Activity Contexts	375
Table 189: Immunization Activity Constraints Overview	376
Table 190: Immunization Medication Information Contexts	381
Table 191: Immunization Medication Information Constraints Overview	382
Table 192: Vaccine Administered (Hepatitis B) Value Set (excerpt).....	383
Table 193: Immunization Refusal Reason Contexts.....	384
Table 194: Immunization Refusal Reason Constraints Overview.....	384
Table 195: No Immunization Reason Value Set	385
Table 196: Indication Contexts	386
Table 197: Indication Constraints Overview	386
Table 198: Instructions Contexts.....	388
Table 199: Instructions Constraints Overview.....	388
Table 200: Patient Education Value Set	389
Table 201: Medication Activity Contexts	390
Table 202: Medication Activity Constraints Overview	390
Table 203: MoodCodeEvnInt Value Set	395
Table 204: Medication Route FDA Value Set (excerpt)	396
Table 205: Body Site Value Set (excerpt)	396

Table 206: Medication Product Form Value Set (excerpt)	397
Table 207: Unit of Measure Value Set (excerpt)	397
Table 208: Medication Dispense Contexts	399
Table 209: Medication Dispense Constraints Overview	400
Table 210: Medication Fill Status Value Set	401
Table 211: Medication Information Contexts	402
Table 212: Medication Information Constraints Overview	403
Table 213: Medication Supply Order Contexts	404
Table 214: Medication Supply Order Constraints Overview	405
Table 215: Non-Medicinal Supply Activity Contexts.....	408
Table 216: Non-Medicinal Supply Activity Constraints Overview.....	409
Table 217: Number of Pressure Ulcers Observation Contexts	410
Table 218: Number of Pressure Ulcers Observation Constraints Overview.....	410
Table 219: Plan of Care Activity Act Contexts.....	412
Table 220: Plan of Care Activity Act Constraints Overview.....	412
Table 221: Plan of Care moodCode (Act/Encounter/Procedure)	413
Table 222: Plan of Care Activity Encounter Contexts.....	413
Table 223: Plan of Care Activity Encounter Constraints Overview.....	414
Table 224: Plan of Care Activity Observation Contexts	414
Table 225: Plan of Care Activity Observation Constraints Overview	415
Table 226: Plan of Care moodCode (Observation) Value Set	415
Table 227: Plan of Care Activity Procedure Contexts	416
Table 228: Plan of Care Activity Procedure Constraints Overview	416
Table 229: Plan of Care Activity Substance Administration Contexts	417
Table 230: Plan of Care Activity Substance Administration Constraints Overview	417
Table 231: Plan of Care moodCode (SubstanceAdministration/Supply) Value Set	418
Table 232: Plan of Care Activity Supply Contexts	418
Table 233: Plan of Care Activity Supply Constraints Overview	419
Table 234: Policy Activity Contexts	419
Table 235: Policy Activity Constraints Overview	420
Table 236: Health Insurance Type Value Set (excerpt)	426
Table 237: Coverage Type Value Set	427
Table 238: Financially Responsible Party Value Set (excerpt).....	427
Table 239: Postprocedure Diagnosis Contexts	430
Table 240: Postprocedure Diagnosis Constraints Overview	430
Table 241: Precondition for Substance Administration Contexts	431

Table 242: Precondition for Substance Administration Constraints Overview	431
Table 243: Pregnancy Observation Contexts	432
Table 244: Pregnancy Observation Constraints Overview	432
Table 245: Preoperative Diagnosis Contexts	434
Table 246: Preoperative Diagnosis Constraints Overview	435
Table 247: Pressure Ulcer Observation Contexts	436
Table 248: Pressure Ulcer Observation Constraints Overview	436
Table 249 Pressure Ulcer Stage Value Set	440
Table 250: Pressure Point Value Set	441
Table 251: Target Site Qualifiers Value Set	442
Table 252: Problem Concern Act (Condition) Contexts	444
Table 253: Problem Concern Act (Condition) Constraints Overview	444
Table 254: Problem Observation Contexts	446
Table 255: Problem Observation Constraints Overview	446
Table 256: Problem Status Contexts	451
Table 257: Problem Status Constraints Overview	451
Table 258: Procedure Activity Act Contexts	452
Table 259: Procedure Activity Act Constraints Overview	454
Table 260: Procedure Act Status Code Value Set	458
Table 261: Act Priority Value Set	458
Table 262: Procedure Activity Observation Contexts	460
Table 263: Procedure Activity Observation Constraints Overview	460
Table 264: Procedure Activity Procedure Contexts	466
Table 265: Procedure Activity Procedure Constraints Overview	466
Table 266: Procedure Context Contexts	472
Table 267: Procedure Context Constraints Overview	472
Table 268: Product Instance Contexts	473
Table 269: Product Instance Constraints Overview	474
Table 270: Purpose of Reference Observation Contexts	475
Table 271: Purpose of Reference Observation Constraints Overview	475
Table 272: DICOM Purpose of Reference Value Set	476
Table 273: Quantity Measurement Observation Contexts	476
Table 274: Quantity Measurement Observation Constraints Overview	477
Table 275: DIR Quantity Measurement Type Value Set	478
Table 276: DICOM Quantity Measurement Type Value Set	479
Table 277: Reaction Observation Contexts	480

Table 278: Reaction Observation Constraints Overview	480
Table 279: Referenced Frames Observation Constraints Overview	483
Table 280: Result Observation Contexts	484
Table 281: Result Observation Constraints Overview	485
Table 282: Result Status Value Set.....	487
Table 283: Result Organizer Contexts	488
Table 284: Result Organizer Constraints Overview	489
Table 285: Series Act Contexts	490
Table 286: Series Act Constraints Overview	491
Table 287: Service Delivery Location Contexts	493
Table 288: Service Delivery Location Constraints Overview	493
Table 289: HealthcareServiceLocation Value Set (excerpt)	494
Table 290: Severity Observation Contexts	495
Table 291: Severity Observation Constraints Overview	495
Table 292: Problem Severity Value Set.....	496
Table 293: Smoking Status Observation Contexts	497
Table 294: Smoking Status Observation Constraints Overview	498
Table 295: Smoking Status Value Set	499
Table 296: Social History Observation Contexts	500
Table 297: Social History Observation Constraints Overview	500
Table 298: Social History Type Set Definition Value Set	501
Table 299: SOP Instance Observation Contexts.....	502
Table 300: SOP Instance Observation Constraints Overview.....	502
Table 301: Study Act Contexts	505
Table 302: Study Act Constraints Overview	506
Table 303: Text Observation Contexts.....	507
Table 304: Text Observation Constraints Overview.....	508
Table 305: Tobacco Use Observation Contexts	510
Table 306: Tobacco Use Constraints Overview	511
Table 307: Tobacco Use Value Set	512
Table 308: Vital Sign Observation Contexts	512
Table 309: Vital Sign Observation Constraints Overview	513
Table 310: Vital Sign Result Type Value Set.....	514
Table 311: Vital Signs Organizer Contexts	515
Table 312: Vital Signs Organizer Constraints Overview	516
Table 313: Templates Added and Updated in May 2012 Ballot	522

Table 314: H&P Cardinality Updates	523
Table 315: Consultation Note Cardinality Updates	523
Table 316: Discharge Summary Cardinality Updates	524
Table 317: Surgical Operative Codes Mapping to Generic Procedure Codes.....	524
Table 318: Consolidated Conformance Verb Matrix.....	525
Table 319: Section Template Change Tracking.....	527
Table 320: Entry Change Tracking Table	535
Table 321: Result Section Changes.....	539
Table 322: Problems Section Changes	540
Table 323: Vital Signs Section Changes	543
Table 324: Procedures Section Changes	545
Table 325: Medications Section Changes	548
Table 326: Template Ids Alphabetically by Template Type	557
Table 327: Code Systems in This Guide.....	563
Table 328: Value Sets in This Guide	565
Table 329: Single-Value Bindings in This Guide.....	568
Table 330: Comparison of XDS-SD and Clinical Document Header	571

2 INTRODUCTION

2.1 Audience

The audiences for this implementation guide are the architects and developers of healthcare information technology (HIT) systems in the US Realm that exchange patient clinical data. This includes those exchanges that comply to the Health Information Technology for Economic and Clinical Health (HITECH) provisions of the [American Recovery And Reinvestment Act of 2009](#), the [Final Rules for Stage 1 Meaningful Use](#), and the [45 CFR Part 170 – Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule](#).¹

Business analysts and policy managers can also benefit from a basic understanding of the use of Clinical Document Architecture (CDA) templates across multiple implementation use cases.

2.2 Purpose

This guide contains a library of CDA templates, incorporating and harmonizing previous efforts from Health Level Seven (HL7), Integrating the Healthcare Enterprise (IHE), and Health Information Technology Standards Panel (HITSP). It represents harmonization of the HL7 Health Story guides, HITSP C32, related components of IHE Patient Care Coordination (IHE PCC), and Continuity of Care (CCD), and it includes all required CDA templates in [Final Rules for Stage 1 Meaningful Use](#) and [45 CFR Part 170 – Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule](#).

This guide is a single source for implementing the following CDA documents (see the [References](#) section for complete source listings):

- Continuity of Care Document (CCD) (Release 1.1)
- Consultation Notes (Release 1.1)
- Discharge Summary (Release 1.1)
- Imaging Integration, and DICOM Diagnostic Imaging Reports (DIR) (US Realm - Release 1)
- History and Physical (H&P) (Release 1.1)
- Operative Note (Release 1.1)
- Progress Note (Release 1.1)
- Procedure Note (US Realm – Release 1)
- Unstructured Documents (Release 1.1)

¹ Many aspects of this guide were designed to meet the anticipated clinical document exchange requirements of Stage 2 Meaningful Use. At the time of this publication, Stage 2 Meaningful Use has not been published.

The release 1.1 documents supersede existing release 1 publications. Procedure Note and DIR are designated as release 1 because this guide is the first US Realm release of these standards. The existing, separate Procedure Note and DIR universal-realm guides are still valid for outside the US.

2.3 Scope

This document is scoped by the content of the eight Health Story Guides, CCD, and additional constraints from IHE and HITSP. New conformance rules were not introduced unless an ambiguity or conflict existed among the standards.

All CDA templates required for Final Rules for Stage 1 Meaningful Use² are included in this guide. All CDA templates required for Health Story compliance to the section level are included, as well, of course, as the Health Story reuse of Stage 1 Meaningful Use templates.

This guide fully specifies a compliant CDA R2 document for each document type.

Additional optional CDA elements, not included here, can be included and the result will be compliant with the documents in this standard.

2.4 Approach

In the development of this specification, the Consolidation Project team reviewed the eight existing HL7 Health Story guides, CCD, and the additional constraints from IHE, HITSP and Stage 1 Meaningful Use.

The Consolidation Project team members completed the analysis by creating a fully compliant CCD document, then layering in the additional HITSP, IHE and Stage 1 Meaningful Use constraints. When a new constraint introduced an issue, conflict or ambiguity, the item was flagged for review with the full consolidation team. The full analysis covered the CDA Header, section-level and entry-level requirements sufficient for Stage 1 Meaningful Use. The Project also reviewed document and section-level requirements for the full set of document types.

All major template changes are summarized in the [Change Appendix](#)

All involved in the Consolidation Project recognize the critical need for an intrinsic tie between the human-readable conformance requirements, the computable expression of those requirements, the production of validation test suites and application interfaces to facilitate adoption. To that end, the analysis performed by the volunteers and staff of the Consolidation Project was the prelude to data entry into a set of model-based tools.

Conformance requirements and value set tables published here are output from the Template Database (Tdb), an open-source application first developed for the Centers for Disease Control and Prevention and in active use by the National

² <http://edocket.access.gpo.gov/2010/pdf/2010-17207.pdf>

Many aspects of this guide were designed to meet the anticipated clinical document exchange requirements of Stage 2 Meaningful Use, which had not been released when this guide was published

Healthcare Safety Network³. The Tdb is the source for generation of platform-independent validation rules as Schematron⁴ (compiled XPath). The Tdb is available as the Trifolia Workbench (Consolidation Project Edition) on the HL7 website⁵.

The consolidation of templates developed across these organizations and their publication in catalog form driven from model-based tools is a strong step toward satisfying the full range of requirements for clinical information use and reuse through templated CDA.

2.5 Organization of This Guide

This guide includes a set of CDA Templates and prescribes their use for a set of specific document types. The main chapters are:

[Chapter 2. General Header Template](#). This chapter defines a template for the header constraints that apply across all of the consolidated document types.

[Chapter 3. Document-Level Templates](#). This chapter defines each of the nine document types. It defines header constraints specific to each and the section-level templates (required and optional) for each.

[Chapter 4. Section-Level Templates](#). This chapter defines the section templates referenced within the document types described here. Sections are atomic units, and can be reused by future specifications.

[Chapter 5. Entry-Level Templates](#). This chapter defines entry-level templates, called clinical statements. Machine processable data are sent in the entry templates. The entry templates are referenced by one or more section templates. Entry-level templates are always contained in section-level templates, and section-level templates are always contained in a document.

[Appendices](#). The Appendices include non-normative content to support implementers. It includes a [Change Appendix](#) summary of previous and updated templates.

2.6 Use of Templates

Template identifiers (`templateId`) are assigned at the document, section, and entry level. When valued in an instance, the template identifier signals the imposition of a set of template-defined constraints. The value of this attribute (e.g. `@root="2.16.840.1.113883.10.20.22.4.8"`) provides a unique identifier for the template in question.

If a template is a specialization of another template, its first constraint indicates the more general template. The general template is not always required. In all cases where a more specific template conforms to a more general template,

³ <http://www.lantanagroup.com/resources/tools/>

⁴ <http://www.schematron.com/>

⁵ <http://www.lantanagroup.com/newsroom/press-releases/trifolia-workbench/>

You must be logged in as a member of HL7.org to access this resource:

http://www.hl7.org/login/singlesignon.cfm?next=/documentcenter/private/standards/cda/Trifolia_HL7_Consolidation_20110712-dist.zip

asserting the more specific template also implies conformance to the more general template.

2.6.1 Originator Responsibilities: General Case

An originator can apply a `templateId` if there is a desire to assert conformance with a particular template.

In the most general forms of CDA exchange, an originator need not apply a `templateId` for every template that an object in an instance document conforms to. The implementation guide (IG) shall assert whenever `templateIds` are required for conformance.

2.6.2 Recipient Responsibilities: General Case

A recipient may reject an instance that does not contain a particular `templateId` (e.g., a recipient looking to receive only Procedure Note documents can reject an instance without the appropriate `templateId`).

A recipient may process objects in an instance document that do not contain a `templateId` (e.g., a recipient can process entries that contain Observation acts within a Problems section, even if the entries do not have `templateIds`).

2.7 Levels of Constraint

The CDA standard describes conformance requirements in terms of three general levels corresponding to three different, incremental types of conformance statements:

- Level 1 requirements impose constraints upon the CDA Header. The body of a Level 1 document may be XML or an alternate allowed format. If XML, it must be CDA-conformant markup.
- Level 2 requirements specify constraints at the section level of a CDA XML document: most critically, the section code and the cardinality of the sections themselves, whether optional or required.
- Level 3 requirements specify constraints at the entry level within a section. A specification is considered “Level 3” if it requires any entry-level templates.

Note that these levels are rough indications of what a recipient can expect in terms of machine-processable coding and content reuse. They do not reflect the level or type of clinical content, and many additional levels of reusability could be defined.

In this consolidated guide, Unstructured Documents, by definition, are Level 1. Stage 1 Meaningful Use of CCD requires certain entries and is therefore a Level 3 requirement. The balance of the document types can be implemented at any level.

In all cases, required clinical content must be present. For example, a CDA Procedure Note carrying the `templateId` that asserts conformance with Level 1 may use a PDF (portable document format) or HTML (hypertext markup

language) format for the body of the document that contains the required clinical content. Conformance, in this case, to the clinical content requirements could not be validated without human review.

The section libraries for each document type list the required and optional sections.

2.8 Conformance Conventions Used in This Guide

2.8.1 Templates and Conformance Statements

Conformance statements within this implementation guide are presented as constraints from a Template Database (Tdb). An algorithm converts constraints recorded in a Templates Database to a printable presentation. Each constraint is uniquely identified by an identifier at or near the end of the constraint (e.g., CONF:7345). These identifiers are persistent but not sequential.

Bracketed information following each template title indicates the template type (section, observation, act, procedure, etc.), the templateId, and whether the template is [open or closed](#).

Each [section](#) and [entry](#) template in the guide includes a context table. The "Used By" column indicates which documents or sections use this template, and the "Contains Entries" column indicates any entries that the template uses. Each [entry](#) template also includes a constraint overview table to summarize the constraints following the table.

The following figure shows a typical template explanation presented in this guide. The next sections describe specific aspects of conformance statements—open vs. closed statements, conformance verbs, cardinality, vocabulary conformance, containment relationships, and null flavors.

Figure 1: Constraints format example

Severity Observation
[observation: templateId 2.16.840.1.113883.10.20.22.4.8 (open)]
<i>Table xxx: Severity Observation Contexts</i>

This clinical statement represents the severity of the reaction to an agent. A person may manifest many symptoms ...

Table yyy: Severity Observation Contexts

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Severity Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.8']					
	@classCode	1..1	SHALL		7345	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7346	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7347	
	@root	1..1	SHALL		10525	2.16.840.1.113883.10.20.22.4.8
	code	1..1	SHALL	CE	7349	2.16.840.1.113883.5.4 (ActCode) = SEV
severity FreeText	text	0..1	SHOULD	ED	7350	
	reference /@value	0..1	SHOULD		7351	
	statusCode	1..1	SHALL	CS	7352	2.16.840.1.113883.5.14 (ActStatus) = completed
severity Coded	value	1..1	SHALL	CD	7356	2.16.840.1.113883.3.88.12.3221.6.8 (Problem Severity)
	interpretation Code	0..*	SHOULD	CE	9117	
	code	0..1	SHOULD	CE	9118	2.16.840.1.113883.1.11.78 (Observation Interpretation (HL7))

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7345).
 2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7346).
 3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7347) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.8" (CONF:10525).

4. **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE"="SEV" Severity Observation (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:7349).
5. **SHOULD** contain zero or one [0..1] **text** (CONF:7350).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference/@value** (CONF:7351).
 - i. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:7378).
6. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:7352).
7. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the @code **SHALL** be selected from ValueSet Problem Severity 2.16.840.1.113883.3.88.12.3221.6.8 **DYNAMIC** (CONF:7356).
8. **SHOULD** contain zero or more [0..*] **interpretationCode** (CONF:9117).
 - a. The interpretationCode, if present, **SHOULD** contain zero or one [0..1] **code** with @xsi:type="CE", where the @code **SHOULD** be selected from ValueSet Observation Interpretation (HL7 2.16.840.1.113883.1.11.78 **DYNAMIC** (CONF:9118).

2.8.2 Open and Closed Templates

In open templates, all of the features of the CDA R2 base specification are allowed except as constrained by the templates. By contrast, a closed template specifies everything that is allowed and nothing further may be included.

[Estimated Date of Delivery](#) (templateId 2.16.840.1.113883.10.20.15.3.1) is an example of a closed template in this guide.

Open templates allow HL7 implementers to develop additional structured content not constrained within this guide. HL7 encourages implementers to bring their use cases forward as candidate requirements to be formalized in a subsequent version of the standard to maximize the use of shared semantics.

2.8.3 Conformance Verbs (Keywords)

The keywords **SHALL**, **SHOULD**, **MAY**, **NEED NOT**, **SHOULD NOT**, and **SHALL NOT** in this document are to be interpreted as described in the [HL7 Version 3 Publishing Facilitator's Guide](#) (<http://www.hl7.org/v3ballot/html/help/pfg/pfg.htm>):

- **SHALL**: an absolute requirement
- **SHALL NOT**: an absolute prohibition against inclusion
- **SHOULD/SHOULD NOT**: best practice or recommendation. There may be valid reasons to ignore an item, but the full implications must be understood and carefully weighed before choosing a different course
- **MAY/NEED NOT**: truly optional; can be included or omitted as the author decides with no implications

The keyword "**SHALL**" allows the use of nullFlavor unless the requirement is on an attribute or the use of nullFlavor is explicitly precluded.

The [Consolidated Conformance Verb Matrix](#) table represents a matrix of the conformance verbs used across the standards reviewed for the consolidation guide.

The subject of a conformance verb (keyword) in a top-level constraint is the template itself; for example, the subject of [CONF:5249](#) is the ClinicalDocument element. In nested constraints, the subject is the element in the containing constraint. Top-level constraints are those that begin with a number and are not indented.

2.8.4 Cardinality

The cardinality indicator (0..1, 1..1, 1..*, etc.) specifies the allowable occurrences within a document instance. The cardinality indicators are interpreted with the following format "m...n" where m represents the least and n the most:

- 0..1 zero or one
- 1..1 exactly one
- 1..* at least one
- 0..* zero or more
- 1..n at least one and not more than n

When a constraint has subordinate clauses, the scope of the cardinality of the parent constraint must be clear. In the next figure, the constraint says exactly one participant is to be present. The subordinate constraint specifies some additional characteristics of that participant.

Figure 2: Constraints format – only one allowed

1. **SHALL** contain exactly one [1..1] **participant** (CONF:2777).
 - a. This participant **SHALL** contain exactly one [1..1] @typeCode="LOC" (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) (CONF:2230).

In the next figure, the constraint says only one participant "like this" is to be present. Other participant elements are not precluded by this constraint.

Figure 3: Constraints format – only one like this allowed

1. **SHALL** contain exactly one [1..1] **participant** (CONF:2777) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="LOC" (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) (CONF:2230).

2.8.5 Optional and Required with Cardinality

The terms *optional* and *required* describe the *lower* bound of cardinality as follows:

Optional means that the number of allowable occurrences of an element may be 0; the cardinality will be expressed as [0..1] or [0..*] or similar. In these cases, the element may not be present in the instance.

Required means that the number of allowable occurrences of an element must be at least 1; the cardinality will be expressed as [m..n] where m >=1 and n >=1 for example [1..1] or [1..*].. In these cases, the element must be present in the instance. If an element is required, but is not known (and would otherwise be omitted if it were optional), it must be represented by a [nullFlavor](#).

2.8.6 Vocabulary Conformance

The templates in this document use terms from several code systems. These vocabularies are defined in various supporting specifications and may be maintained by other bodies, as is the case for the LOINC® and SNOMED CT® vocabularies.

Note that value-set identifiers (e.g., ValueSet 2.16.840.1.113883.1.11.78 Observation Interpretation (HL7) **DYNAMIC**) do not appear in CDA submissions; they tie the conformance requirements of an implementation guide to the appropriate code system for validation.

Value-set bindings adhere to HL7 Vocabulary Working Group best practices, and include both a conformance verb (**SHALL**, **SHOULD**, **MAY**, etc.) and an indication of **DYNAMIC** vs. **STATIC** binding. Value-set constraints can be **STATIC**, meaning that they are bound to a specified version of a value set, or **DYNAMIC**, meaning that they are bound to the most current version of the value set. A simplified constraint, used when the binding is to a single code, includes the meaning of the code, as follows.

Figure 4: Binding to a single code

```
... SHALL contain exactly one [1..1] code (CONF:15407).
  a. This code SHALL contain exactly one [1..1] @code="11450-4" Problem
List
  (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15408).
```

The notation conveys the actual code (11450-4), the code's displayName (Problem List), the OID of the codeSystem from which the code is drawn (2.16.840.1.113883.6.1), and the codeSystemName (LOINC).

HL7 Data Types Release 1 requires the codeSystem attribute unless the underlying data type is “Coded Simple” or “CS”, in which case it is prohibited. The displayName and the codeSystemName are optional, but recommended, in all cases.

The above example would be properly expressed as follows.

Figure 5: XML expression of a single-code binding

```
<code code="11450-4" codeSystem="2.16.840.1.113883.6.1"/>  
  
<!-- or -->  
  
<code code="11450-4" codeSystem="2.16.840.1.113883.6.1"  
      displayName="Problem List"  
      codeSystemName="LOINC"/>
```

A full discussion of the representation of vocabulary is outside the scope of this document; for more information, see the HL7 V3 Normative Edition 2010⁶ sections on Abstract Data Types and XML Data Types R1.

There is a discrepancy in the implementation of translation code versus the original code between HL7 Data Types R1 and the convention agreed upon for this specification. The R1 data type requires the original code in the root. This implementation guide specifies the standard code in the root, whether it is original or a translation. This discrepancy is resolved in HL7 Data Types R2.

Figure 6: Translation code example

```
<code code='206525008'  
      displayName='neonatal necrotizing enterocolitis'  
      codeSystem='2.16.840.1.113883.6.96'  
      codeSystemName='SNOMED CT'>  
  <translation code='NEC-1'  
    displayName='necrotizing enterocolitis'  
    codeSystem='2.16.840.1.113883.19'/'>  
</code>
```

2.8.7 Containment Relationships

Containment constraints between a section and its entry are indirect in this guide, meaning that where a section asserts containment of an entry, that entry can either be a direct child or a further descendent of that section.

For example, in the following constraint:

1. **SHALL** contain at least one [1..*] **entry** (CONF:8647) such that it
 - a. **SHALL** contain exactly one [1..1] [Advance Directive Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.48) (CONF:8801).

the Advance Directive Observation can be a direct child of the section (i.e., section/entry/AdvanceDirectiveObservation) or a further descendent of that section (i.e., section/entry/.../AdvanceDirectiveObservation). Either of these are conformant.

⁶ HL7 Version 3 Interoperability Standards, Normative Edition 2010.
<http://www.hl7.org/memonly/downloads/v3edition.cfm> - V32010

All other containment relationships are direct, for example:

1. **SHALL** contain exactly one [1..1]
templateId/@root="2.16.840.1.113883.10.20.22.2.21" (CONF:7928).

The templateId must be a direct child of the section (i.e., section/templateId).

2.8.8 Null Flavor

Information technology solutions store and manage data, but sometimes data are not available: an item may be unknown, not relevant, or not computable or measureable. In HL7, a *flavor* of null, or `nullFlavor`, describes the reason for missing data.

For example, if a patient arrives at an Emergency Department unconscious and with no identification, we would use a null flavor to represent the lack of information. The patient's birth date would be represented with a null flavor of "NAV", which is the code for "temporarily unavailable". When the patient regains consciousness or a relative arrives, we expect to know the patient's birth date.

Figure 7: nullFlavor example

```
<birthTime nullFlavor="NAV"/> <!--coding an unknown birthdate-->
```

Use null flavors for unknown, required, or optional attributes:

NI	No information. This is the most general and default null flavor.
NA	Not applicable. Known to have no proper value (e.g., last menstrual period for a male).
UNK	Unknown. A proper value is applicable, but is not known.
ASKU	Asked, but not known. Information was sought, but not found (e.g., the patient was asked but did not know).
NAV	Temporarily unavailable. The information is not available, but is expected to be available later.
NASK	Not asked. The patient was not asked.
MSK	There is information on this item available but it has not been provided by the sender due to security, privacy, or other reasons. There may be an alternate mechanism for gaining access to this information.

This above list contains those null flavors that are commonly used in clinical documents. For the full list and descriptions, see the `nullFlavor` vocabulary domain in the CDA normative edition⁷.

Any **SHALL** conformance statement may use `nullFlavor`, unless the attribute is required or the `nullFlavor` is explicitly disallowed. **SHOULD** and **MAY** conformance statement may also use `nullFlavor`.

⁷ HL7 Clinical Document Architecture (CDA Release 2)
<http://www.hl7.org/implement/standards/cda.cfm>

Figure 8: Attribute required

1. **SHALL** contain exactly one [1..1] code (CONF:15407).
 - a. This code **SHALL** contain exactly one [1..1] @code="11450-4" Problem List (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15408).
or
2. **SHALL** contain exactly one [1..1] effectiveTime/@value (CONF:5256).

Figure 9: Allowed nullFlavors when element is required (with xml examples)

1. **SHALL** contain at least one [1..*] id
2. **SHALL** contain exactly one [1..1] code
3. **SHALL** contain exactly one [1..1] effectiveTime

```
<entry>
  <observation classCode="OBS" moodCode="EVN">
    <id nullFlavor="NI"/>
    <code nullFlavor="OTH">
      <originalText>New Grading system</originalText>
    </code>
    <statusCode code="completed"/>
    <effectiveTime nullFlavor="UNK"/>
    <value xsi:type="CD" nullFlavor="NAV">
      <originalText>Spiculated mass grade 5</originalText>
    </value>
  </observation>
</entry>
```

Figure 10: nullFlavor explicitly disallowed

1. **SHALL** contain exactly one [1..1] effectiveTime (CONF:5256).
 - a. **SHALL NOT** contain [0..0] nullFlavor (CONF:52580).

2.8.9 Unknown Information

If a sender wants to state that a piece of information is unknown, the following principles apply:

1. If the sender doesn't know an attribute of an act, that attribute can be null.

Figure 11: Unknown medication example

```
<entry>
  <text>patient was given a medication but I do not know what it
  was</text>
  <substanceAdministration moodCode="EVN" classCode="SBADM">
    <consumable>
      <manufacturedProduct>
        <manufacturedLabeledDrug>
          <code nullFlavor="NI"/>
        </manufacturedLabeledDrug>
      </manufacturedProduct>
    </consumable>
  </substanceAdministration>
</entry>
```

- If the sender doesn't know if an act occurred, the nullFlavor is on the act (detail could include specific allergy, drug, etc.).

Figure 12: Unknown medication use of anticoagulant drug example

```
<entry>
  <substanceAdministration moodCode="EVN" classCode="SBADM"
nullFlavor="NI">
    <text>I do not know whether or not patient received an anticoagulant
          drug</text>
    <consumable>
      <manufacturedProduct>
        <manufacturedLabeledDrug>
          <code code="81839001" displayName="anticoagulant drug"
                codeSystem="2.16.840.1.113883.6.96"
                codeSystemName="SNOMED CT"/>
        </manufacturedLabeledDrug>
      </manufacturedProduct>
    </consumable>
  </substanceAdministration>
</entry>
```

- If the sender wants to state 'no known', a negationInd can be used on the corresponding act (substanceAdministration, Procedure, etc.)

Figure 13: No known medications example

```
<entry>
  <substanceAdministration moodCode="EVN" classCode="SBADM"
negationInd="true">
    <text>No known medications</text>
    <consumable>
      <manufacturedProduct>
        <manufacturedLabeledDrug>
          <code code="410942007" displayName="drug or medication"
                codeSystem="2.16.840.1.113883.6.96"
                codeSystemName="SNOMED CT"/>
        </manufacturedLabeledDrug>
      </manufacturedProduct>
    </consumable>
  </substanceAdministration>
</entry>
```

Previously CCD, IHE, and HITSP recommended using specific codes to assert no known content, for example 160244002 No known allergies or 160245001 No current problems or disability. Specific codes are still allowed; however, use of these codes is not recommended.

2.8.10 Data Types

All data types used in a CDA document are described in the CDA R2 normative edition⁸. All attributes of a data type are allowed unless explicitly prohibited by this specification.

⁸ HL7 Clinical Document Architecture (CDA Release 2).
<http://www.hl7.org/implement/standards/cda.cfm>

2.9 XML Conventions Used in This Guide

2.9.1 XPath Notation

Instead of the traditional dotted notation used by HL7 to represent Reference Information Model (RIM) classes, this document uses XML Path Language (XPath) notation⁹ in conformance statements and elsewhere to identify the Extended Markup Language (XML) elements and attributes within the CDA document instance to which various constraints are applied. The implicit context of these expressions is the root of the document. This notation provides a mechanism that will be familiar to developers for identifying parts of an XML document.

XPath statements appear in this document in a monospace font.

XPath syntax selects nodes from an XML document using a path containing the context of the node(s). The path is constructed from node names and attribute names (prefixed by a '@') and catenated with a '/' symbol.

Figure 14: XML document example

```
<author>
  <assignedAuthor>
    ...
      <code codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'
            code='17561000' displayName='Cardiologist' />
    ...
  </assignedAuthor>
</author>
```

In the above example, the code attribute of the code could be selected with the XPath expression in the next figure.

Figure 15: XPath expression example

```
author/assignedAuthor/code/@code
```

2.9.2 XML Examples and Sample Documents

Extended Mark-up Language (XML) examples appear in figures in this document in this monospace font. Portions of the XML content may be omitted from the content for brevity, marked by an ellipsis (...) as shown in the example below.

Figure 16: ClinicalDocument example

```
<ClinicalDocument xmlns="urn:h17-org:v3">
  ...
</ClinicalDocument>
```

Within the narrative, XML element (code, assignedAuthor, etc.) and attribute (SNOMED CT, 17561000, etc.) names also appear in this monospace font.

⁹ <http://www.w3.org/TR/xpath/>

This publication package includes complete sample documents as listed in the [Content of the Package](#) table below. These documents conform to the Level 1, Level 2, and Level 3 constraints of this guide (see the [Levels of Constraint](#) section).

2.10 UML Diagrams

Some sections may include a Unified Modeling Language (UML) class diagram to provide further clarification. For example, a class diagram might describe the generalization-specialization hierarchy of Act classes (see the [Results section UML Diagram](#) figure.) The UML diagrams were output from the Model-Driven Health Tools (MDHT) developed under the auspices of the Veterans Administration and IBM with assistance from the ONC Standards & Interoperability Framework¹⁰.

2.11 Content of the Package

The following files comprise the package:

Table 1: Content of the Package

Filename	Description	Standards Applicability
CDAR2_IG_IHE_CONSOL_R1_U1_2012MAY	Implementation Guide	Normative
Consults.sample.xml	Consultation Note	Informative
DIR.sample.xml	Diagnostic Imaging Report	Informative
CCD.sample.xml	Continuity of Care Document/C32	Informative
DS.sample.xml	Discharge Summary Report	Informative
HandP.sample.xml	History and Physical Report	Informative
OpNote.sample.xml	Operative Note	Informative
Procedure_Note.sample.xml	Procedure Note	Informative
Progress_Note.sample.xml	Progress Note	Informative
UD.sample.xml	Unstructured Document	Informative
cda.xsl	CDA stylesheet	Informative
Discharge_Summary_cda.xsl	Adds discharge disposition to cda.xsl header	Informative
Consolidated CCD template hierarchy	Hierarchy of CCD sections and entries	Informative
CDA_Schema_Files (folder)	Updated schema to validate extensions to CDA R2 introduced in this guide	Informative

¹⁰ <http://www.openhealthtools.org/charter/Charter-ModelingToolsForHealthcare.pdf>

3 GENERAL HEADER TEMPLATE

This template describes constraints that apply to the header for all documents within the scope of this implementation guide. Header constraints specific to each document type are described in the appropriate document-specific section below.

3.1 Document Type Codes

CDA R2 states that LOINC is the preferred vocabulary for document type codes, which specify the type of document being exchanged (e.g., History and Physical). Each document type in this guide recommends a single preferred clinicalDocument/code, with further specification provided by author or performer, setting, or specialty.

3.2 US Realm Header

[ClinicalDocument: templateId
2.16.840.1.113883.10.20.22.1.1 (open)]

1. **SHALL** contain exactly one [1..1] **realmCode**="US" (CONF:16791).
2. **SHALL** contain exactly one [1..1] **typeId** (CONF:5361).
 - a. This typeId **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.1.3" (CONF:5250).
 - b. This typeId **SHALL** contain exactly one [1..1] **@extension**="POCD_HD000040" (CONF:5251).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:5252) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.1.1" (CONF:10036).
4. **SHALL** contain exactly one [1..1] **id** (CONF:5363).
 - a. This id **SHALL** be a globally unique identifier for the document (CONF:9991).
5. **SHALL** contain exactly one [1..1] **code** (CONF:5253).
 - a. This code **SHALL** specify the particular kind of document (e.g. History and Physical, Discharge Summary, Progress Note) (CONF:9992).
6. **SHALL** contain exactly one [1..1] **title** (CONF:5254).
 - a. Can either be a locally defined name or the display name corresponding to clinicalDocument/code (CONF:5255).
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:5256).
 - a. The content **SHALL** be a conformant US Realm Date and Time (DTM.US.FIELDDED) (2.16.840.1.113883.10.20.22.5.4) (CONF:16865).
8. **SHALL** contain exactly one [1..1] **confidentialityCode**, which **SHOULD** be selected from ValueSet HL7 BasicConfidentialityKind 2.16.840.1.113883.1.11.16926 **STATIC** 2010-04-21 (CONF:5259).

9. **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet Language 2.16.840.1.113883.1.11.11526 **DYNAMIC** (CONF:5372).
10. **MAY** contain zero or one [0..1] **setId** (CONF:5261).
 - a. If setId is present versionNumber **SHALL** be present (CONF:6380).¹¹
11. **MAY** contain zero or one [0..1] **versionNumber** (CONF:5264).
 - a. If versionNumber is present setId **SHALL** be present (CONF:6387).¹²

Table 2: Basic Confidentiality Kind Value Set

Value Set: HL7 BasicConfidentialityKind 2.16.840.1.113883.1.11.16926 STATIC 2010-04-21		
Code System(s): Confidentiality Code 2.16.840.1.113883.5.25		
Code	Code System	Print Name
N	Confidentiality Code	Normal
R	Confidentiality Code	Restricted
V	Confidentiality Code	Very Restricted

Table 3: Language Value Set (excerpt)

Value Set: Language 2.16.840.1.113883.1.11.11526 DYNAMIC		
Code System(s): Internet Society Language 2.16.840.1.113883.1.11.11526		
Description:	A value set of codes defined by Internet RFC 4646 (replacing RFC 3066). Please see ISO 639 language code set maintained by Library of Congress for enumeration of language codes http://www.ietf.org/rfc/rfc4646.txt	
Code	Code System	Print Name
en	Internet Society Language	english
fr	Internet Society Language	french
ar	Internet Society Language	arabic
en-US	Internet Society Language	English, US
es-US	Internet Society Language	Spanish, US
...		

¹¹ From CDA Normative Web edition: 4.2.1.7 ClinicalDocument.setId - Represents an identifier that is common across all document revisions and “Document Identification, Revisions, and Addenda” under 4.2.3.1 ParentDocument

¹² From CDA Normative Web edition: 4.2.1.8 ClinicalDocument.versionNumber An integer value used to version successive replacement documents

Figure 17: US Realm header example

```
<realmCode code="US"/>
<typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
<!-- US General Header Template -->
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>

<!-- History and Physical Template -->
<templateId root="2.16.840.1.113883.10.20.22.1.3"/>

<id extension="999021" root="2.16.840.1.113883.19"/>

<code codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC" code="34117-2"
      displayName="History and Physical Note"/>

<title>Good Health History & Physical</title>

<effectiveTime value="20050329171504+0500"/>
<confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
<languageCode code="en-US"
               displayName="English, US"
               codeSystem="2.16.840.1.113883.1.11.11526"
               codeSystemName="Internet Society Language"/>
<setId extension="111199021" root="2.16.840.1.113883.19"/>
<versionNumber value="1"/>
```

Figure 18: effectiveTime with time zone example

```
<!-- the syntax is "YYYYMMDDHHMMSS.UUUU[+|-ZZZZ]" where digits can be
omitted
     the right side to express less precision. -->
<effectiveTime value="201107061227-08"/>
<!-- July 6, 2011, 12:27, 8 hours before UTC -->
```

3.2.1 RecordTarget

The recordTarget records the patient whose health information is described by the clinical document; each recordTarget must contain at least one patientRole element.

12. **SHALL** contain at least one [1..*] **recordTarget** (CONF:5266).
 - a. Such recordTargets **SHALL** contain exactly one [1..1] **patientRole** (CONF:5267).
 - i. This patientRole **SHALL** contain at least one [1..*] **id** (CONF:5268).
 - ii. This patientRole **SHALL** contain at least one [1..*] **addr** (CONF:5271).
 1. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10412).

- iii. This patientRole **SHALL** contain at least one [1..*] **telecom** (CONF:5280).
 - 1. Such telecoms **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#)
[2.16.840.1.113883.11.20.9.20 DYNAMIC](#) (CONF:5375).

3.2.1.1 Patient

- iv. This patientRole **SHALL** contain exactly one [1..1] **patient** (CONF:5283).
 - 1. This patient **SHALL** contain exactly one [1..1] **name** (CONF:5284).
 - a. The content of name **SHALL** be a conformant [US Realm Patient Name \(PTN.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.1) (CONF:10411).
 - 2. This patient **SHALL** contain exactly one [1..1] **administrativeGenderCode**, which **SHALL** be selected from ValueSet Administrative Gender (HL7 V3) [2.16.840.1.113883.1.11.1 DYNAMIC](#) (CONF:6394).
 - 3. This patient **SHALL** contain exactly one [1..1] **birthTime** (CONF:5298).
 - a. **SHALL** be precise to year (CONF:5299).
 - b. **SHOULD** be precise to day (CONF:5300).
 - 4. This patient **SHOULD** contain zero or one [0..1] **maritalStatusCode**, which **SHALL** be selected from ValueSet HL7 MaritalStatus [2.16.840.1.113883.1.11.12212 DYNAMIC](#) (CONF:5303).
 - 5. This patient **MAY** contain zero or one [0..1] **religiousAffiliationCode**, which **SHALL** be selected from ValueSet HL7 Religious Affiliation [2.16.840.1.113883.1.11.19185 DYNAMIC](#) (CONF:5317).
 - 6. This patient **MAY** contain zero or one [0..1] **raceCode**, which **SHALL** be selected from ValueSet Race [2.16.840.1.113883.1.11.14914 DYNAMIC](#) (CONF:5322).
 - 7. This patient **MAY** contain zero or more [0..*] **sdwg:raceCode**, where the @code SHALL be selected from ValueSet Race [2.16.840.1.113883.1.11.14914 DYNAMIC](#) (CONF:7263).
 - 8. This patient **MAY** contain zero or one [0..1] **ethnicGroupCode**, which **SHALL** be selected from ValueSet Ethnicity Value

2.16.840.1.114222.4.11.837 **DYNAMIC**
(CONF:5323).

3.2.1.2 Guardian

9. This patient **MAY** contain zero or more [0..*] **guardian** (CONF:5325).
 - a. The guardian, if present, **SHOULD** contain zero or one [0..1] **code**, which **SHALL** be selected from ValueSet Personal Relationship Role Type 2.16.840.1.113883.1.11.19563 **DYNAMIC** (CONF:5326).
 - b. The guardian, if present, **SHOULD** contain zero or more [0..*] **addr** (CONF:5359).
 - i. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10413).
 - c. The guardian, if present, **MAY** contain zero or more [0..*] **telecom** (CONF:5382).
 - i. The telecom, if present, **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#) 2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:7993).
 - d. The guardian, if present, **SHALL** contain exactly one [1..1] **guardianPerson** (CONF:5385).
 - i. This guardianPerson **SHALL** contain at least one [1..*] **name** (CONF:5386).
 1. The content of name **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.1.1) (CONF:10414).

3.2.1.3 Birthplace

10. This patient **MAY** contain zero or one [0..1] **birthplace** (CONF:5395).
 - a. The birthplace, if present, **SHALL** contain exactly one [1..1] **place** (CONF:5396).
 - i. This place **SHALL** contain exactly one [1..1] **addr** (CONF:5397).
 1. This addr **SHOULD** contain zero or one [0..1] **country**, where the @code **SHALL** be selected from ValueSet

CountryValueSet
2.16.840.1.113883.3.88.12.80.63
DYNAMIC (CONF:5404).

2. This addr **MAY** contain zero or one [0..1] **postalCode**, where the @code **SHALL** be selected from ValueSet
PostalCodeValueSet
2.16.840.1.113883.3.88.12.80.2
DYNAMIC (CONF:5403).
3. If country is US, this addr **SHALL** contain exactly one [1..1] state, which **SHALL** be selected from ValueSet
2.16.840.1.113883.3.88.12.80.1
StateValueSet **DYNAMIC** (CONF:5402).

3.2.1.4 LanguageCommunication

11. This patient **SHOULD** contain zero or more [0..*] **languageCommunication** (CONF:5406).
 - a. The languageCommunication, if present, **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet Language
2.16.840.1.113883.1.11.11526 **DYNAMIC** (CONF:5407).
 - b. The languageCommunication, if present, **MAY** contain zero or one [0..1] **modeCode**, which **SHALL** be selected from ValueSet HL7
LanguageAbilityMode
2.16.840.1.113883.1.11.12249 **DYNAMIC** (CONF:5409).
 - c. The languageCommunication, if present, **SHOULD** contain zero or one [0..1] **proficiencyLevelCode**, which **SHALL** be selected from ValueSet
LanguageAbilityProficiency
2.16.840.1.113883.1.11.12199 **DYNAMIC** (CONF:9965).
 - d. The languageCommunication, if present, **MAY** contain zero or one [0..1] **preferenceInd** (CONF:5414).

3.2.1.5 ProviderOrganization

- v. This patientRole **MAY** contain zero or one [0..1] **providerOrganization** (CONF:5416).
 1. The providerOrganization, if present, **SHALL** contain at least one [1..*] **id** (CONF:5417).

- a. Such ids **SHOULD** contain zero or one [0..1]
`@root="2.16.840.1.113883.4.6"` National Provider Identifier (CONF:16820).
- 2. The providerOrganization, if present, **SHALL** contain at least one [1..*] **name** (CONF:5419).
- 3. The providerOrganization, if present, **SHALL** contain at least one [1..*] **telecom** (CONF:5420).
 - a. Such telecoms **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#)
`2.16.840.1.113883.11.20.9.20 DYNAMIC` (CONF:7994).
- 4. The providerOrganization, if present, **SHALL** contain at least one [1..*] **addr** (CONF:5422).
 - a. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDED\)](#)
`(2.16.840.1.113883.10.20.22.5.2)` (CONF:10415).

3.2.1.6 RecordTarget Value Sets

Table 4: Telecom Use (US Realm Header) Value Set

Value Set: Telecom Use (US Realm Header) 2.16.840.1.113883.11.20.9.20 DYNAMIC		
Code System(s): AddressUse 2.16.840.1.113883.5.1119		
Code	Code System	Print Name
HP	AddressUse	primary home
WP	AddressUse	work place
MC	AddressUse	mobile contact
HV	AddressUse	vacation home

Table 5: Administrative Gender (HL7) Value Set

Value Set: Administrative Gender (HL7 V3) 2.16.840.1.113883.1.11.1 DYNAMIC		
Code System(s): AdministrativeGender 2.16.840.1.113883.5.1		
Code	Code System	Print Name
F	AdministrativeGender	Female
M	AdministrativeGender	Male
UN	AdministrativeGender	Undifferentiated

Table 6: Marital Status Value Set

Value Set: HL7 Marital Status 2.16.840.1.113883.1.11.12212 DYNAMIC		
Code System(s): MaritalStatus 2.16.840.1.113883.5.2		
Code	Code System	Print Name
A	MaritalStatus	Annulled
D	MaritalStatus	Divorced
I	MaritalStatus	Interlocutory
L	MaritalStatus	Legally Separated
M	MaritalStatus	Married
P	MaritalStatus	Polygamous
S	MaritalStatus	Never Married
T	MaritalStatus	Domestic partner
W	MaritalStatus	Widowed

Table 7: Religious Affiliation Value Set (excerpt)

Value Set: HL7 Religious Affiliation 2.16.840.1.113883.1.11.19185 DYNAMIC		
Code System(s): ReligiousAffiliation 2.16.840.1.113883.5.1076		
Description:	A value set of codes that reflect spiritual faith affiliation http://www.hl7.org/memonly/downloads/v3edition.cfm#V32008	
Code	Code System	Print Name
1026	ReligiousAffiliation	Judaism
1020	ReligiousAffiliation	Hinduism
1041	ReligiousAffiliation	Roman Catholic Church
...		

Table 8: Race Value Set (excerpt)

Value Set: Race 2.16.840.1.113883.1.11.14914 DYNAMIC		
Code System(s): Race and Ethnicity - CDC 2.16.840.1.113883.6.238		
Description:	<p>A Value Set of codes for Classifying data based upon race. Race is always reported at the discretion of the person for whom this attribute is reported, and reporting must be completed according to Federal guidelines for race reporting. Any code descending from the Race concept (1000-9) in that terminology may be used in the exchange http://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=1000-9</p>	
Code	Code System	Print Name
1002-5	Race and Ethnicity- CDC	American Indian or Alaska Native
2028-9	Race and Ethnicity- CDC	Asian
2054-5	Race and Ethnicity- CDC	Black or African American
2076-8	Race and Ethnicity- CDC	Native Hawaiian or Other Pacific Islander
2106-3	Race and Ethnicity- CDC	White
...		

Table 9: Ethnicity Value Set

Value Set: Ethnicity Value Set 2.16.840.1.114222.4.11.837 DYNAMIC		
Code System(s): Race and Ethnicity - CDC 2.16.840.1.113883.6.238		
Code		Print Name
2135-2		Hispanic or Latino
2186-5		Not Hispanic or Latino

Table 10: Personal Relationship Role Type Value Set (excerpt)

Value Set: Personal Relationship Role Type 2.16.840.1.113883.1.11.19563 DYNAMIC		
Code System(s): RoleCode 2.16.840.1.113883.5.111		
Description:	<p>A Personal Relationship records the role of a person in relation to another person. This value set is to be used when recording the relationships between different people who are not necessarily related by family ties, but also includes family relationships.</p>	
http://www.hl7.org/memonly/downloads/v3edition.cfm#V32008		
Code	Code System	Print Name
HUSB	RoleCode	husband
WIFE	RoleCode	wife
FRND	RoleCode	friend
SISINLAW	RoleCode	sister-in-law
...		

Table 11: State Value Set (excerpt)

Value Set: StateValueSet 2.16.840.1.113883.3.88.12.80.1 DYNAMIC		
Code System(s): FIPS 5-2 (State) 2.16.840.1.113883.6.92		
Description:	Codes for the Identification of the States, the District of Columbia and the Outlying Areas of the United States, and Associated Areas Publication # 5-2, May, 1987	
	http://www.itl.nist.gov/fipspubs/fip5-2.htm	
Code	Code System	Print Name
AL	FIPS 5-2 (State Alpha Codes)	Alabama
AK	FIPS 5-2 (State Alpha Codes)	Alaska
AZ	FIPS 5-2 (State Alpha Codes)	Arizona
AR	FIPS 5-2 (State Alpha Codes)	Arkansas
...		

Table 12: Postal Code Value Set (excerpt)

Value Set: PostalCodeValueSet 2.16.840.1.113883.3.88.12.80.2 DYNAMIC		
Code System(s): US Postal Codes 2.16.840.1.113883.6.231		
Description:	A value set of codes postal (ZIP) Code of an address in the United States.	
	http://zip4.usps.com/zip4/welcome.jsp	
Code	Code System	Print Name
19009	US Postal Codes	Bryn Athyn, PA
92869-1736	US Postal Codes	Orange, CA
32830-8413	US Postal Codes	Lake Buena Vista, FL
...		

Table 13: Country Value Set (excerpt)

Value Set: CountryValueSet 2.16.840.1.113883.3.88.12.80.63 DYNAMIC		
Code System(s): ISO 3166-1 Country Codes: 1.0.3166.1		
Description:	A value set of codes for the representation of names of countries, territories and areas of geographical interest. Note: This table provides the ISO 3166-1 code elements available in the alpha-2 code of ISO's country code standard http://www.iso.org/iso/country_codes/iso_3166_code_lists.htm	
Code	Code System	Print Name
AW	ISO 3166-1 Country Codes	Aruba
IL	ISO 3166-1 Country Codes	Israel
KZ	ISO 3166-1 Country Codes	Kazakhstan
US	ISO 3166-1 Country Codes	United States
...		

Table 14: Language Ability Value Set

Value Set: HL7 LanguageAbilityMode 2.16.840.1.113883.1.11.12249 DYNAMIC		
Code System(s): LanguageAbilityMode 2.16.840.1.113883.5.60		
Description:	A value representing the method of expression of the language.	
Code	Code System	Print Name
ESGN	LanguageAbilityMode	Expressed signed
ESP	LanguageAbilityMode	Expressed spoken
EWR	LanguageAbilityMode	Expressed written
RSGN	LanguageAbilityMode	Received signed
RSP	LanguageAbilityMode	Received spoken
RWR	LanguageAbilityMode	Received written

Table 15: Language Ability Proficiency Value Set

Value Set: LanguageAbilityProficiency 2.16.840.1.113883.1.11.12199 DYNAMIC		
Code System(s): LanguageAbilityProficiency 2.16.840.1.113883.5.61		
Description:	A value representing the level of proficiency in a language.	
Code	Code System	Print Name
E	LanguageAbilityProficiency	Excellent
F	LanguageAbilityProficiency	Fair
G	LanguageAbilityProficiency	Good
P	LanguageAbilityProficiency	Poor

3.2.1.7 RecordTarget Example

Figure 19: recordTarget example

```
<recordTarget>
  <patientRole>
    <id extension="12345" root="2.16.840.1.113883.19"/>
    <!-- Fake ID using HL7 example OID. -->
    <id extension="111-00-1234" root="2.16.840.1.113883.4.1"/>
    <!-- Fake Social Security Number using the actual SSN OID. -->
    <addr use="HP">
      <!-- HP is "primary home" from codeSystem 2.16.840.1.113883.5.1119 -->
    >
      <streetAddressLine>17 Daws Rd.</streetAddressLine>
      <city>Blue Bell</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
      <!-- US is "United States" from ISO 3166-1 Country Codes:
1.0.3166.1 -->
    </addr>
    <telecom value="tel:(781)555-1212" use="HP"/>
    <!-- HP is "primary home" from AddressUse 2.16.840.1.113883.5.1119 -->
  >
```

```

<patient>
  <name use="L">
    <!-- L is "Legal" from EntityNameUse 2.16.840.1.113883.5.45 -->
    <prefix>Mr.</prefix>
    <given>Adam</given>
    <given qualifier="CL">Frankie</given>
    <!-- CL is "Call me" from EntityNamePartQualifier
        2.16.840.1.113883.5.43 -->
    <family>Everyman</family>
  </name>
  <administrativeGenderCode code="M"
    codeSystem="2.16.840.1.113883.5.1" displayName="Male"/>
  <birthTime value="19541125"/>
  <maritalStatusCode code="M" displayName="Married"
    codeSystem="2.16.840.1.113883.5.2"
    codeSystemName="MaritalStatusCode"/>
  <religiousAffiliationCode code="1013"
    displayName="Christian (non-Catholic, non-specific)"
    codeSystemName="Religious Affiliation"
    codeSystem="2.16.840.1.113883.5.1076"/>
  <raceCode code="2106-3" displayName="White"
    codeSystem="2.16.840.1.113883.6.238"
    codeSystemName="Race & Ethnicity - CDC"/>
  <ethnicGroupCode code="2186-5"
    displayName="Not Hispanic or Latino"
    codeSystem="2.16.840.1.113883.6.238"
    codeSystemName="Race & Ethnicity - CDC"/>
  <guardian>
    <code code="GRFTH" displayName="Grandfather"
      codeSystem="2.16.840.1.113883.5.111"
      codeSystemName="RoleCode"/>
    <addr use="HP">
      <streetAddressLine>17 Daws Rd.</streetAddressLine>
      <city>Blue Bell</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom value="tel:(781) 555-1212" use="HP"/>
    <guardianPerson>
      <name>
        <given>Ralph</given>
        <family>Relative</family>
      </name>
    </guardianPerson>
  </guardian>
  <birthplace>
    <place>
      <addr>
        <state>MA</state>
        <postalCode>02368</postalCode>
        <country>US</country>
      </addr>
    </place>
  </birthplace>

```

```

<languageCommunication>
  <languageCode code="fr-CN"/>
  <modeCode code="RWR" displayName="Receive Written"
    codeSystem="2.16.840.1.113883.5.60"
    codeSystemName="LanguageAbilityMode"/>
  <preferenceInd value="true"/>
</languageCommunication>
</patient>
<providerOrganization>
  <id root="2.16.840.1.113883.19"/>
  <name>Good Health Clinic</name>
  <telecom use="WP" value="tel:(781) 555-1212"/>
  <addr>
    <streetAddressLine>21 North Ave</streetAddressLine>
    <city>Burlington</city>
    <state>MA</state>
    <postalCode>02368</postalCode>
    <country>US</country>
  </addr>
</providerOrganization>
</patientRole>
</recordTarget>

```

3.2.2 Author

The author element represents the creator of the clinical document. The author may be a device, or a person.

13. **SHALL** contain at least one [1..*] **author** (CONF:5444).

- a. Such authors **SHALL** contain exactly one [1..1] **time** (CONF:5445).
 - i. The content **SHALL** be a conformant [US Realm Date and Time \(DTM.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.4) (CONF:16866).
- b. Such authors **SHALL** contain exactly one [1..1] **assignedAuthor** (CONF:5448).
 - i. This assignedAuthor **SHALL** contain exactly one [1..1] **id** (CONF:5449) such that it
 - 1. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.4.6"** National Provider Identifier (CONF:16786).
 - ii. This assignedAuthor **SHOULD** contain zero or one [0..1] **code** (CONF:16787).
 - 1. The code, if present, **SHOULD** contain exactly one [1..1] **@code**, which **SHOULD** be selected from ValueSet Healthcare Provider Taxonomy (NUCC - HIPAA) 2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:16788).
 - iii. This assignedAuthor **SHALL** contain at least one [1..*] **addr** (CONF:5452).

1. The content **SHALL** be a conformant [US Realm Address \(AD.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:16871).
- iv. This assignedAuthor **SHALL** contain at least one [1..*] **telecom** (CONF:5428).
 1. Such telecoms **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#)
[2.16.840.1.113883.11.20.9.20 DYNAMIC](#) (CONF:7995).
- v. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedPerson** (CONF:5430).
 1. The assignedPerson, if present, **SHALL** contain at least one [1..*] **name** (CONF:16789).
 - a. The content **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.1.1) (CONF:16872).
- vi. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedAuthoringDevice** (CONF:16783).
 1. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **manufacturer modelName** (CONF:16784).
 2. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **softwareName** (CONF:16785).
- vii. There **SHALL** be exactly one assignedAuthor/assignedPerson or exactly one assignedAuthor/assignedAuthoringDevice (CONF:16790).

Figure 20: Person author example

```
<author>
  <time value="20050329224411+0500"/>
  <assignedAuthor>
    <id extension="KP00017" root="2.16.840.1.113883.19.5"/>
    <addr>
      <streetAddressLine>21 North Ave.</streetAddressLine>
      <city>Burlington</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom use="WP" value="tel: (555) 555-1003"/>
    <assignedPerson>
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedAuthor>
</author>
```

Figure 21: Device author example

```
<author>
  <time value="20050329224411+0500"/>
  <assignedAuthor>
    <id extension="KP00017dev" root="2.16.840.1.113883.19.5"/>
    <addr>
      <streetAddressLine>21 North Ave.</streetAddressLine>
      <city>Burlington</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom use="WP" value="tel: (555) 555-1003"/>
    <assignedAuthoringDevice>
      <manufacturerModelName>Good Health Medical
        Device</manufacturerModelName >
      <softwareName>Good Health Report Generator</softwareName >
    </ assignedAuthoringDevice >
  </assignedAuthor>
</author>
```

3.2.3 DataEnterer

The `dataEnterer` element represents the person who transferred the content, written or dictated by someone else, into the clinical document. The guiding rule of thumb is that an `author` provides the content found within the header or body of the document, subject to their own interpretation, and the `dataEnterer` adds that information to the electronic system. In other words, a `dataEnterer`

transfers information from one source to another (e.g., transcription from paper form to electronic system).

14. **MAY** contain zero or one [0..1] **dataEnterer** (CONF:5441).
 - a. The dataEnterer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:5442).
 - i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:5443).
 1. Such ids **SHOULD** contain zero or one [0..1] **@root="2.16.840.1.113883.4.6"** National Provider Identifier (CONF:16821).
 - ii. This assignedEntity **SHALL** contain at least one [1..*] **addr** (CONF:5460).
 1. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10417).
 - iii. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:5466).
 1. Such telecoms **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#) [2.16.840.1.113883.11.20.9.20 DYNAMIC](#) (CONF:7996).
 - iv. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:5469).
 1. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5470).
 - a. The content of name **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDED\)](#) (2.16.840.1.113883.10.20.22.5.1.1) (CONF:10418).
 - v. This assignedEntity **MAY** contain zero or one [0..1] code which **SHOULD** be selected from coding system NUCC Health Care Provider Taxonomy 2.16.840.1.113883.6.101 (CONF:9944).

Figure 22: dataEnterer example

```
<dataEnterer>
  <assignedEntity>
    <id root="2.16.840.1.113883.19.5" extension="43252"/>
    <addr>
      <streetAddressLine>21 North Ave.</streetAddressLine>
      <city>Burlington</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom use="WP" value="tel:(555)555-1003"/>
    <assignedPerson>
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</dataEnterer>
```

3.2.4 Informant

The informant element describes the source of the information in a medical document.

Assigned health care providers may be a source of information when a document is created. (e.g., a nurse's aide who provides information about a recent significant health care event that occurred within an acute care facility.) In these cases, the assignedEntity element is used.

When the informant is a personal relation, that informant is represented in the relatedEntity element. The code element of the relatedEntity describes the relationship between the informant and the patient. The relationship between the informant and the patient needs to be described to help the receiver of the clinical document understand the information in the document.

15. **MAY** contain zero or more [0..*] **informant** (CONF:8001).

a. **SHALL** contain exactly one [1..1] assignedEntity OR exactly one [1..1] relatedEntity (CONF:8002).

i. **SHOULD** contain at least one [1..*] **addr** (CONF:8220).

1. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDDED\)](#)
(2.16.840.1.113883.10.20.22.5.2) (CONF:10419).

ii. **SHALL** contain exactly one [1..1] assignedPerson OR exactly one [1..1] relatedPerson (CONF:8221).

1. **SHALL** contain at least one [1..*] **name** (CONF:8222).

a. The content of name **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDDED\)](#)
(2.16.840.1.113883.10.20.22.5.1.1)
(CONF:10420).

- iii. ii. This assignedEntity **MAY** contain zero or one [0..1] code which **SHOULD** be selected from coding system NUCC Health Care Provider Taxonomy 2.16.840.1.113883.6.101 (CONF:9947).
- iv. **SHOULD** contain zero or more [0..*] **id** (CONF:9945).
 - 1. If assignedEntity/id is a provider then this id, **SHOULD** include zero or one [0..1] id where id/@root ="2.16.840.1.113883.4.6" National Provider Identifier (CONF:9946).

Figure 23: Informant with assignedEntity example

```
<informant>
  <assignedEntity>
    <id extension="KP00017" root="2.16.840.1.113883.19.5"/>
    <addr>
      <streetAddressLine>21 North Ave.</streetAddressLine>
      <city>Burlington</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom value="tel:(555) 555-1003"/>
    <assignedPerson>
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</informant>
```

3.2.5 Custodian

The custodian element represents the organization that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document. Every CDA document has exactly one custodian. The custodian participation satisfies the CDA definition of Stewardship. Because CDA is an exchange standard and may not represent the original form of the authenticated document (e.g., CDA could include scanned copy of original), the custodian represents the steward of the original source document. The custodian may be the document originator, a health information exchange, or other responsible party.

16. **SHALL** contain exactly one [1..1] **custodian** (CONF:5519).
 - a. This custodian **SHALL** contain exactly one [1..1] **assignedCustodian** (CONF:5520).
 - i. This assignedCustodian **SHALL** contain exactly one [1..1] **representedCustodianOrganization** (CONF:5521).
 1. This representedCustodianOrganization **SHALL** contain at least one [1..*] **id** (CONF:5522).

- a. Such ids **SHOULD** contain zero or one [0..1] `@root="2.16.840.1.113883.4.6"` National Provider Identifier (CONF:16822).
- 2. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **name** (CONF:5524).
- 3. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **telecom** (CONF:5525).
 - a. This telecom **SHOULD** contain exactly one [1..1] `@use`, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#)
[2.16.840.1.113883.11.20.9.20 DYNAMIC](#) (CONF:7998).
- 4. This representedCustodianOrganization **SHALL** contain at least one [1..*] **addr** (CONF:5559).
 - a. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10421).

Figure 24: Custodian example

```
<custodian>
  <assignedCustodian>
    <representedCustodianOrganization>
      <id root="2.16.840.1.113883.19.5"/>
      <name>Good Health Clinic</name>
      <telecom value="tel:(555)555-1212" use="WP"/>
      <addr use="WP">
        <streetAddressLine>17 Daws Rd.</streetAddressLine>
        <city>Blue Bell</city>
        <state>MA</state>
        <postalCode>02368</postalCode>
        <country>US</country>
      </addr>
    </representedCustodianOrganization>
  </assignedCustodian>
</custodian>
```

3.2.6 InformationRecipient

The informationRecipient element records the intended recipient of the information at the time the document is created. For example, in cases where the intended recipient of the document is the patient's health chart, set the receivedOrganization to be the scoping organization for that chart.

17. **MAY** contain zero or more [0..*] **informationRecipient** (CONF:5565).
 - a. The informationRecipient, if present, **SHALL** contain exactly one [1..1] **intendedRecipient** (CONF:5566).
 - i. This intendedRecipient **MAY** contain zero or one [0..1] **informationRecipient** (CONF:5567).

1. The informationRecipient, if present, **SHALL** contain at least one [1..*] **name** (CONF:5568).
 - a. The content of name **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDDED\)](#)
(2.16.840.1.113883.10.20.22.5.1.1)
(CONF:10427).
- ii. This intendedRecipient **MAY** contain zero or one [0..1] **receivedOrganization** (CONF:5577).
 1. The receivedOrganization, if present, **SHALL** contain exactly one [1..1] **name** (CONF:5578).

Figure 25: informationRecipient example

```
<informationRecipient>
  <intendedRecipient>
    <informationRecipient>
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </informationRecipient>
    <receivedOrganization>
      <name>Good Health Clinic</name>
    </receivedOrganization>
  </intendedRecipient>
</informationRecipient>
```

3.2.7 LegalAuthenticator

The **legalAuthenticator** identifies the single person legally responsible for the document and must be present if the document has been legally authenticated. (Note that per the following section, there may also be one or more document authenticators.)

Based on local practice, clinical documents may be released before legal authentication. This implies that a clinical document that does not contain this element has not been legally authenticated.

The act of legal authentication requires a certain privilege be granted to the legal authenticator depending upon local policy. All clinical documents have the potential for legal authentication, given the appropriate credentials.

Local policies **MAY** choose to delegate the function of legal authentication to a device or system that generates the clinical document. In these cases, the legal authenticator is a person accepting responsibility for the document, not the generating device or system.

Note that the legal authenticator, if present, must be a person.

18. **SHOULD** contain zero or one [0..1] **legalAuthenticator** (CONF:5579).
 - a. The legalAuthenticator, if present, **SHALL** contain exactly one [1..1] **time** (CONF:5580).

- i. The content **SHALL** be a conformant [US Realm Date and Time \(DTM.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.4) (CONF:16873).
- b. The legalAuthenticator, if present, **SHALL** contain exactly one [1..1] **signatureCode** (CONF:5583).
 - i. This signatureCode **SHALL** contain exactly one [1..1] **@code="S"** (CodeSystem: Participationsignature 2.16.840.1.113883.5.89) (CONF:5584).
- c. The legalAuthenticator, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:5585).
 - i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:5586).
 - 1. Such ids **MAY** contain zero or one [0..1] **@root="2.16.840.1.113883.4.6"** National Provider Identifier (CONF:16823).
 - ii. This assignedEntity **MAY** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet Healthcare Provider Taxonomy (NUCC - HIPAA) 2.16.840.1.114222.4.11.1066 (CONF:17000).
 - iii. This assignedEntity **SHALL** contain at least one [1..*] **addr** (CONF:5589).
 - 1. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10429).
 - iv. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:5595).
 - 1. Such telecoms **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#) [2.16.840.1.113883.11.20.9.20 DYNAMIC](#) (CONF:7999).
 - v. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:5597).
 - 1. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5598).
 - a. The content of name **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.1.1) (CONF:10430).

Figure 26: legalAuthenticator example

```
<legalAuthenticator>
  <time value="20050329224411+0500"/>
  <signatureCode code="S"/>
  <assignedEntity>
    <id extension="KP00017" root="2.16.840.1.113883.19"/>
    <addr>
      <streetAddressLine>21 North Ave.</streetAddressLine>
      <city>Burlington</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom use="WP" value="tel:(555) 555-1003"/>
    <assignedPerson>
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</legalAuthenticator>
```

3.2.8 Authenticator

The authenticator identifies a participant or participants who attested to the accuracy of the information in the document.

19. **MAY** contain zero or more [0..*] **authenticator** (CONF:5607).

- a. The authenticator, if present, **SHALL** contain exactly one [1..1] **time** (CONF:5608).
 - i. The content **SHALL** be a conformant [US Realm Date and Time \(DTM.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.4) (CONF:16874).
- b. The authenticator, if present, **SHALL** contain exactly one [1..1] **signatureCode** (CONF:5610).
 - i. This signatureCode **SHALL** contain exactly one [1..1] **@code="S"** (CodeSystem: Participationsignature 2.16.840.1.113883.5.89) (CONF:5611).
- c. The authenticator, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:5612).
 - i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:5613).
 - 1. Such ids **SHOULD** contain zero or one [0..1] **@root="2.16.840.1.113883.4.6"** National Provider Identifier (CONF:16824).
 - ii. This assignedEntity **MAY** contain zero or one [0..1] **code** (CONF:16825).
 - 1. The code, if present, **MAY** contain zero or one [0..1] **@code**, which **SHOULD** be selected from ValueSet

Healthcare Provider Taxonomy (NUCC - HIPAA)
2.16.840.1.114222.4.11.1066 (CONF:16826).

- iii. This assignedEntity **SHALL** contain at least one [1..*] **addr** (CONF:5616).
 - 1. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10425).
- iv. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:5622).
 - 1. Such telecoms **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [Telecom Use \(US Realm Header\)](#) [2.16.840.1.113883.11.20.9.20 DYNAMIC](#) (CONF:8000).
- v. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:5624).
 - 1. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5625).
 - a. The content of name **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.1.1) (CONF:10424).

Figure 27: Authenticator example

```
<authenticator>
  <time value="20050329224411+0500"/>
  <signatureCode code="S"/>
  <assignedEntity>
    <id extension="KP00017" root="2.16.840.1.113883.19"/>
    <addr>
      <streetAddressLine>21 North Ave.</streetAddressLine>
      <city>Burlington</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom use="WP" value="tel: (555) 555-1003"/>
    <assignedPerson>
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</authenticator>
```

3.2.9 Participant (Support)

The participant element identifies other supporting participants, including parents, relatives, caregivers, insurance policyholders, guarantors, and other participants related in some way to the patient.

A supporting person or organization is an individual or an organization with a relationship to the patient. A supporting person who is playing multiple roles would be recorded in multiple participants (e.g., emergency contact and next-of-kin)

20. **MAY** contain zero or more [0..*] **participant** (CONF:10003).

- a. The participant, if present, **MAY** contain zero or one [0..1] **time** (CONF:10004).
- b. Such participants, if present, **SHALL** have an associatedPerson or scopingOrganization element under participant/associatedEntity (CONF:10006).
- c. Unless otherwise specified by the document specific header constraints, when participant/@typeCode is IND, associatedEntity/@classCode **SHALL** be selected from ValueSet 2.16.840.1.113883.11.20.9.33 INDRoleclassCodes **STATIC** 2011-09-30 (CONF:10007).

Table 16: IND Role classCode Value Set

Value Set: INDRoleclassCodes 2.16.840.1.113883.11.20.9.33 STATIC 2011-09-30		
Code System(s):		RoleClass 2.16.840.1.113883.5.110
Code	Code System	Print Name
PRS	RoleClass	personal relationship
NOK	RoleClass	next of kin
CAREGIVER	RoleClass	caregiver
AGNT	RoleClass	agent
GUAR	RoleClass	guarantor
ECON	RoleClass	emergency contact

Figure 28: Participant example for a supporting person

```
<participant typeCode='IND'>
  <time xsi:type="IVL_TS">
    <low value="19590101"/>
    <high value="20111025"/>
  </time>
  <associatedEntity classCode='NOK'>
    <code code='MTH' codeSystem='2.16.840.1.113883.5.111' />
    <addr>
      <streetAddressLine>17 Daws Rd.</streetAddressLine>
      <city>Blue Bell</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom value='tel:(555) 555-2006' use='WP' />
    <associatedPerson>
      <name>
        <prefix>Mrs.</prefix>
        <given>Martha</given>
        <family>Mum</family>
      </name>
    </associatedPerson>
  </associatedEntity>
</participant>
```

3.2.10 InFulfillmentOf

The **inFulfillmentOf** element represents orders that are fulfilled by this document.

21. **MAY** contain zero or more [0..*] **inFulfillmentOf** (CONF:9952).
 - a. The **inFulfillmentOf**, if present, **SHALL** contain exactly one [1..1] **order** (CONF:9953).
 - i. This **order** **SHALL** contain at least one [1..*] **id** (CONF:9954).

3.2.11 DocumentationOf/serviceEvent

A **serviceEvent** represents the main act, such as a colonoscopy or a cardiac stress study, being documented. In a continuity of care document, CCD, the **serviceEvent** is a provision of healthcare over a period of time. In a provision of healthcare **serviceEvent**, the care providers, PCP or other longitudinal providers, are recorded within the **serviceEvent**. If the document is about a single encounter, the providers associated can be recorded in the **componentOf/encompassingEncounter**.

22. **MAY** contain zero or more [0..*] **documentationOf** (CONF:14835).
 - a. The **documentationOf**, if present, **SHALL** contain exactly one [1..1] **serviceEvent** (CONF:14836).
 - i. This **serviceEvent** **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:14837).

1. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:14838).

ii. This serviceEvent **SHOULD** contain zero or more [0..*] **performer** (CONF:14839).

1. The performer, if present, **SHALL** contain exactly one [1..1] @**typeCode**="PRF" Participation physical performer (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:14840).

a. The performer participant represents clinicians who actually and principally carry out the serviceEvent. In a transfer of care this represents the healthcare providers involved in the current or pertinent historical care of the patient. Preferably, the patient's key healthcare care team members would be listed, particularly their primary physician and any active consulting physicians, therapists, and counselors (CONF:16753).

2. The performer, if present, **MAY** contain zero or one [0..1] **functionCode** (CONF:16818).

a. The functionCode, if present, **SHOULD** contain zero or one [0..1] @**codeSystem**, which **SHOULD** be selected from CodeSystem participationFunction (2.16.840.1.113883.5.88) (CONF:16819).

3. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:14841).

a. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:14846).

i. Such ids **SHOULD** contain zero or one [0..1] @**root**="2.16.840.1.113883.4.6" National Provider Identifier (CONF:14847).

b. This assignedEntity **SHOULD** contain zero or one [0..1] **code** (CONF:14842).

i. The code, if present, **SHALL** contain exactly one [1..1] @**code**, which **SHOULD** be selected from CodeSystem NUCCProviderTaxonomy (2.16.840.1.113883.6.101) (CONF:14843).

Figure 29: DocumentationOf example

```
<documentationOf>
  <serviceEvent classCode="ACT">
    <id root="1.2.840.113619.2.62.994044785528.114289542805"/>
    <id extension="123453"
root="1.2.840.113619.2.62.994044785528.26"/>
    <code code="93041"
      displayName="Rhythm ECG, one to three leads; tracing
only without interpretation and report"
      codeSystem="2.16.840.1.113883.6.12"
      codeSystemName="CPT4"/>
    <effectiveTime value="20080813222400"/>
    <performer typeCode="PRF">
      <templateId root="2.16.840.1.113883.10.20.6.2.1"/>
      <assignedEntity>
        <id extension="121008" root="2.16.840.1.113883.19.5"/>
        <code code="208D00000X "
codeSystem="2.16.840.1.113883.6.101"
          codeSystemName="NUCC"
          displayName="General Practice"/>
        <addr nullFlavor="NI"/>
        <telecom nullFlavor="NI"/>
        <assignedPerson>
          <name>
            <given>Matthew</given>
            <family>Care</family>
            <suffix>MD</suffix>
          </name>
        </assignedPerson>
      </assignedEntity>
    </performer>
  </serviceEvent>
</documentationOf>
```

3.2.12 Authorization/consent

The header can record information about the patient's consent.

The type of consent (e.g., a consent to perform the related serviceEvent) is conveyed in consent/code. Consents in the header have been finalized (consent/statusCode must equal Completed) and should be on file. This specification does not address how Privacy Consent' is represented, but does not preclude the inclusion of 'Privacy Consent'.

23. **MAY** contain zero or more [0..*] **authorization** (CONF:16792) such that it

- a. **SHALL** contain exactly one [1..1] **consent** (CONF:16793).
 - i. This consent **MAY** contain zero or more [0..*] **id** (CONF:16794).
 - ii. This consent **MAY** contain zero or one [0..1] **code** (CONF:16795).
 1. The type of consent (e.g., a consent to perform the related serviceEvent) is conveyed in consent/code (CONF:16796).

iii. This consent **SHALL** contain exactly one [1..1] **statusCode** (CONF:16797).

1. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:16798).

Figure 30: Procedure note consent example

```
<authorization typeCode="AUTH">
  <consent classCode="CONS" moodCode="EVN">
    <id root="629deb70-5306-11df-9879-0800200c9a66" />
    <code codeSystem=" 2.16.840.1.113883.6.1" codeSystemName="LOINC"
          code="64293-4" displayName="Procedure consent"/>
    <statusCode code="completed"/>
  </consent>
</authorization>
```

3.2.13 ComponentOf

The **componentOf** element contains the encompassing encounter for this document. The encompassing encounter represents the setting of the clinical encounter during which the document act(s) or ServiceEvent occurred.

In order to represent providers associated with a specific encounter, they are recorded within the **encompassingEncounter** as participants.

In a CCD the **encompassingEncounter** may be used when documenting a specific encounter and its participants. All relevant encounters in a CCD may be listed in the encounters section.

24. **MAY** contain zero or one [0..1] **componentOf** (CONF:9955).

- a. The **componentOf**, if present, **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:9956).
 - i. This **encompassingEncounter** **SHALL** contain at least one [1..*] **id** (CONF:9959).
 - ii. This **encompassingEncounter** **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:9958).

3.3 US Realm Address (AD.US.FIELDED)

[addr: 2.16.840.1.113883.10.20.22.5.2 (open)]

Reusable "address" template, designed for use in US Realm CDA Header.

1. **SHOULD** contain exactly one [1..1] **@use**, which **SHALL** be selected from ValueSet [PostalAddressUse 2.16.840.1.113883.1.11.10637 STATIC](#) 2005-05-01 (CONF:7290).
2. **SHOULD** contain zero or one [0..1] **country**, where the **@code** **SHALL** be selected from ValueSet [CountryValueSet 2.16.840.1.113883.3.88.12.80.63 DYNAMIC](#) (CONF:7295).

3. **SHOULD** contain zero or one [0..1] **state** (ValueSet: [StateValueSet 2.16.840.1.113883.3.88.12.80.1 DYNAMIC](#)) (CONF:7293).
 - a. State is required if the country is US. If country is not specified, its assumed to be US. If country is something other than US, the state **MAY** be present but **MAY** be bound to different vocabularies (CONF:10024).
4. **SHALL** contain exactly one [1..1] **city** (CONF:7292).
5. **SHOULD** contain zero or one [0..1] **postalCode** (ValueSet: [PostalCodeValueSet 2.16.840.1.113883.3.88.12.80.2 DYNAMIC](#)) (CONF:7294).
 - a. PostalCode is required if the country is US. If country is not specified, its assumed to be US. If country is something other than US, the postalCode **MAY** be present but **MAY** be bound to different vocabularies (CONF:10025).
6. **SHALL** contain at least one and not more than 4 **streetAddressLine** (CONF:7291).
7. **SHALL NOT** have mixed content except for white space¹³ (CONF:7296).

Table 17: PostalAddressUse Value Set

Value Set: PostalAddressUse 2.16.840.1.113883.1.11.10637 STATIC 2005-05-01		
Code System(s): AddressUse 2.16.840.1.113883.5.1119		
Code	Code System	Print Name
BAD	AddressUse	bad address
DIR	AddressUse	direct
H	AddressUse	home address
HP	AddressUse	primary home
HV	AddressUse	vacation home
PHYS	AddressUse	physical visit address
PST	AddressUse	postal address
PUB	AddressUse	public
TMP	AddressUse	temporary
WP	AddressUse	work place

3.4 US Realm Date and Time (DT.US.FIELDED)

[effectiveTime: 2.16.840.1.113883.10.20.22.5.3 (open)]

The US Realm Clinical Document Date and Time datatype flavor records date and time information. If no time zone offset is provided, you can make no assumption about time, unless you have made a local exchange agreement.

This data type uses the same rules as [US Realm Date and Time \(DT.US.FIELDED\)](#), but is used with the effectiveTime element.

¹³ For information on mixed content see Extensible Markup Language (XML) (<http://www.w3.org/TR/2008/REC-xml-20081126/#sec-mixed-content>).

1. **SHALL** be precise to the day (CONF:10078).
2. **SHOULD** be precise to the minute (CONF:10079).
3. **MAY** be precise to the second (CONF:10080).
4. If more precise than day, **SHOULD** include time-zone offset (CONF:10081).

3.5 US Realm Date and Time (DTM.US.FIELDED)

[time: 2.16.840.1.113883.10.20.22.5.4 (open)]

The US Realm Clinical Document Date and Time datatype flavor records date and time information. If no time zone offset is provided, you can make no assumption about time, unless you have made a local exchange agreement.

This data type uses the same rules as [**US Realm Date and Time \(DT.US.FIELDED\)**](#), but is used with the time element.

1. **SHALL** be precise to the day (CONF:10127).
2. **SHOULD** be precise to the minute (CONF:10128).
3. **MAY** be precise to the second (CONF:10129).
4. If more precise than day, **SHOULD** include time-zone offset (CONF:10130).

3.6 US Realm Patient Name (PTN.US.FIELDED)

[PN: templateId 2.16.840.1.113883.10.20.22.5.1 (open)]

The US Realm Patient Name datatype flavor is a set of reusable constraints that can be used for the patient or any other person. It requires a first (given) and last (family) name. If a patient or person has only one name part (e.g., patient with first name only) place the name part in the field required by the organization. Use the appropriate nullFlavor, "Not Applicable" (NA), in the other field.

For information on mixed content see the Extensible Markup Language reference (<http://www.w3c.org/TR/2008/REC-xml-20081126/>).

1. **MAY** contain zero or one [0..1] @use, which **SHALL** be selected from ValueSet EntityNameUse 2.16.840.1.113883.1.11.15913 **STATIC** 2005-05-01 (CONF:7154).
2. **SHALL** contain exactly one [1..1] **family** (CONF:7159).
 - a. This family **MAY** contain zero or one [0..1] @qualifier, which **SHALL** be selected from ValueSet EntityPersonNamePartQualifier 2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30 (CONF:7160).
3. **SHALL** contain at least one [1..*] **given** (CONF:7157).
 - a. Such givens **MAY** contain zero or one [0..1] @qualifier, which **SHALL** be selected from ValueSet EntityPersonNamePartQualifier 2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30 (CONF:7158).
 - b. The second occurrence of given (given[2]) if provided, **SHALL** include middle name or middle initial (CONF:7163).
4. **MAY** contain zero or more [0..*] **prefix** (CONF:7155).
 - a. The prefix, if present, **MAY** contain zero or one [0..1] @qualifier, which **SHALL** be selected from ValueSet

EntityPersonNamePartQualifier
2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30 (CONF:7156).

5. **MAY** contain zero or one [0..1] **suffix** (CONF:7161).
 - a. The suffix, if present, **MAY** contain zero or one [0..1] @qualifier, which **SHALL** be selected from ValueSet EntityPersonNamePartQualifier
2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30 (CONF:7162).
6. **SHALL NOT** have mixed content except for white space (CONF:7278).

Table 18: EntityNameUse Value Set

Value Set: EntityNameUse 2.16.840.1.113883.1.11.15913 STATIC 2005-05-01		
Code System(s): EntityNameUse 2.16.840.1.113883.5.45		
Code	Code System	Print Name
A	EntityNameUse	Artist/Stage
ABC	EntityNameUse	Alphabetic
ASGN	EntityNameUse	Assigned
C	EntityNameUse	License
I	EntityNameUse	Indigenous/Tribal
IDE	EntityNameUse	Ideographic
L	EntityNameUse	Legal
P	EntityNameUse	Pseudonym
PHON	EntityNameUse	Phonetic
R	EntityNameUse	Religious
SNDX	EntityNameUse	Soundex
SRCH	EntityNameUse	Search
SYL	EntityNameUse	Syllabic

Table 19: EntityPersonNamePartQualifier Value Set

Value Set: EntityPersonNamePartQualifier 2.16.840.1.113883.11.20.9.26 STATIC 2011-09-30		
Code System(s): EntityNamePartQualifier 2.16.840.1.113883.5.43		
Code	Code System	Print Name
AC	EntityNamePartQualifier	academic
AD	EntityNamePartQualifier	adopted
BR	EntityNamePartQualifier	birth
CL	EntityNamePartQualifier	callme
IN	EntityNamePartQualifier	initial
NB	EntityNamePartQualifier	nobility
PR	EntityNamePartQualifier	professional
SP	EntityNamePartQualifier	spouse
TITLE	EntityNamePartQualifier	title
VV	EntityNamePartQualifier	voorvoegsel

3.7 US Realm Person Name (PN.US.FIELDED)

[name: 2.16.840.1.113883.10.20.22.5.1.1(open)]

The US Realm Clinical Document Person Name datatype flavor is a set of reusable constraints that can be used for Persons.

1. **SHALL** contain exactly one [1..1] **name** (CONF:9368).
 - a. The content of name **SHALL** be either a conformant [Patient Name \(PTN.US.FIELDED\)](#), or a string (CONF:9371).
 - b. The string **SHALL NOT** contain name parts (CONF:9372).

3.8 Rendering Header Information for Human Presentation

Metadata carried in the header may already be available for rendering from electronic medical records (EMRs) or other sources external to the document; therefore, there is no strict requirement to render directly from the document. An example of this would be a doctor using an EMR that already contains the patient's name, date of birth, current address, and phone number. When a CDA document is rendered within that EMR, those pieces of information may not need to be displayed since they are already known and displayed within the EMR's user interface.

Good practice would recommend that the following be present whenever the document is viewed:

- Document title and document dates
- Service and encounter types, and date ranges as appropriate
- Names of all persons along with their roles, participations, participation date ranges, identifiers, address, and telecommunications information

- Names of selected organizations along with their roles, participations, participation date ranges, identifiers, address, and telecommunications information
- Date of birth for recordTarget(s)

In Operative and Procedure Notes, the following information is typically displayed in the electronic health record (EHR) and/or rendered directly in the document:

- The performers of the surgery or procedure, including any assistants
- The surgery or procedure performed (`serviceEvent`)
- The date of the surgery or procedure

4 DOCUMENT-LEVEL TEMPLATES

Document-level templates describe the purpose and rules for constructing a conforming CDA document. Document templates include constraints on the CDA header and refer to section-level templates. The [Document Types and Required/Optional Sections](#) table lists the sections used by each document type.

Each document-level template contains the following information:

- Scope and intended use of the document type
- Description and explanatory narrative.
- Template metadata (e.g., templateId, etc.)
- Header constraints: this includes a reference to the US Realm Clinical Document Header template and additional constraints specific to each document type
- Required and optional section-level templates

Table 20: Document Types and Required/Optional Sections with Structured Body

Document Type Preferred LOINC templateId	Required Sections	Optional Sections
<u>CCD</u> (Summarization of Episode Note) 34133-9 (required) ¹⁴ 2.16.840.1.113883.10.20.22.1.2	<u>Allergies</u> <u>Medications</u> <u>Problem List</u> <u>Procedures</u> ¹⁵ (List of Surgeries) (History of Procedures) <u>Results</u>	<u>Advance Directives</u> <u>Encounters</u> <u>Family History</u> <u>Functional Status</u> <u>Immunizations</u> <u>Medical Equipment</u> <u>Payers</u> <u>Plan of Care</u> <u>Social History</u> <u>Vital Signs</u>
<u>Consultation Note</u> 11488-4 2.16.840.1.113883.10.20.22.1.4	<u>Assessment and Plan/Assessment/Plan of Care*</u> <u>History of Present Illness</u> <u>Physical Exam</u> <u>Reason for Referral/Reason for Visit</u> ¹⁶ **	<u>Allergies</u> <u>Chief Complaint</u> ** <u>Chief Complaint and Reason for Visit</u> ** <u>Family History</u> <u>General Status</u> <u>History of Past Illness</u> (Past Medical History) <u>Immunizations</u> <u>Medications</u> <u>Problem List</u> <u>Procedures</u> (List of Surgeries) (History of Procedures) <u>Results</u> <u>Review of Systems</u> <u>Social History</u> <u>Vital Signs</u>

¹⁴ CCD is the only document with a fixed clinicalDocument/code

¹⁵ Required only for inpatient settings

¹⁶ Either Reason for Referral or Reason for Visit must be present.

Document Type Preferred LOINC templateId	Required Sections	Optional Sections
Diagnostic Imaging Report 18748-4 2.16.840.1.113883.10.20.22.1.5	DICOM Object Catalog Findings (Radiology Study Observation)	Addendum Clinical Presentation Complications Conclusions Current Imaging Procedure Descriptions Document Summary Key Images Medical (General) History Prior Imaging Procedure Descriptions Radiology - Impression Radiology Comparison Study - Observation Radiology Reason For Study Radiology Study - Recommendation Requested Imaging Studies Information
Discharge Summary (Discharge Summarization Note) 18842-5 2.16.840.1.113883.10.20.22.1.8	Allergies Hospital Course Hospital Discharge Diagnosis Hospital Discharge Medications Plan of Care	Chief Complaint ** Chief Complaint and Reason for Visit ** Discharge Diet Family History Functional Status History of Past Illness (Past Medical History) History of Present Illness Hospital Admissions Diagnosis Hospital Consultations Hospital Discharge Instructions Hospital Discharge Physical Hospital Discharge Studies Summary Immunizations Problem List Procedures (List of Surgeries) (History of Procedures) Reason for Visit ** Review of Systems Social History Vital Signs

Document Type Preferred LOINC templateId	Required Sections	Optional Sections
History & Physical Note 34117-2 2.16.840.1.113883.10.20.22.1.3	Allergies Assessment and Plan/Assessment/Plan of Care* Chief Complaint ** Chief Complaint and Reason for Visit ** Family History General Status History of Past Illness (Past Medical History) Medications Physical Exam Reason for Visit ** Results Review of Systems Social History Vital Signs	History of Present Illness Immunizations Instructions Problem List Procedures (List of Surgeries) (History of Procedures)
Operative Note (Surgical Operation Note) 11504-8 2.16.840.1.113883.10.20.22.1.7	Anesthesia Complications Postoperative Diagnosis Preoperative Diagnosis Procedure Estimated Blood Loss Procedure Findings Procedure Specimens Taken Procedure Description	Procedure Implants Operative Note Fluids Operative Note Surgical Procedure Plan of Care Planned Procedure Procedure Disposition Procedure Indications Surgical Drains

Document Type Preferred LOINC templateId	Required Sections	Optional Sections
<u>Procedure Note</u> 28570-0 2.16.840.1.113883.10.20.22.1.6	Assessment and Plan/Assessment/Plan of Care* Complications Postprocedure Diagnosis Procedure Description Procedure Indications	Allergies Anesthesia Chief Complaint ** Chief Complaint and Reason for Visit ** Family History History of Past Illness History of Present Illness Medical (General) History Medications Medications Administered Physical Exam Planned Procedure Procedure Disposition Procedure Estimated Blood Loss Procedure Findings Procedure Implants Procedure Specimens Taken Procedures (List of Surgeries) (History of Procedures) Reason for Visit ** Review of Systems Social History
<u>Progress Note</u> (Subsequent Evaluation Note) 11506-3 2.16.840.1.113883.10.20.22.1.9	Assessment and Plan/Assessment/Plan of Care*	Allergies Chief Complaint Instructions Interventions Medications Objective Physical Exam Problem List Results Review of Systems Subjective Vital Signs
<u>Unstructured Document</u> Non-preferred 2.16.840.1.113883.10.20.21.1.0	N/A	N/A

* Wherever referenced, intent is that either “Assessment and Plan” is present or both “Assessment” and “Plan of Care”. Only these combinations should be used.

** Wherever referenced, intent is that either Chief Complaint/Reason for Visit Section is present or Chief Complaint Section and/or Reason for Visit unique Sections should be present.

4.1 Continuity of Care Document (CCD)/HITSP C32

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.2 (open)]

This section—Continuity of Care Document (CCD) Release 1.1—describes CDA constraints in accordance with Stage 1 Meaningful Use. The CCD requirements in this guide supersede CCD Release 1; in the near future, this guide could supersede HITSP C32¹⁷.

The CCD is a core data set of the most relevant administrative, demographic, and clinical information facts about a patient's healthcare, covering one or more healthcare encounters. It provides a means for one healthcare practitioner, system, or setting to aggregate all of the pertinent data about a patient and forward it to another practitioner, system, or setting to support the continuity of care. The primary use case for the CCD is to provide a snapshot in time containing the pertinent clinical, demographic, and administrative data for a specific patient¹⁸. More specific use cases, such as a [Discharge Summary](#) or [Progress Note](#), are available as alternative documents in this guide.

4.1.1 Header Constraints Specific to CCD

The Continuity of Care Document must conform to the US Realm Header. The following sections include additional header constraints for conformant CCD.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9441) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.1"` (CONF:10037).

4.1.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level templateId asserting conformance with specific constraints of CCD as well as the templateId for the US Realm Clinical Document Header template.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8450) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.2"` (CONF:10038).

Figure 31: CCD ClinicalDocument/templateId example

```
<!-- indicates conformance with US Realm Clinical Document Header  
template -->  
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>  
<!-- conforms to CCD requirements -->  
<templateId root='2.16.840.1.113883.10.20.22.1.2'>
```

¹⁷ HITSP Summary Documents Using HL7 Continuity of Care Document (CCD) Component; (HITSP/C32); Versions 2.1, 2.2, 2.3, 2.5; December 13, 2007 - July 8, 2009

¹⁸ CCD was initially scoped to reflect the ASTM E2369-05 Standard Specification for Continuity of Care Record (CCR). The requirements specified here, comply with Stage 1 Meaningful Use.

4.1.1.2 ClinicalDocument/code

In accordance with the CDA specification, the ClinicalDocument/code element must be present and specifies the type of the clinical document. CCD requires the document type code 34133-9 "Summarization of Episode Note".

3. **SHALL** contain exactly one [1..1] **code** (CONF:17180).
 - a. This code **SHALL** contain exactly one [1..1] @code="34133-9" Summarization of Episode Note (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:17181).

Figure 32: CCD code example

```
<code codeSystem="2.16.840.1.113883.6.1"  
      codeSystemName="LOINC" code="34133-9"  
      displayName="Summarization of Episode Note"/>
```

4.1.1.3 DocumentationOf/serviceEvent

The main activity being described by a CCD is the provision of healthcare over a period of time. This is shown by setting the value of ClinicalDocument/documentationOf/serviceEvent/@classCode to "PCPR" (care provision) and indicating the duration over which care was provided in ClinicalDocument/documentationOf/serviceEvent/effectiveTime. Additional data from outside this duration may also be included if it is relevant to care provided during that time range (e.g., reviewed during the stated time range).

NOTE: Implementations originating a CCD should take care to discover what the episode of care being summarized is. For example, when a patient fills out a form providing relevant health history, the episode of care being documented might be from birth to the present.

4. **SHALL** contain exactly one [1..1] **documentationOf** (CONF:8452).
 - a. This documentationOf **SHALL** contain exactly one [1..1] **serviceEvent** (CONF:8480).
 - i. This serviceEvent **SHALL** contain exactly one [1..1] @classCode="PCPR" Care Provision (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8453).
 - ii. This serviceEvent **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:8481).
 1. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:8454).
 2. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:8455).
 - iii. This serviceEvent **SHOULD** contain zero or more [0..*] **performer** (CONF:8482).
 1. serviceEvent/performer represents the healthcare providers involved in the current or pertinent historical care of the patient. Preferably, the patient's key

healthcare providers would be listed, particularly their primary physician and any active consulting physicians, therapists, and counselors (CONF:10026).

2. Such performers **SHALL** contain exactly one [1..1] `@typeCode="PRF"` Participation physical performer (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8458).
3. Such performers **MAY** contain zero or more [0..1] **assignedEntity** (CONF:8459).
 - a. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:8460).
 - i. **SHOULD** include zero or one [0..1] **id** where `id/@root = "2.16.840.1.113883.4.6"` National Provider Identifier (CONF:10027).
 - b. This assignedEntity **MAY** contain zero or one [0..1] **code** (CONF:8461).
 - i. The code **MAY** be the NUCC Health Care Provider Taxonomy (CodeSystem: 2.16.840.1.113883.6.101). (See <http://www.nucc.org>) (CONF:8462).

4.1.1.4 Author

5. CCD **SHALL** contain at least one [1..*] author (CONF:9442)
 - a. **SHALL** contain exactly one [1..1] assignedAuthor (CONF:9443)
 - i. **SHALL** contain exactly one [1..1] assignedPerson or exactly one [1..1] representedOrganization. (CONF:8456).
 - ii. If assignedAuthor has an associated representedOrganization with no assignedPerson or assignedAuthoringDevice, then the value for "ClinicalDocument/author/assignedAuthor/id/@NullFlavor" **SHALL** be "NA" "Not applicable" 2.16.840.1.113883.5.1008 NullFlavor **STATIC**. (CONF:8457).

4.1.2 CCD Body Constraints

The Continuity of Care Document supports both narrative sections and sections requiring coded clinical statements. The required and optional sections are listed in the [Document Types and Required/Optional Sections](#) table. The table below the constraints shows all templates including entries within each section.

1. The component/structuredBody **SHALL** conform to the section constraints below (CONF:9536).
 - a. **SHALL** contain exactly one [1..1] [Allergies Section\(entries required\)](#) (templateId:2.16.840.1.113883.10.20.22.2.6.1) (CONF:9445).

- b. **SHALL** contain exactly one [1..1] [Medications Section \(entries required\)](#) (templateId:2.16.840.1.113883.10.20.22.2.1.1) (CONF:9447).
- c. **SHALL** contain exactly one [1..1] [Problem Section \(entries required\)](#) (templateId:2.16.840.1.113883.10.20.22.2.5.1) (CONF:9449).
- d. **SHOULD** contain exactly one [1..1] [Procedures Section \(entries required\)](#) (templateId:2.16.840.1.113883.10.20.22.2.7.1) (CONF:9451).
- e. **SHALL** contain exactly one [1..1] [Results Section \(entries required\)](#) (templateId:2.16.840.1.113883.10.20.22.2.3.1) (CONF:9453).
- f. **MAY** contain zero or one [0..1] [Advance Directives Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.21) (CONF:9455).
- g. **MAY** contain zero or one [0..1] [Encounters Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.22) (CONF:9457).
- h. **MAY** contain zero or one [0..1] [Family History Section](#) (templateId:2.16.840.1.113883.10.20.22.2.15) (CONF:9459).
- i. **MAY** contain zero or one [0..1] [Functional Status Section](#) (templateId:2.16.840.1.113883.10.20.22.2.14) (CONF:9461).
- j. **MAY** contain zero or one [0..1] [Immunizations Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.2) (CONF:9463).
- k. **MAY** contain zero or one [0..1] [Medical Equipment Section](#) (templateId:2.16.840.1.113883.10.20.22.2.23) (CONF:9466).
- l. **MAY** contain zero or one [0..1] [Payers Section](#) (templateId:2.16.840.1.113883.10.20.22.2.18) (CONF:9468).
- m. **MAY** contain zero or one [0..1] [Plan of Care Section](#) (templateId:2.16.840.1.113883.10.20.22.2.10) (CONF:9470).
- n. **MAY** contain zero or one [0..1] [Social History Section](#) (templateId:2.16.840.1.113883.10.20.22.2.17) (CONF:9472).
- o. **MAY** contain zero or one [0..1] [Vital Signs Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.4) (CONF:9474).

The following table shows relationships among the templates in the body of a CCD.

Table 21: Template Containment for a CCD

Template Title	Template Type	templateId
Continuity of Care Document (CCD)	document	2.16.840.1.113883.10.20.22.1.2
Advance Directives Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.21
Advance Directive Observation	entry	2.16.840.1.113883.10.20.22.4.48
Allergies Section (entries required)	section	2.16.840.1.113883.10.20.22.2.6.1
Allergy Problem Act	entry	2.16.840.1.113883.10.20.22.4.30
Allergy Observation	entry	2.16.840.1.113883.10.20.22.4.7
Allergy Status Observation	entry	2.16.840.1.113883.10.20.22.4.28
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20

Template Title	Template Type	templateId
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Encounters Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.22
Encounter Activities	entry	2.16.840.1.113883.10.20.22.4.49
Encounter Diagnosis	entry	2.16.840.1.113883.10.20.22.4.80
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Family History Section	section	2.16.840.1.113883.10.20.22.2.15
Family History Organizer	entry	2.16.840.1.113883.10.20.22.4.45
Family History Observation	entry	2.16.840.1.113883.10.20.22.4.46
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Family History Death Observation	entry	2.16.840.1.113883.10.20.22.4.47
Functional Status Section	section	2.16.840.1.113883.10.20.22.2.14
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Cognitive Status Problem Observation	entry	2.16.840.1.113883.10.20.22.4.73
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72

Template Title	Template Type	templateId
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Cognitive Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.74
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Cognitive Status Result Organizer	entry	2.16.840.1.113883.10.20.22.4.75
Cognitive Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.74
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Functional Status Problem Observation	entry	2.16.840.1.113883.10.20.22.4.68
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Functional Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.67
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Functional Status Result Organizer	entry	2.16.840.1.113883.10.20.22.4.66
Functional Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.67
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Immunizations Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.2
Immunization Activity	entry	2.16.840.1.113883.10.20.22.4.52
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Immunization Refusal Reason	entry	2.16.840.1.113883.10.20.22.4.53
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18

Template Title	Template Type	templateId
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19

Template Title	Template Type	templateId
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Medical Equipment Section	section	2.16.840.1.113883.10.20.22.2.23
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Medications Section (entries required)	section	2.16.840.1.113883.10.20.22.2.1.1
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20

Template Title	Template Type	templateId
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Payers Section	section	2.16.840.1.113883.10.20.22.2.18
Coverage Activity	entry	2.16.840.1.113883.10.20.22.4.60
Policy Activity	entry	2.16.840.1.113883.10.20.22.4.61
Plan of Care Section	section	2.16.840.1.113883.10.20.22.2.10
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Plan of Care Activity Encounter	entry	2.16.840.1.113883.10.20.22.4.40
Plan of Care Activity Observation	entry	2.16.840.1.113883.10.20.22.4.44
Plan of Care Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.41
Plan of Care Activity Substance Administration	entry	2.16.840.1.113883.10.20.22.4.42
Plan of Care Activity Supply	entry	2.16.840.1.113883.10.20.22.4.43
Problem Section (entries required)	section	2.16.840.1.113883.10.20.22.2.5.1
Problem Concern Act (Condition)	entry	2.16.840.1.113883.10.20.22.4.3
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedures Section (entries required)	section	2.16.840.1.113883.10.20.22.2.7.1
Procedure Activity Act	entry	2.16.840.1.113883.10.20.22.4.12
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17

Template Title	Template Type	templateId
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Procedure Activity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.13
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20

Template Title	Template Type	templateId
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Results Section (entries required)	section	2.16.840.1.113883.10.20.22.2.3.1
Result Organizer	entry	2.16.840.1.113883.10.20.22.4.1

Template Title	Template Type	templateId
Result Observation	entry	2.16.840.1.113883.10.20.22.4.2
Social History Section	section	2.16.840.1.113883.10.20.22.2.17
Pregnancy Observation	entry	2.16.840.1.113883.10.20.15.3.8
Estimated Date of Delivery	entry	2.16.840.1.113883.10.20.15.3.1
Smoking Status Observation	entry	2.16.840.1.113883.10.22.4.78
Social History Observation	entry	2.16.840.1.113883.10.20.22.4.38
Vital Signs Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.4
Vital Signs Organizer	entry	2.16.840.1.113883.10.20.22.4.26
Vital Sign Observation	entry	2.16.840.1.113883.10.20.22.4.27

4.2 Consultation Note

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.4 (open)]

For the purpose of this Implementation Guide, a consultation visit is defined by the evaluation and management guidelines for a consultation established by the Centers for Medicare and Medicaid Services (CMS). According to those guidelines, a Consultation Note must be generated as a result of a physician or nonphysician practitioner's (NPP) request for an opinion or advice from another physician or NPP. Consultations must involve face-to-face time with the patient or fall under guidelines for telemedicine visits.

A Consultation Note must be provided to the referring physician or NPP and must include the reason for the referral, history of present illness, physical examination, and decision-making component (Assessment and Plan).

An NPP is defined as any licensed medical professional as recognized by the state in which the professional practices, including, but not limited to, physician assistants, nurse practitioners, clinical nurse specialists, social workers, registered dietitians, physical therapists, and speech therapists.

Reports on visits requested by a patient, family member, or other third party are not covered by this specification. Second opinions, sometimes called "confirmatory consultations," also are not covered here. Any question on use of the Consultation Note defined here should be resolved by reference to CMS or American Medical Association (AMA) guidelines.

4.2.1 Consultation Note Header Constraints

The Consultation Note must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant Consultation Notes.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9477) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.1"` (CONF:10039)

4.2.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level templateId asserting conformance with specific constraints of a Consultation Note as well as the templateId for the US Realm Clinical Document Header template.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8375) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.4"` (CONF:10040).

Figure 33: Consultation note ClinicalDocument/templateId example

```
<!-- indicates conformance with US Realm Clinical Document Header
template -->
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>
<!-- conforms to a Consultation Note --><templateId
root=2.16.840.1.113883.10.20.22.1.4' />
```

4.2.1.2 ClinicalDocument/code

The Consultation Note limits document type codes to those codes listed in the [Consultation Note LOINC Document Codes](#) table ([invalid codes](#) are listed in a separate table). Implementation may use translation elements to specify a local code that is equivalent to a document type (see the [Consultation Note translation of local code](#) figure).

The Consultation Note recommends use of a single document type code, 11488-4 "Consultation Note", with further specification provided by author or performer, setting, or specialty. The specialized codes in the [Consultation Note LOINC Document Codes](#) table are pre-coordinated with the practice setting or the training or professional level of the author. Use of these codes is not recommended, as this duplicates information that may be present in the header. When pre-coordinated codes are used, any coded values describing the author or performer of the service act or the practice setting must be consistent with the LOINC document type. For example, a Cardiology Consultation Note would not be authored by an Obstetrician.

3. **SHALL** contain exactly one [1..1] **code** (CONF:17176).
 - a. This code **SHALL** contain exactly one [1..1] `@code`, which **SHALL** be selected from ValueSet `ConsultDocumentType 2.16.840.1.113883.11.20.9.31 DYNAMIC` (CONF:17177).

Table 22: Consultation Note LOINC Document Codes

Value Set: ConsultDocumentType 2.16.840.1.113883.11.20.9.31 DYNAMIC Code System: LOINC 2.16.840.1.113883.6.1			
LOINC Code	Type of Service (“Component”)	Setting (“System”)	Specialty/ Training/ Professional Level (“Method”)
Root Level Document Type Code			
11488-4	Consultation Note		{Provider}
Specialized by Setting			
34100-8	Consultation Note	Critical care unit	{Provider}
34104-0	Consultation Note	Hospital	{Provider}
51845-6	Consultation Note	Outpatient	{Provider}
51853-0	Consultation Note	Inpatient	{Provider}
51846-4	Consultation Note	Emergency Dept.	{Provider}
Specialized by Setting and Specialty			
34101-6	Consultation Note	Outpatient	General medicine
34749-2	Consultation Note	Outpatient	Anesthesia
34102-4	Consultation Note	Hospital	Psychiatry
Specialized by Specialty¹⁹			
34099-2	Consultation Note		Cardiology
34756-7	Consultation Note		Dentistry
34758-3	Consultation Note		Dermatology
34760-9	Consultation Note		Diabetology
34879-7	Consultation Note		Endocrinology
34761-7	Consultation Note		Gastroenterology
34764-1	Consultation Note		General medicine
34771-6	Consultation Note		General surgery
34776-5	Consultation Note		Gerontology
34777-3	Consultation Note		Gynecology
34779-9	Consultation Note		Hematology+Oncology
34781-5	Consultation Note		Infectious disease
34783-1	Consultation Note		Kinesiotherapy
34785-6	Consultation Note		Mental health
34795-5	Consultation Note		Nephrology
34797-1	Consultation Note		Neurology
34798-9	Consultation Note		Neurosurgery
34800-3	Consultation Note		Nutrition+Dietetics
34803-7	Consultation Note		Occupational health
34855-7	Consultation Note		Occupational therapy
34805-2	Consultation Note		Oncology

¹⁹ Use of these codes is not recommended, as it duplicates information that may be present in the header

Value Set: ConsultDocumentType 2.16.840.1.113883.11.20.9.31 DYNAMIC
 Code System: LOINC 2.16.840.1.113883.6.1

LOINC Code	Type of Service (“Component”)	Setting (“System”)	Specialty/ Training/ Professional Level (“Method”)
34807-8	Consultation Note		Ophthalmology
34810-2	Consultation Note		Optometry
34812-8	Consultation Note		Oromaxillofacial surgery
34814-4	Consultation Note		Orthopedics
34816-9	Consultation Note		Otorhinolaryngology
34820-1	Consultation Note		Pharmacy
34822-7	Consultation Note		Physical medicine and rehabilitation
34824-3	Consultation Note		Physical therapy
34826-8	Consultation Note		Plastic surgery
34828-4	Consultation Note		Podiatry
34788-0	Consultation Note		Psychiatry
34791-4	Consultation Note		Psychology
34103-2	Consultation Note		Pulmonary
34831-8	Consultation Note		Radiation oncology
34833-4	Consultation Note		Recreational therapy
34835-9	Consultation Note		Rehabilitation
34837-5	Consultation Note		Respiratory therapy
34839-1	Consultation Note		Rheumatology
34841-7	Consultation Note		Social work
34845-8	Consultation Note		Speech therapy+Audiology
34847-4	Consultation Note		Surgery
34849-0	Consultation Note		Thoracic surgery
34851-6	Consultation Note		Urology
34853-2	Consultation Note		Vascular surgery

Table 23: Invalid Codes for Consultation Note²⁰

LOINC Code	Type of Service (“Component”)	Setting (“System”)	Specialty/ Training/ Professional Level (“Method”)
<u>18841-7</u>	Hospital consultations		
<u>8647-0</u>	Hospital consultations	(scale = nom)	
<u>33720-4</u>	Blood bank consult		
<u>24611-6</u>	Confirmatory consultation note	Outpatient	{Provider}
<u>47040-1</u>	Confirmatory consultation note		{Provider}
<u>47041-9</u>	Confirmatory consultation note	Inpatient	{Provider}
<u>28569-2</u>	Subsequent evaluation note		Consulting physician
<u>18763-3</u>	Initial evaluation note		Consulting physician

Figure 34: Consultation note ClinicalDocument/code example

```
<code codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'
      code='11488-4' displayName='CONSULTATION NOTE' />
```

Figure 35: Consultation note translation of local code example

```
<code code='34761-7'
      displayName='GASTROENTEROLOGY CONSULTATION NOTE'
      codeSystem='2.16.840.1.113883.6.1'
      codeSystemName='LOINC'>
  <translation code='X-GICON'
              displayName='GI CONSULTATION NOTE'
              codeSystem='2.16.840.1.113883.19' />
</code>
```

²⁰ The Invalid Codes for Consultation Note are from the original Consultation Note DSTU.

Figure 36: Consultation note uncoordinated document type codes example

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  ...
  <code codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'
        code='11488-4' displayName='CONSULTATION NOTE'/>
  <title>Good Health Cardiology Consultation Note</title>
  ...
  <author>
    <functionCode codeSystem='2.16.840.1.113883.5.88'
                  codeSystemName='ParticipationFunction'
                  code='ATTPHYS' />
    <assignedAuthor>
      ...
      <code codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED
CT'
            code='17561000' displayName='Cardiologist' />
      ...
    </assignedAuthor>
  </author>
  ...
  <componentOf>
    <encompassingEncounter>
      ...
      <healthCareFacility>
        <code codeSystem='2.16.840.1.113883.5.111'
              codeSystemName='RoleCode'
              code='HOSP' />
      </healthCareFacility>
    </encompassingEncounter>
  </componentOf>
</ClinicalDocument>
```

4.2.1.3 InFulfillmentOf

The **inFulfillmentOf** element describes the prior orders that are fulfilled (in whole or part) by the service events described in the Consultation Note. For example, the prior order might be for the consultation being reported in the Note.

4. **SHALL** contain at least one [1..*] **inFulfillmentOf** (CONF:8382).
 - a. This **inFulfillmentOf** **SHOULD** contain exactly one [1..1] **order** (CONF:8385).
 - i. This **order** **SHALL** contain at least one [1..*] **id** (CONF:9102).

Figure 37: Consultation note inFulfillmentOf example

```
<inFulfillmentOf typeCode="FLFS">
  <order classCode="ACT" moodCode="RQO">
    <id root="2.16.840.1.113883.19" extension="12345-67890"/>
  </order>
</inFulfillmentOf>
```

4.2.1.4 ComponentOf

A Consultation Note is always associated with an encounter; the `componentOf` element must be present and the encounter must be identified.

CDA R2 requires `encompassingEncounter` and the `id` element of the `encompassingEncounter` is required to be present and represents the identifier for the encounter.

The `encounterParticipant` elements may be present. If present, they represent only those participants in the encounter, not necessarily the entire episode of care (see related information under [Participant](#) above).

The `responsibleParty` element may be present. If present, it represents only the party responsible for the encounter, not necessarily the entire episode of care.

5. **SHALL** contain exactly one [1..1] `componentOf` (CONF:8386).
 - a. This `componentOf` **SHALL** contain exactly one [1..1] `encompassingEncounter` (CONF:8387).
 - i. This `encompassingEncounter` **SHALL** contain exactly one [1..1] `id` (CONF:8388).
 - ii. This `encompassingEncounter` **SHALL** contain exactly one [1..1] `effectiveTime` (CONF:8389).
 1. This `effectiveTime` **SHALL** contain exactly one [1..1] [US Realm Date and Time \(DT.US.FIELDED\)](#)
(2.16.840.1.113883.10.20.22.5.3)
(CONF:10132).
 - ii. This `encompassingEncounter` **MAY** contain zero or one [0..1] `responsibleParty` (CONF:8391).
 1. The `responsibleParty` element records only the party responsible for the encounter, not necessarily the entire episode of care. (CONF:8393).
 2. The `responsibleParty` element, if present, **SHALL** contain an `assignedEntity` element which **SHALL** contain an `assignedPerson` element, a `representedOrganization` element, or both. (CONF:8394).
 - iv. This `encompassingEncounter` **MAY** contain zero or more [0..*] `encounterParticipant` (CONF:8392).
 1. The `encounterParticipant` element, if present, records only participants in the encounter, not necessarily in the entire episode of care. (CONF:8395).
 2. An `encounterParticipant` element, if present, **SHALL** contain an `assignedEntity` element which **SHALL** contain an `assignedPerson` element, a `representedOrganization` element, or both. (CONF:8396).

Figure 38: Consultation note componentOf example

```
<componentOf>
  <encompassingEncounter>
    <id extension='9937012' root='1.3.6.4.1.4.1.2835.12' />
    <effectiveTime value="20060828170821" />
    <code codeSystem='2.16.840.1.113883.6.12'
          codeSystemName='CPT-4'
          code='99213'
          displayName='Evaluation and Management' />
    ...
  </encompassingEncounter>
</componentOf>
```

4.2.2 Consultation Note Body Constraints

The Consultation Note supports both narrative sections and sections requiring coded clinical statements. The required and optional sections are listed in the [Document Types and Required/Optional Sections](#) table. The table below the constraints shows all templates including entries within each section.

1. **SHALL** contain exactly one [1..1] **component** (CONF:8397).
 - a. A Consultation Note can have either a structuredBody or a nonXMLBody. (CONF:8398).
 - i. A Consultation Note can conform to CDA Level 1 (nonXMLBody), CDA Level 2 (structuredBody with sections that contain a narrative block), or CDA Level 3 (structuredBody containing sections that contain a narrative block and coded entries). In this template (templateId 2.16.840.1.113883.10.20.22.1.4), coded entries are optional. (CONF:8399).
 - b. If structuredBody, the component/structuredBody **SHALL** conform to the section constraints below. (CONF:9503).
 - i. **SHALL** include an Assessment and Plan Section, or an Assessment Section and a Plan Section. (CONF:9501).
 - ii. **SHALL NOT** include an Assessment/Plan Section when an Assessment Section and a Plan of Care Section are present. (CONF:10028)
 - iii. **MAY** contain zero or one [0..1] [Assessment Section](#) (templateId:2.16.840.1.113883.10.20.22.2.8) (CONF:9487).
 - iv. **MAY** contain zero or one [0..1] [Plan of Care Section](#) (templateId:2.16.840.1.113883.10.20.22.2.10) (CONF:9489).
 - v. **MAY** contain zero or one [0..1] [Assessment and Plan Section](#) (templateId:2.16.840.1.113883.10.20.22.2.9) (CONF:9491).

- vi. **SHALL** contain exactly one [1..1] [History of Present Illness Section](#) (templateId: 1.3.6.1.4.1.19376.1.5.3.1.3.4) (CONF:9493).
- vii. **SHOULD** contain exactly one [1..1] [Physical Exam Section](#) (templateId:2.16.840.1.113883.10.20.2.10) (CONF:9495).
- viii.**SHALL** include a Reason for Referral or Reason for Visit section (CONF:9504).
- ix. **MAY** contain zero or one [0..1] [Reason for Referral Section](#) (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.1) (CONF:9498).
- x. **MAY** contain zero or one [0..1] [Reason for Visit Section](#) (templateId:2.16.840.1.113883.10.20.22.2.12) (CONF:9500).
- xi. **MAY** contain zero or one [0..1] [Allergies Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.6) (CONF:9507).
- xii. **SHALL NOT** include a combined Chief Complaint and Reason for Visit Section with either a Chief Complaint Section or a Reason for Visit Section. (CONF:10029).
- xiii.**MAY** contain zero or one [0..1] [Chief Complaint Section](#) (templateId:1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1) (CONF:9509).
- xiv.**MAY** contain zero or one [0..1] [Chief Complaint and Reason for Visit Section](#) (templateId:2.16.840.1.113883.10.20.22.2.13) (CONF:9511).
- xv. **MAY** contain zero or one [0..1] [Family History Section](#) (templateId:2.16.840.1.113883.10.20.22.2.15) (CONF:9513).
- xvi. **MAY** contain zero or one [0..1] [General Status Section](#) (templateId:2.16.840.1.113883.10.20.2.5) (CONF:9515).
- xvii. **MAY** contain zero or one [0..1] [History of Past Illness Section](#) (templateId:2.16.840.1.113883.10.20.22.2.20) (CONF:9517).
- xviii. **MAY** contain zero or one [0..1] [Immunizations Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.2) (CONF:9519).
- xix. **MAY** contain zero or one [0..1] [Medications Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.1) (CONF:9521).

- xx. **MAY** contain zero or one [0..1] [Problem Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.5)
 (CONF:9523).
- xxi. **MAY** contain zero or one [0..1] [Procedures Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.7)
 (CONF:9525).
- xxii. **MAY** contain zero or one [0..1] [Results Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.3)
 (CONF:9527).
- xxiii. **MAY** contain zero or one [0..1] [Review of Systems Section](#) (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.18)
 (CONF:9529).
- xxiv. **MAY** contain zero or one [0..1] [Social History Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.17)
 (CONF:9531).
- xxv. **MAY** contain zero or one [0..1] [Vital Signs Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.4)
 (CONF:9533).

The following table shows relationships among the templates in the body of a Consultation Note.

Table 24: Template Containment for a Consultation Note

Template Title	Template Type	templateId
Consultation Note	document	2.16.840.1.113883.10.20.22.1.4
Allergies Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.6
Allergy Problem Act	entry	2.16.840.1.113883.10.20.22.4.30
Allergy - Intolerance Observation	entry	2.16.840.1.113883.10.20.22.4.7
Allergy Status Observation	entry	2.16.840.1.113883.10.20.22.4.28
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54

Template Title	Template Type	templateId
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Assessment and Plan Section</u>	section	2.16.840.1.113883.10.20.22.2.9
<u>Plan of Care Activity Act</u>	entry	2.16.840.1.113883.10.20.22.4.39
<u>Assessment Section</u>	section	2.16.840.1.113883.10.20.22.2.8

Template Title	Template Type	templateId
Chief Complaint and Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.13
Chief Complaint Section	section	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
Family History Section	section	2.16.840.1.113883.10.20.22.2.15
Family History Organizer	entry	2.16.840.1.113883.10.20.22.4.45
Family History Observation	entry	2.16.840.1.113883.10.20.22.4.46
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Family History Death Observation	entry	2.16.840.1.113883.10.20.22.4.47
General Status Section	section	2.16.840.1.113883.10.20.2.5
History of Past Illness Section	section	2.16.840.1.113883.10.20.22.2.20
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
History of Present Illness Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.4
Immunizations Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.2
Immunization Activity	entry	2.16.840.1.113883.10.20.22.4.52
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Immunization Refusal Reason	entry	2.16.840.1.113883.10.20.22.4.53
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19

Template Title	Template Type	templateId
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25

Template Title	Template Type	templateId
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.1
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Physical Exam Section	section	2.16.840.1.113883.10.20.2.10
Plan of Care Section	section	2.16.840.1.113883.10.20.22.2.10
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Plan of Care Activity Encounter	entry	2.16.840.1.113883.10.20.22.4.40
Plan of Care Activity Observation	entry	2.16.840.1.113883.10.20.22.4.44
Plan of Care Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.41
Plan of Care Activity Substance Administration	entry	2.16.840.1.113883.10.20.22.4.42
Plan of Care Activity Supply	entry	2.16.840.1.113883.10.20.22.4.43
Problem Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.5

Template Title	Template Type	templateId
Problem Concern Act (Condition)	entry	2.16.840.1.113883.10.20.22.4.3
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedures Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.7
Procedure Activity Act	entry	2.16.840.1.113883.10.20.22.4.12
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Procedure Activity Observation	entry	2.16.840.1.113883.10.20.22.4.13
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20

Template Title	Template Type	templateId
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17

Template Title	Template Type	templateId
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Reason for Referral Section</u>	section	1.3.6.1.4.1.19376.1.5.3.1.3.1
<u>Reason for Visit Section</u>	section	2.16.840.1.113883.10.20.22.2.12
<u>Results Section (entries optional)</u>	section	2.16.840.1.113883.10.20.22.2.3
<u>Result Organizer</u>	entry	2.16.840.1.113883.10.20.22.4.1
<u>Result Observation</u>	entry	2.16.840.1.113883.10.20.22.4.2
<u>Review of Systems Section</u>	section	1.3.6.1.4.1.19376.1.5.3.1.3.18
<u>Social History Section</u>	section	2.16.840.1.113883.10.20.22.2.17
<u>Pregnancy Observation</u>	entry	2.16.840.1.113883.10.20.15.3.8
<u>Estimated Date of Delivery</u>	entry	2.16.840.1.113883.10.20.15.3.1
<u>Smoking Status Observation</u>	entry	2.16.840.1.113883.10.22.4.78
<u>Social History Observation</u>	entry	2.16.840.1.113883.10.20.22.4.38
<u>Vital Signs Section (entries optional)</u>	section	2.16.840.1.113883.10.20.22.2.4
<u>Vital Signs Organizer</u>	entry	2.16.840.1.113883.10.20.22.4.26
<u>Vital Sign Observation</u>	entry	2.16.840.1.113883.10.20.22.4.27

4.3 Diagnostic Imaging Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.5 (open)]

A Diagnostic Imaging Report (DIR) is a document that contains a consulting specialist's interpretation of image data. It conveys the interpretation to the referring (ordering) physician and becomes part of the patient's medical record. It is for use in Radiology, Endoscopy, Cardiology, and other imaging specialties.

4.3.1 DIR Header Constraints

The DIR must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant DIR Notes.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9405) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.1"` (CONF:10041).

4.3.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level templateId asserting conformance with specific constraints of a DIR as well as the templateId for the U.S. Realm CDA Header Constraints template.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8404) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.5"` (CONF:10042).

Figure 39: DIR ClinicalDocument/templateId example

```
<!-- indicates conformance with US Realm Clinical Document Header  
template -->  
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>  
<!-- conforms to DIR requirements -->  
<templateId root='2.16.840.1.113883.10.20.22.1.5' />
```

4.3.1.2 ClinicalDocument/id

3. The ClinicalDocument/id/@root attribute **SHALL** be a syntactically correct OID, and **SHALL NOT** be a UUID. (CONF:8405).
 - a. OIDs **SHALL** be represented in dotted decimal notation, where each decimal number is either 0 or starts with a nonzero digit. More formally, an OID **SHALL** be in the form `([0-2])(.[1-9][0-9]*|0))+` (CONF:8406).
 - b. OIDs **SHALL** be no more than 64 characters in length. (CONF:8407).

4.3.1.3 ClinicalDocument/code

Given that DIR documents may be transformed from established collections of imaging reports already stored with their own type codes, there is no static set of Document Type codes. The set of LOINC codes listed in the [DIR LOINC Document Type Codes](#) table may be extended by additions to LOINC and supplemented by local codes as translations.

The DIR document recommends use of a single document type code, 18748-4 "Diagnostic Imaging Report", with further specification provided by author or performer, setting, or specialty. Some of these codes in the [DIR LOINC Document Type Codes](#) table are pre-coordinated with either the imaging modality, body part examined, or specific imaging method such as the view. Use

of these codes is not recommended, as this duplicates information potentially present with the header. When pre-coordinated codes are used, any coded values describing the author or performer of the service act or the practice setting must be consistent with the LOINC document type. This table is drawn from LOINC Version 2.36, June 30, 2011, and consists of codes whose scale is DOC and that refer to reports for diagnostic imaging procedures.

4. **SHALL** contain exactly one [1..1] **code** (CONF:14833).

- a. This code **SHOULD** contain zero or one [0..1] @code, which **SHOULD** be selected from ValueSet DIRDocumentTypeCode 2.16.840.1.113883.11.20.9.32 **DYNAMIC** (CONF:14834).

Table 25: DIR LOINC Document Type Codes

Value Set: DIRDocumentTypeCodes 2.16.840.1.113883.11.20.9.32 DYNAMIC Code System: LOINC 2.16.840.1.113883.6.1					
LOINC Code	DIR 'Modality'	Common DIR Display Name	Type of Service 'Component'	Setting 'System'	Specialty/ Training/ Professional Level 'Method_Type'
Preferred Code					
18748-4	Any	Diagnostic Imaging Report	Study Report		Diagnostic Imaging
Additional Codes					
18747-6	Computed Tomography	CT Report	Study		CT
18755-9	Magnetic Resonance Imaging	MRI Report	Study report		MRI
18760-9	Ultrasound	Ultrasound Report	Study		US
18757-5	Nuclear Medicine	Nuclear Medicine Report	Study report		RadNuc
18758-3	Positron Emission Tomography	PET Scan Report	Study		Pet scan
18745-0	Cardiac Radiography /Fluoro-scopy	Cardiac Catheterization Report	Study report	Heart	Cardiac catheterization
11522-0	Cardiac Ultrasound	Echocardiography Report	Study report	Heart	Cardiac echo
18746-8	Colonoscopy	Colonoscopy Report	Study report	Lower GI tract	Colonoscopy
18751-8	Endoscopy	Endoscopy Report	Study report	Upper GI tract	Endoscopy

Value Set: DIRDocumentTypeCodes 2.16.840.1.113883.11.20.9.32 DYNAMIC Code System: LOINC 2.16.840.1.113883.6.1					
LOINC Code	DIR 'Modality'	Common DIR Display Name	Type of Service 'Component'	Setting 'System'	Specialty/Training/Professional Level 'Method_Type'
11525-3	Ultrasound	Obstetrical Ultrasound Report	Study report	Pelvis+Fetus	OB US

Figure 40: DIR ClinicalDocument/code example

```
<code code="18748-4"
      codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"
      displayName="Diagnostic Imaging Report"/>
```

Figure 41: DIR use of the translation element to include local codes for document type

```
<code code="18748-4"
      codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"
      displayName="Diagnostic Imaging Report">
  <translation code='XRPEDS'
    displayName='Pediatric Radiography Report'
    codeSystem='2.16.840.1.123456.78.9'>
  </translation>
</code>
```

4.3.1.4 InformationRecipient

5. **SHALL NOT** contain [0..0] **informant** (CONF:8410).
6. **MAY** contain zero or more [0..*] **informationRecipient** (CONF:8411).
 - a. The physician requesting the imaging procedure (ClinicalDocument/participant[@typeCode=REF]/associatedEntity), if present, **SHOULD** also be recorded as an informationRecipient, unless in the local setting another physician (such as the attending physician for an inpatient) is known to be the appropriate recipient of the report. (CONF:8412).
 - b. When no referring physician is present, as in the case of self-referred screening examinations allowed by law, the intendedRecipient **MAY** be absent. The intendedRecipient **MAY** also be the health chart of the patient, in which case the receivedOrganization **SHALL** be the scoping organization of that chart. (CONF:8413).

4.3.1.5 Participant

7. **MAY** contain zero or one [0..1] **participant** (CONF:8414) such that it

- a. If participant is present, the assignedEntity/assignedPerson element **SHALL** be present and **SHALL** represent the physician requesting the imaging procedure (the referring physician AssociatedEntity that is the target of ClinicalDocument/participant@typeCode=REF). (CONF:8415).
 - i. This **SHALL** contain exactly one [1..1] **US Realm Person Name (PN.US.FIELDED)** (2.16.840.1.113883.10.20.22.5) (CONF:9406).

Figure 42: DIR participant example

```
<participant typeCode="REF">
  <associatedEntity classCode="PROV">
    <id nullFlavor="NI"/>
    <addr nullFlavor="NI"/>
    <telecom nullFlavor="NI"/>
    <associatedPerson>
      <name>
        <given>Amanda</given>
        <family>Assigned</family>
        <suffix>MD</suffix>
      </name>
    </associatedPerson>
  </associatedEntity>
</participant>
```

4.3.1.6 InFulfillmentOf

An **inFulfillmentOf** element represents the Placer Order that is either a group of orders (modeled as **PlacerGroup** in the Placer Order RMIM of the Orders & Observations domain) or a single order item (modeled as **ObservationRequest** in the same RMIM). This optionality reflects two major approaches to the grouping of procedures as implemented in the installed base of imaging information systems. These approaches differ in their handling of grouped procedures and how they are mapped to identifiers in the Digital Imaging and Communications in Medicine (DICOM) image and structured reporting data. The example of a CT examination covering chest, abdomen, and pelvis will be used in the discussion below.

In the IHE Scheduled Workflow model, the Chest CT, Abdomen CT, and Pelvis CT each represent a Requested Procedure, and all three procedures are grouped under a single Filler Order. The Filler Order number maps directly to the DICOM Accession Number in the DICOM imaging and report data.

A widely deployed alternative approach maps the requested procedure identifiers directly to the DICOM Accession Number. The Requested Procedure ID in such implementations may or may not be different from the Accession Number, but is of little identifying importance because there is only one Requested Procedure per Accession Number. There is no identifier that formally connects the requested procedures ordered in this group.

In both cases, `inFulfillmentOf/order/id` is mapped to the DICOM Accession Number in the imaging data.

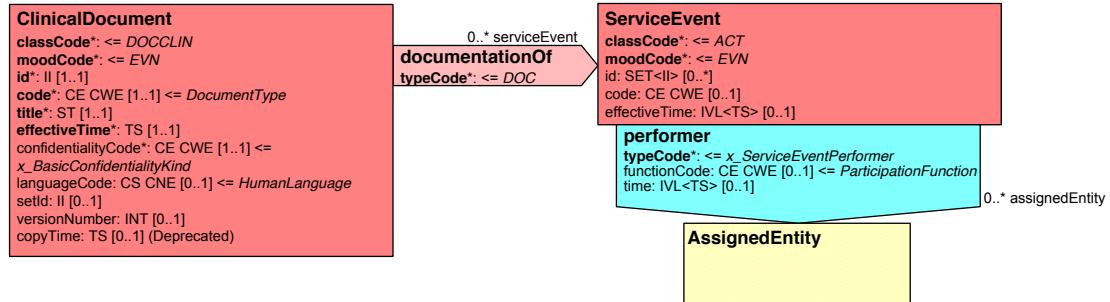
Figure 43: DIR `inFulfillmentOf` example

```
<inFulfillmentOf>
  <order>
    <id extension="10523475" root="2.16.840.1.113883.19.4.27"/>
    <!-- {root}.27= accession number list *-->
  </order>
</inFulfillmentOf>
```

4.3.1.7 DocumentationOf

Each `documentationOf/serviceEvent` indicates an imaging procedure that the provider describes and interprets in the content of the DIR. The main activity being described by this document is the interpretation of the imaging procedure. This is shown by setting the value of the `@classCode` attribute of the `serviceEvent` element to ACT, and indicating the duration over which care was provided in the `effectiveTime` element. Within each `documentationOf` element, there is one `serviceEvent` element. This event is the unit imaging procedure corresponding to a billable item. The type of imaging procedure may be further described in the `serviceEvent/code` element. This guide makes no specific recommendations about the vocabulary to use for describing this event.

Figure 44: DIR procedure context (CDA Header) illustration (non-normative)



In IHE Scheduled Workflow environments, one `serviceEvent/id` element contains the DICOM Study Instance UID from the Modality Worklist, and the second `serviceEvent/id` element contains the DICOM Requested Procedure ID from the Modality Worklist. These two ids are in a single `serviceEvent`.

The `effectiveTime` for the `serviceEvent` covers the duration of the imaging procedure being reported. This event should have one or more performers, which may participate at the same or different periods of time.

Service events map to DICOM Requested Procedures. That is, `documentationOf/serviceEvent/id` is the ID of the Requested Procedure.

8. **SHALL** contain exactly one [1..1] **documentationOf** ([CONF:8416](#)) such that it

- a. **SHALL** contain exactly one [1..1] **serviceEvent** (CONF:8431).
 - i. This serviceEvent **SHALL** contain exactly one [1..1] **@classCode="ACT"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8430).
 - ii. This serviceEvent **SHOULD** contain zero or more [0..*] **id** (CONF:8418).
 - iii. This serviceEvent **SHALL** contain exactly one [1..1] **code** (CONF:8419).
 - 1. The value of serviceEvent/code **SHALL NOT** conflict with the ClinicalDocument/code. When transforming from DICOM SR documents that do not contain a procedure code, an appropriate nullFlavor **SHALL** be used on serviceEvent/code. (CONF:8420).
 - iv. This serviceEvent **SHOULD** contain zero or more [0..*] **Physician Reading Study Performer** (templateId:2.16.840.1.113883.10.20.6.2.1) (CONF:8422).

Figure 45: DIR documentationOf example

```
<documentationOf>
  <serviceEvent classCode="ACT">
    <id root="1.2.840.113619.2.62.994044785528.114289542805"/>
    <!-- study instance UID -->
    <id extension="123453" root="1.2.840.113619.2.62.994044785528.26"/>
    <!-- DICOM Requested Procedure ID -->
    <code code="71020"
      displayName="Radiologic examination, chest, two views,
      frontal and lateral
      codeSystem="2.16.840.1.113883.6.12"
      codeSystemName="CPT4"/>
    <effectiveTime value="20060823222400"/>
    <performer typeCode="PRF">
      <templateId root="2.16.840.1.113883.10.20.6.2.1"/>
      <assignedEntity>
        <id extension="121008" root="2.16.840.1.113883.19.5"/>
        <code code="2085R0202X" codeSystem="2.16.840.1.113883.6.101"
          codeSystemName="NUCC"
          displayName="Diagnostic Radiology"/>
        <addr nullFlavor="NI"/>
        <telecom nullFlavor="NI"/>
        <assignedPerson>
          <name>
            <given>Christine</given>
            <family>Cure</family>
            <suffix>MD</suffix>
          </name>
        </assignedPerson>
      </assignedEntity>
    </performer>
  </serviceEvent>
</documentationOf>
```

4.3.1.8 RelatedDocument

A DIR may have three types of parent document:

- A superseded version that the present document wholly replaces (`typeCode = RPLC`). DIRs may go through stages of revision prior to being legally authenticated. Such early stages may be drafts from transcription, those created by residents, or other preliminary versions. Policies not covered by this specification may govern requirements for retention of such earlier versions. Except for forensic purposes, the latest version in a chain of revisions represents the complete and current report.
- An original version that the present document appends (`typeCode = APND`). When a DIR is legally authenticated, it can be amended by a separate addendum document that references the original.
- A source document from which the present document is transformed (`typeCode = XFRM`). A DIR may be created by transformation from a DICOM Structured Report (SR) document or from another DIR. An example of the latter case is the creation of a derived document for inclusion of imaging results in a clinical document.

9. **MAY** contain zero or one [0..1] **relatedDocument** (CONF:8432) such that it
 - a. When a Diagnostic Imaging Report has been transformed from a DICOM SR document, `relatedDocument/@typeCode` **SHALL** be XFRM, and `relatedDocument/parentDocument/id` **SHALL** contain the SOP Instance UID of the original DICOM SR document. (CONF:8433).
10. The `relatedDocument/id/@root` attribute **SHALL** be a syntactically correct OID, and **SHALL NOT** be a UUID. (CONF:10030).
 - a. OIDs **SHALL** be represented in dotted decimal notation, where each decimal number is either 0 or starts with a nonzero digit. More formally, an OID **SHALL** be in the form $([0-2])(.[1-9][0-9]^*|0))+$ (CONF:10031).
 - b. OIDs **SHALL** be no more than 64 characters in length. (CONF:10032).

Figure 46: DIR relatedDocument example

```
<!-- transformation of a DICOM SR -->
<relatedDocument typeCode="XFRM">
  <parentDocument>
    <id
      root="1.2.840.113619.2.62.994044785528.20060823.2006082322322.9"/>
      <!-- SOP Instance UID (0008,0018) of SR sample document-->
    </parentDocument>
  </relatedDocument>
```

4.3.1.9 ComponentOf

The `id` element of the `encompassingEncounter` represents the identifier for the encounter. When the diagnostic imaging procedure is performed in the context

of a hospital stay or an outpatient visit for which there is an Encounter Number, that number should be present as the ID of the encompassingEncounter.

The effectiveTime represents the time interval or point in time in which the encounter took place. The encompassing encounter might be that of the hospital or office visit in which the diagnostic imaging procedure was performed. If the effective time is unknown, a nullFlavor attribute can be used.

11. **MAY** contain zero or one [0..1] **componentOf** (CONF:8434).

- a. This componentOf, if present, **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:8449).
 - i. This encompassingEncounter **SHALL** contain at least one [1..*] **id** (CONF:8435).
 1. In the case of transformed DICOM SR documents, an appropriate null flavor **MAY** be used if the id is unavailable. (CONF:8436).
 - ii. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:8437).
 1. This effectiveTime **SHALL** contain exactly one [1..1] [US Realm Date and Time \(DT.US.FIELDED\)](#) (2.16.840.1.113883.10.20.22.5.3) (CONF:10133).
 - iii. This encompassingEncounter **MAY** contain zero or more [0..1] **responsibleParty** (CONF:8438).
 1. This responsibleParty, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:9407).
 - a. **SHOULD** contain zero or one [0..1] **assignedPerson** **OR** contain zero or one [0..1] **representedOrganization** (CONF:8439).
 - iv. This encompassingEncounter **SHOULD** contain zero or one [0..1] [Physician of Record Participant](#) (templateId:2.16.840.1.113883.10.20.6.2.2) (CONF:8448).

Figure 47: DIR componentOf example

```
<componentOf>
  <encompassingEncounter>
    <id extension="9937012" root="1.3.6.4.1.4.1.2835.12"/>
    <effectiveTime value="20060828170821"/>
    <encounterParticipant typeCode="ATND">
      <templateId root="2.16.840.1.113883.10.20.6.2.2"/>
      <assignedEntity>
        <id extension="4" root="2.16.840.1.113883.19"/>
        <code code="208D00000X" codeSystem="2.16.840.1.113883.6.101"
              codeSystemName="NUCC"
              displayName="General Practice"/>
        <addr nullFlavor="NI"/>
        <telecom nullFlavor="NI"/>
        <assignedPerson>
          <name>
            <prefix>Dr.</prefix>
            <given>Fay </given>
            <family>Family</family>
          </name>
        </assignedPerson>
      </assignedEntity>
    </encounterParticipant>
  </encompassingEncounter>
</componentOf>
```

4.3.1.10 Physician Reading Study Performer

[performer: templateId 2.16.840.1.113883.10.20.6.2.1(open)]

This participant is the Physician Reading Study Performer defined in documentationOf/serviceEvent and is usually different from the attending physician. The reading physician interprets the images and evidence of the study (DICOM Definition)

1. **SHALL** contain exactly one [1..1] @**typeCode**="PRF" Performer (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8424).
2. **SHALL** contain exactly one [1..1] **templateId/@root**="2.16.840.1.113883.10.20.6.2.1" (CONF:8423).
3. **MAY** contain zero or one [0..1] **time** (CONF:8425).
 - a. This time **SHALL** contain exactly one [1..1] **US Realm Date and Time (DTM.US.FIELDED)** (2.16.840.1.113883.10.20.22.5.4) (CONF:10134).
4. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:8426).
 - a. This assignedEntity SHALL contain at least one [1..*] id (CONF:10033).
 - i. The id SHOULD include zero or one [0..1] id where id/@root ="2.16.840.1.113883.4.6" National Provider Identifier (CONF:10034).
 - b. This assignedEntity **SHALL** contain exactly one [1..1] **code** (CONF:8427).

- i. **SHALL** contain a valid DICOM personal identification code sequence (@codeSystem is 1.2.840.10008.2.16.4) or an appropriate national health care provider coding system (e.g., NUCC in the U.S., where @codeSystem is 2.16.840.1.113883.6.101). (CONF:8428).
- c. Every assignedEntity element **SHALL** have at least one assignedPerson or representedOrganization. (CONF:8429).

Figure 48: Physician reading study performer example

```
<performer typeCode="PRF">
  <templateId root="2.16.840.1.113883.10.20.6.2.1"/>
  <assignedEntity>
    <id extension="111111111" root="2.16.840.1.113883.4.6"/>
    <code code="2085R0202X"
      codeSystem="2.16.840.1.113883.6.101"
      codeSystemName="NUCC"
      displayName="Diagnostic Radiology"/>
    <addr nullFlavor="NI"/>
    <telecom nullFlavor="NI"/>
    <assignedPerson>
      <name>
        <given>Christine</given>
        <family>Cure</family>
        <suffix>MD</suffix>
      </name>
    </assignedPerson>
  </assignedEntity>
</performer>
```

4.3.1.11 Physician of Record Participant

[encounterParticipant: templateId
2.16.840.1.113883.10.20.6.2.2(open)]

This encounterParticipant is the attending physician and is usually different from the Physician Reading Study Performer defined in documentationOf/serviceEvent.

1. **SHALL** contain exactly one [1..1] @typeCode="ATND" Attender (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8881).
2. **SHALL** contain exactly one [1..1]
templateId/@root="2.16.840.1.113883.10.20.6.2.2" (CONF:8440).
3. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:8886).
 - a. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:8887).
 - i. The id **SHOULD** include zero or one [0..1] id where id/@root = "2.16.840.1.113883.4.6" National Provider Identifier (CONF:10035).
 - b. This assignedEntity **SHALL** contain exactly one [1..1] **code** (CONF:8888).

- i. **SHALL** contain a valid DICOM Organizational Role from DICOM CID 7452²¹ (Value Set 1.2.840.10008.6.1.516) (@codeSystem is 1.2.840.10008.2.16.4) or an appropriate national health care provider coding system (e.g., NUCC in the U.S., where @codeSystem is 2.16.840.1.113883.6.101) (CONF:8899).
- c. This assignedEntity **SHOULD** contain zero or one [0..1] **name** (CONF:8890).

Figure 49: Physician of record participant example

```
<encounterParticipant typeCode="ATND">
  <templateId root="2.16.840.1.113883.10.20.6.2.2"/>
  <assignedEntity>
    <id extension="44444444" root="2.16.840.1.113883.4.6"/>
    <code code="208D00000X"
      codeSystem="2.16.840.1.113883.6.101"
      codeSystemName="NUCC"
      displayName="General Practice"/>
    <addr nullFlavor="NI"/>
    <telecom nullFlavor="NI"/>
    <assignedPerson>
      <name>
        <prefix>Dr.</prefix>
        <given>Fay</given>
        <family>Family</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</encounterParticipant>
```

²¹ DICOM Part 16 (NEMA PS3.16), page 631 in the 2011 edition. See ftp://medical.nema.org/medical/dicom/2011/11_16pu.pdf

4.3.2 DIR Body Constraints

The DIR supports both narrative sections and sections requiring coded clinical statements. The required and optional sections are listed in the [Document Types and Required/Optional Sections](#) table.

The following table shows relationships among the constrained templates in the body of a DIR report.

Table 26: Template Containment for Constrained DIR Sections

Template Title	Template Type	templateId
Diagnostic Imaging Report	document	2.16.840.1.113883.10.20.22.1.5
Fetus Subject Context	section	2.16.840.1.113883.10.20.6.2.3
Findings Section (DIR)	section	2.16.840.1.113883.10.20.6.1.2
Observer Context	section	2.16.840.1.113883.10.20.6.2.4
Physician of Record Participant	unspecified	2.16.840.1.113883.10.20.6.2.2
Physician Reading Study Performer	unspecified	2.16.840.1.113883.10.20.6.2.1
Procedure Context	entry	2.16.840.1.113883.10.20.6.2.5
DICOM Object Catalog Section - DCM 121181	section	2.16.840.1.113883.10.20.6.1.1
Study Act	entry	2.16.840.1.113883.10.20.6.2.6
Series Act	entry	2.16.840.1.113883.10.20.22.4.63
SOP Instance Observation	entry	2.16.840.1.113883.10.20.6.2.8
Purpose of Reference Observation	entry	2.16.840.1.113883.10.20.6.2.9
Referenced Frames Observation	entry	2.16.840.1.113883.10.20.6.2.10
Boundary Observation	entry	2.16.840.1.113883.10.20.6.2.11

4.3.2.1 DIR Section Constraints

The Section Type codes used by DIR are described below in the [DIR Section Type Codes](#) table. All section codes shown in this table describe narrative document sections²². The column headings of this table are:

DCM Code:	The code of the section in DICOM (Context Group CID 7001)
DCM Code Meaning:	The display name of the section in DICOM (Context Group CID 7001)
LOINC Code:	The code of the section in LOINC
LOINC Component Name:	The display name of the section in LOINC

²² SCALE_TYP = 'NAR' in the LOINC tables.

Use:

The use column indicates that a section in a Diagnostic Imaging Report is:

- R –required
- C –conditionally required
- O –optional

Table 27: DIR Section Type Codes

DICOM Code	DICOM Code Meaning	LOINC Code	LOINC Code Meaning	Use
121181	DICOM Object Catalog	N/A	N/A	C
121060	History	11329-0	HISTORY GENERAL	O
121062	Request	55115-0	REQUESTED IMAGING STUDIES INFORMATION	O
121064	Current Procedure Descriptions	55111-9	CURRENT IMAGING PROCEDURE DESCRIPTIONS	O
121066	Prior Procedure Descriptions	55114-3	PRIOR IMAGING PROCEDURE DESCRIPTIONS	O
121068	Previous Findings	18834-2	RADIOLOGY COMPARISON STUDY - OBSERVATION	O
121070	Findings (DIR)	18782-3	RADIOLOGY STUDY OBSERVATION	R
121072	Impressions	19005-8	RADIOLOGY - IMPRESSION	O
121074	Recommendations	18783-1	RADIOLOGY STUDY - RECOMMENDATION	O
121076	Conclusions	55110-1	CONCLUSIONS	O
121078	Addendum	55107-7	ADDENDUM	O
121109	Indications for Procedure	18785-6	RADIOLOGY REASON FOR STUDY	O
121110	Patient Presentation	55108-5	CLINICAL PRESENTATION	O
121113	Complications	55109-3	COMPLICATIONS	O
121111	Summary	55112-7	DOCUMENT SUMMARY	O
121180	Key Images	55113-5	KEY IMAGES	O

For Level 2 conformance, all section elements that are present in the Body of the document must have a code and some nonblank text or one or more subsections, even if the purpose of the text is only to indicate that information is unknown.

There is no equivalent to section/title in DICOM SR, so for a CDA to SR transformation, the section/code will be transferred and the title element will be dropped.

1. **SHALL** contain exactly one [1..1] **component** (CONF:14907).
 - a. A Diagnostic Imaging Report can have either a structuredBody or a nonXMLBody (CONF:14908).
 - i. A Diagnostic Imaging Report can conform to CDA Level 1 (nonXMLBody), CDA Level 2 (structuredBody with sections that contain a narrative block), or CDA Level 3

- (structuredBody containing sections that contain a narrative block and coded entries). In this template (templateId 2.16.840.1.113883.10.20.22.1.5), coded entries are optional (CONF:14909).
- b. If structuredBody, the component/structuredBody **SHALL** conform to the section constraints below (CONF:14910).
- i. The DICOM Object Catalog section (templateId 2.16.840.1.113883.10.20.6.1.1), if present, **SHALL** be the first section in the document Body (CONF:9408).
 - ii. **SHALL** contain exactly one [1..1] [Findings Section \(DIR\)](#) (templateId:2.16.840.1.113883.10.20.6.1.2) (CONF:9484).
 - iii. **SHOULD** contain zero or one [0..1] [DICOM Object Catalog Section - DCM 121181](#) (templateId:2.16.840.1.113883.10.20.6.1.1) (CONF:15141).
 - iv. With the exception of the DICOM Object Catalog (templateId 2.16.840.1.113883.10.20.6.1.1), all sections within the Diagnostic Imaging Report content **SHOULD** contain a title element (CONF:9409).
 - v. The section/code **SHOULD** be selected from LOINC or DICOM for sections not listed in the DIR Section Type Codes table (CONF:9410).
 1. Descriptions for sections is under development in DICOM in cooperation with the RSNA reporting initiative (CONF:9423).
 - vi. All sections defined in the DIR Section Type Codes table **SHALL** be top-level sections (CONF:9411).
 - vii. A section element **SHALL** have a code element, which **SHALL** contain a LOINC code or DCM code for sections that have no LOINC equivalent. This only applies to sections described in the DIR Section Type Codes table (CONF:9412).
 - viii. Apart from the DICOM Object Catalog (templateId 2.16.840.1.113883.10.20.6.1.1), all other instances of section **SHALL** contain at least one text element or one or more component elements (CONF:9413).
 - ix. All text or component elements **SHALL** contain content. text elements **SHALL** contain PCDATA or child elements, and component elements **SHALL** contain child elements (CONF:9414).
 - x. The text elements (and their children) **MAY** contain Web Access to DICOM Persistent Object (WADO) references to DICOM objects by including a linkHtml element where @href is a valid WADO URL and the text content of linkHtml is the visible text of the hyperlink (CONF:9415).

- xi. If clinical statements are present, the section/text **SHALL** represent faithfully all such statements and **MAY** contain additional text (CONF:9416).
- xii. **MAY** contain zero or more [0..*] [Procedure Context](#) (templateId:2.16.840.1.113883.10.20.6.2.5) (CONF:9417).
 - 1. If the service context of a section is different from the value specified in documentationOf/serviceEvent, then the section **SHALL** contain one or more entries containing Procedure Context (templateId 2.16.840.1.113883.10.20.6.2.5), which will reset the context for any clinical statements nested within those elements (CONF:9418).
- xiii. **MAY** contain zero or more [0..*] [Fetus Subject Context](#) (templateId:2.16.840.1.113883.10.20.6.2.3) (CONF:9419).
 - 1. If the subject of a section is a fetus, the section **SHALL** contain a subject element containing a Fetus Subject Context (templateId 2.16.840.1.113883.10.20.6.2.3) (CONF:9420).
- xiv. **MAY** contain zero or more [0..*] [Observer Context](#) (templateId:2.16.840.1.113883.10.20.6.2.4) (CONF:9421).
 - 1. : If the author of a section is different from the author(s) listed in the Header, an author element **SHALL** be present containing Observer Context (templateId 2.16.840.1.113883.10.20.6.2.4) (CONF:9422).

Figure 50: WADO reference using linkHtml example

```
<text>
  ...
  <paragraph>
    <caption>Source of Measurement</caption>
    <linkHtml
      href="http://www.example.org/wado?requestType=WADO&studyUID=1.2.840.1
      13619.2.62.994044785528.114289542805&seriesUID=1.2.840.113619.2.62.99
      4044785528.20060823223142485051&objectUID=1.2.840.113619.2.62.9940447
      85528.20060823.200608232232322.3&contentType=application/dicom">Chest
      _PA</linkHtml>
    </paragraph>
  ...
</text>
```

4.3.2.2 Fetus Subject Context

[relatedSubject: templateId 2.16.840.1.113883.10.20.6.2.3(open)]

For reports on mothers and their fetus(es), information on a mother is mapped to recordTarget, PatientRole, and Patient. Information on the fetus is mapped to

subject, relatedSubject, and SubjectPerson at the CDA section level. Both context information on the mother and fetus must be included in the document if observations on fetus(es) are contained in the document.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9189) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.6.2.3"` (CONF:10535).
2. **SHALL** contain exactly one [1..1] `code="121026"` (CodeSystem: DCM 1.2.840.10008.2.16.4) (CONF:9190).
3. **SHALL** contain exactly one [1..1] **subject** (CONF:9191).
4. **SHALL** contain exactly one [1..1] **name** (CONF:9192).
 - a. The name element is used to store the DICOM fetus ID, typically a pseudonym such as fetus_1 (CONF:9193).

Figure 51: Fetus subject context example

```
<relatedSubject>
  <templateId root="2.16.840.1.113883.10.20.6.2.3"/>
  <code code="121026"
    codeSystem="1.2.840.10008.2.16.4"
    displayName="Fetus"/>
  <subject>
    <name>fetus_1</name>
  </subject>
</relatedSubject>
```

4.3.2.3 Observer Context

[assignedAuthor: templateId 2.16.840.1.113883.10.20.6.2.4 (open)]

The Observer Context is used to override the author specified in the CDA Header. It is valid as a direct child element of a section.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9194) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.6.2.4"` (CONF:10536).
2. **SHALL** contain exactly one [1..1] **assignedAuthor** (CONF:9195).
3. **SHALL** contain at least one [1..*] **id** (CONF:9196).
 - a. The id element contains the author's id or the DICOM device observer UID (CONF:9197).
4. Either assignedPerson or assignedAuthoringDevice **SHALL** be present (CONF:9198).

Figure 52: Observer context example

```
<assignedAuthor>
  <templateId root="2.16.840.1.113883.10.20.6.2.4"/>
  <id extension="121008" root="2.16.840.1.113883.19.5"/>
  <assignedPerson>
    <name>
      <given>Richard</given>
      <family>Blitz</family>
      <suffix>MD</suffix>
    </name>
  </assignedPerson>
</assignedAuthor>
```

4.3.2.4 DIR Clinical Statements

A Diagnostic Imaging Report may contain CDA entries that represent, in coded form findings, image references, annotation, and numeric measurements based on DICOM Basic Diagnostic Imaging Report (Template 2000) and Transcribed Diagnostic Imaging Report (Template 2005). Most of the constraints for this document have been inherited from the DICOM PS 3.20 “Transformation of DICOM to and from HL7 Standards”.

This document type and the companion DICOM PS 3.20 “Transformation of DICOM to and from HL7 Standards” guide further constrain the transformation because image Spatial Coordinates region of interest (SCOORD) for linear, area, and volume measurements are not encoded in the CDA document. If it is desired to show images with such graphical annotations, the annotations should be encoded in DICOM Softcopy Presentation State objects that reference the image. Report applications that display referenced images and annotation should retrieve a rendered image using a WADO reference, including the image and Presentation State, or other DICOM retrieval and rendering methods. This approach avoids the risks of errors in registering a region of interest annotation with DICOM images.

DICOM Template 2000 defines imaging report documents that are comprised of a number of optional sections, including those defined above in [DIR Section Type Codes](#). Each section contains:

- [Text Observations](#) (Text Elements in DICOM SR), optionally inferred from Quantity Measurement Observation or Image references
- [Code Observations](#) (Code Elements in DICOM SR), optionally inferred from Quantity Measurement Observation or Image references
- [Quantity Measurement Observation](#) (Numeric Elements in DICOM SR) with a coded measurement type, optionally inferred from an image reference
- [Service Object Pair \(SOP\) Instance Observations](#) containing image references

The number or order of the observations and image references in the above bullet points are not constrained in a section.

4.4 Discharge Summary

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.8 (open)]

The Discharge Summary is a document that is a synopsis of a patient's admission to a hospital; it provides pertinent information for the continuation of care following discharge. The Joint Commission requires the following information to be included in the Discharge Summary²³:

- The reason for hospitalization
- The procedures performed
- The care, treatment, and services provided
- The patient's condition and disposition at discharge
- Information provided to the patient and family
- Provisions for follow-up care

4.4.1 Discharge Summary Header Constraints

The Discharge Summary must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant Discharge Summaries.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9479) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.1"` (CONF:10043).

4.4.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level **templateId** asserting conformance with specific constraints of a Discharge Summary as well as the **templateId** for the US Realm Clinical Document Header template.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8463) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.8"` (CONF:10044).

Figure 53: Discharge summary ClinicalDocument/templateId example

```
<!-- indicates conformance with Clinical Document Header Constraints -->
<templateId root="2.16.840.1.113883.10.20.3"/>
<!-- indicates conformance to Discharge Summary -->
<templateId root="2.16.840.1.113883.10.20.22.1.8"/>
```

²³ Joint Commission Requirements for Discharge Summary (JCAHO IM.6.10 EP7). See http://www.jointcommission.org/NR/rdonlyres/C9298DD0-6726-4105-A007-FE2C65F77075/0/CMS_New_Revised_HAP_FINAL_withScoring.pdf.

4.4.1.2 ClinicalDocument/code

The [Discharge Summary LOINC Document Codes](#) table shows the LOINC codes suitable for Discharge Summary, as of publication of this implementation guide. This is a dynamic value set meaning that these codes may be added to or deprecated by LOINC.

The Discharge Summary recommends use of a single document type code, 18842-5 "Discharge Summarization Note", with further specification provided by author or performer, setting, or specialty. Some of the LOINC codes listed here pre-coordinate the practice setting or the training or professional level of the author. Use of these codes is not recommended, as this duplicates information that may be present in the header. If used, the pre-coordinated codes must be consistent with the LOINC document type code.

3. **SHALL** contain exactly one [1..1] **code** (CONF:17178).
 - a. This code **SHALL** contain exactly one [1..1] @code, which **SHALL** be selected from ValueSet DischargeSummaryDocumentTypeCode 2.16.840.1.113883.11.20.4.1 **DYNAMIC** (CONF:17179).

Table 28: Discharge summary LOINC Document Codes

Value Set: DischargeSummaryDocumentTypeCode 2.16.840.1.113883.11.20.4.1 DYNAMIC Code System: LOINC 2.16.840.1.113883.6.1			
LOINC Code	Type of Service 'Component'	Setting 'System'	Specialty/Training/Professional Level 'Method_Type'
Preferred Code			
18842-5	Discharge summarization note	{Setting}	{Provider}
Additional Codes			
11490-0	Discharge summarization note	{Setting}	Physician
28655-9	Discharge summarization note	{Setting}	Attending physician
29761-4	Discharge summarization note	{Setting}	Dentistry
34745-0	Discharge summarization note	{Setting}	Nursing
34105-7	Discharge summarization note	Hospital	{Provider}
34106-5	Discharge summarization note	Hospital	Physician

Figure 54: Discharge summary ClinicalDocument/code example

```
<code codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC" code="18842-5"
      displayName="DISCHARGE SUMMARIZATION NOTE"/>
```

4.4.1.3 Participant

The participant element in the Discharge Summary header follows the General Header Constraints for participants. Discharge Summary does not specify any use for functionCode for participants. Local policies will determine how this element should be used in implementations.

4.4.1.4 ComponentOf

The Discharge Summary is always associated with a Hospital Admission using the encompassingEncounter element in the header.

The dischargeDispositionCode records the disposition of the patient at time of discharge. Access to the National Uniform Billing Committee (NUBC) code system requires a membership. The following conformance statement aligns with HITSP C80 requirements.

The responsibleParty element represents only the party responsible for the encounter, not necessarily the entire episode of care.

The encounterParticipant elements represent only those participants in the encounter, not necessarily the entire episode of care.

The admission date is recorded in the componentOf/encompassingEncounter/effectiveTime/low.

4. **SHALL** contain exactly one [1..1] **componentof** (CONF:8471).

- a. This componentOf **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:8472).
 - i. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime/low** (CONF:8473).
 - ii. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime/high** (CONF:8475).
 - iii. The dischargeDispositionCode **SHALL** be present where the value of code **SHOULD** be selected from ValueSet NUBC UB-04 FL17-Patient Status 2.16.840.1.113883.3.88.12.80.33 **DYNAMIC** (<http://www.nubc.org>) (CONF:8476).
 1. The dischargeDispositionCode, @displayName, or NUBC UB-04 Print Name, **SHALL** be displayed when the document is rendered. (CONF:8477).
- iv. The responsibleParty element **MAY** be present. If present, the responsibleParty/assignedEntity element **SHALL** have at least one assignedPerson or representedOrganization element present. (CONF:8479).
- v. The encounterParticipant elements **MAY** be present. If present, the encounterParticipant/assignedEntity element **SHALL** have at least one assignedPerson or representedOrganization element present. (CONF:8478).

Table 29: HL7 Discharge Disposition Codes

Code System: HL7 Discharge Disposition 2.16.840.1.113883.12.112	
Code	Print Name
01	Discharged to home or self care (routine discharge)
02	Discharged/transferred to another short-term general hospital for inpatient care
03	Discharged/transferred to skilled nursing facility (SNF)
04	Discharged/transferred to an intermediate-care facility (ICF)
05	Discharged/transferred to another type of institution for inpatient care or referred for outpatient services to another institution
06	Discharged/transferred to home under care of organized home health service organization
07	Left against medical advice or discontinued care
08	Discharged/transferred to home under care of Home IV provider
09	Admitted as an inpatient to this hospital
10 ...19	Discharge to be defined at state level, if necessary
20	Expired (i.e., dead)
21 ... 29	Expired to be defined at state level, if necessary
30	Still patient or expected to return for outpatient services (i.e., still a patient)
31 ... 39	Still patient to be defined at state level, if necessary (i.e., still a patient)
40	Expired (i.e., died) at home
41	Expired (i.e., died) in a medical facility; e.g., hospital, SNF, ICF, or free-standing hospice
42	Expired (i.e., died) - place unknown

Figure 55: Discharge summary componentOf example

```
<componentOf>
  <encompassingEncounter>
    <id extension="9937012" root="2.16.840.1.113883.19"/>
    <effectiveTime>
      <low value="20050329"/>
      <high value="20050329"/>
    </effectiveTime>
    <dischargeDispositionCode code="01"
      codeSystem="2.16.840.1.113883.12.112"
      displayName="Routine Discharge"
      codeSystemName="HL7 Discharge Disposition"/>
  </encompassingEncounter>
</componentOf>
```

4.4.2 Discharge Summary Body Constraints

The Discharge Summary supports both narrative sections and sections requiring code clinical statements. The required and optional sections are listed in the [Document Types and Required/Optional Sections](#) table. The table below the constraints shows all templates including entries within each section.

1. **SHALL** contain exactly one [1..1] **component** (CONF:9539).
 - a. A Discharge Summary can have either a structuredBody or a nonXMLBody. (CONF:9537).
 - i. A Discharge Summary can conform to CDA Level 1 (nonXMLBody), CDA Level 2 (structuredBody with sections that contain a narrative block), or CDA Level 3 (structuredBody containing sections that contain a narrative block and coded entries). In this template (templateId 2.16.840.1.113883.10.20.22.1.8), coded entries are optional. (CONF:9538).
 - b. If structuredBody, the component/structuredBody **SHALL** conform to the section constraints below. (CONF:9540).
 - i. **SHALL** contain exactly one [1..1] [Allergies Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.6) (CONF:9542).
 - ii. **SHALL** contain exactly one [1..1] [Hospital Course Section](#) (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.5) (CONF:9544).
 - iii. **SHALL** contain exactly one [1..1] [Hospital Discharge Diagnosis Section](#) (templateId:2.16.840.1.113883.10.20.22.2.24) (CONF:9546).
 - iv. **SHALL** contain exactly one [1..1] [Hospital Discharge Medications Section \(entries optional\)](#) (templateId:2.16.840.1.113883.10.20.22.2.11) (CONF:9548).
 - v. **SHALL** contain exactly one [1..1] [Plan of Care Section](#) (templateId:2.16.840.1.113883.10.20.22.2.10) (CONF:9550).
 - vi. **SHALL NOT** include a Chief Complaint and Reason for Visit Section with either a Chief Complaint Section or a Reason for Visit Section. (CONF:10055)
 - vii. **MAY** contain zero or one [0..1] [Chief Complaint Section](#) (templateId:1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1) (CONF:9554).
 - viii. **MAY** contain zero or one [0..1] [Chief Complaint and Reason for Visit Section](#) (templateId:2.16.840.1.113883.10.20.22.2.13) (CONF:9556).

- ix. **MAY** contain zero or one [0..1] [Discharge Diet Section](#)
 (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.33)
 (CONF:9558).
- x. **MAY** contain zero or one [0..1] [Family History Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.15)
 (CONF:9560).
- xi. **MAY** contain zero or one [0..1] [Functional Status Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.14)
 (CONF:9562).
- xii. **MAY** contain zero or one [0..1] [History of Past Illness Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.20)
 (CONF:9564).
- xiii. **MAY** contain zero or one [0..1] [History of Present Illness Section](#) (templateId: 1.3.6.1.4.1.19376.1.5.3.1.3.4)
 (CONF:9566).
- xiv. **MAY** contain zero or one [0..1] [Hospital Admission Diagnosis Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.43)
 (CONF:9928).
- xv. **MAY** contain zero or one [0..1] [Hospital Admission Medications Section \(entries optional\)](#)
 (2.16.840.1.113883.10.20.22.2.44) (CONF:10111).
- xvi. **MAY** contain zero or one [0..1] [Hospital Consultations Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.42)
 (CONF:9924).
- xvii. **MAY** contain zero or one [0..1] [Hospital Discharge Instructions Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.41)
 (CONF:9926).
- xviii. **MAY** contain zero or one [0..1] [Hospital Discharge Physical Section](#)
 (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.26)
 (CONF:9568).
- xix. **MAY** contain zero or one [0..1] [Hospital Discharge Studies Summary Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.16)
 (CONF:9570).
- xx. **MAY** contain zero or one [0..1] [Immunizations Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.2)
 (CONF:9572).
- xxi. **MAY** contain zero or one [0..1] [Problem Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.5)
 (CONF:9574).

- xxii. **MAY** contain zero or one [0..1] [Procedures Section](#)
[\(entries optional\)](#)
(templateId:2.16.840.1.113883.10.20.22.2.7)
(CONF:9576).
- xxiii. **MAY** contain zero or one [0..1] [Reason for Visit Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.12)
(CONF:9578).
- xxiv. **MAY** contain zero or one [0..1] [Review of Systems](#)
[Section](#) (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.18)
(CONF:9580).
- xxv. **MAY** contain zero or one [0..1] [Social History Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.17)
(CONF:9582).
- xxvi. **MAY** contain zero or one [0..1] [Vital Signs Section](#)
[\(entries optional\)](#)
(templateId:2.16.840.1.113883.10.20.22.2.4)
(CONF:9584).

The following table shows relationships among the templates in the body of a Discharge Summary.

Table 30: Template Containment for a Discharge Summary

Template Title	Template Type	templateId
Discharge Summary	document	2.16.840.1.113883.10.20.22.1.8
Allergies Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.6
Allergy Problem Act	entry	2.16.840.1.113883.10.20.22.4.30
Allergy - Intolerance Observation	entry	2.16.840.1.113883.10.20.22.4.7
Allergy Status Observation	entry	2.16.840.1.113883.10.20.22.4.28
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54

Template Title	Template Type	templateId
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Chief Complaint and Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.13
Chief Complaint Section	section	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
Discharge Diet Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.33
Family History Section	section	2.16.840.1.113883.10.20.22.2.15
Family History Organizer	entry	2.16.840.1.113883.10.20.22.4.45
Family History Observation	entry	2.16.840.1.113883.10.20.22.4.46
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Family History Death Observation	entry	2.16.840.1.113883.10.20.22.4.47
Functional Status Section	section	2.16.840.1.113883.10.20.22.2.14
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Cognitive Status Problem Observation	entry	2.16.840.1.113883.10.20.22.4.73
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Cognitive Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.74
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Cognitive Status Result Organizer	entry	2.16.840.1.113883.10.20.22.4.75

Template Title	Template Type	templateId
Cognitive Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.74
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Functional Status Problem Observation	entry	2.16.840.1.113883.10.20.22.4.68
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Functional Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.67
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Functional Status Result Organizer	entry	2.16.840.1.113883.10.20.22.4.66
Functional Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.67
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
History of Past Illness Section	section	2.16.840.1.113883.10.20.22.2.20
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
History of Present Illness Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.4
Hospital Admission Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.43
Hospital Admission Diagnosis	entry	2.16.840.1.113883.10.20.22.4.34
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Hospital Admission Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.44
Admission Medication	entry	2.16.840.1.113883.10.20.22.4.36

Template Title	Template Type	templateId
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Hospital Consultations Section	section	2.16.840.1.113883.10.20.22.2.42
Hospital Course Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.5
Hospital Discharge Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.24
Hospital Discharge Diagnosis	entry	2.16.840.1.113883.10.20.22.4.33
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Hospital Discharge Instructions Section	section	2.16.840.1.113883.10.20.22.2.41
Hospital Discharge Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.11
Discharge Medication	entry	2.16.840.1.113883.10.20.22.4.35
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16

Template Title	Template Type	templateId
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Hospital Discharge Physical Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.26
Hospital Discharge Studies Summary Section	section	2.16.840.1.113883.10.20.22.2.16
Immunizations Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.2
Immunization Activity	entry	2.16.840.1.113883.10.20.22.4.52
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Immunization Refusal Reason	entry	2.16.840.1.113883.10.20.22.4.53
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54

Template Title	Template Type	templateId
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19

Template Title	Template Type	templateId
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Plan of Care Section	section	2.16.840.1.113883.10.20.22.2.10
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Plan of Care Activity Encounter	entry	2.16.840.1.113883.10.20.22.4.40
Plan of Care Activity Observation	entry	2.16.840.1.113883.10.20.22.4.44
Plan of Care Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.41
Plan of Care Activity Substance Administration	entry	2.16.840.1.113883.10.20.22.4.42
Plan of Care Activity Supply	entry	2.16.840.1.113883.10.20.22.4.43
Problem Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.5
Problem Concern Act (Condition)	entry	2.16.840.1.113883.10.20.22.4.3
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedures Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.7
Procedure Activity Act	entry	2.16.840.1.113883.10.20.22.4.12
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24

Template Title	Template Type	templateId
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Procedure Activity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.13
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54

Template Title	Template Type	templateId
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance	entry	2.16.840.1.113883.10.20.22.4.25

Template Title	Template Type	templateId
Administration		
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.12
Review of Systems Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.18
Social History Section	section	2.16.840.1.113883.10.20.22.2.17
Pregnancy Observation	entry	2.16.840.1.113883.10.20.15.3.8
Estimated Date of Delivery	entry	2.16.840.1.113883.10.20.15.3.1
Smoking Status Observation	entry	2.16.840.1.113883.10.22.4.78
Social History Observation	entry	2.16.840.1.113883.10.20.22.4.38
Vital Signs Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.4
Vital Signs Organizer	entry	2.16.840.1.113883.10.20.22.4.26
Vital Sign Observation	entry	2.16.840.1.113883.10.20.22.4.27

4.5 History and Physical (H&P) Note

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.3 (open)]

A History and Physical (H&P) Note is a medical report that documents the current and past conditions of the patient. It contains essential information that helps determine an individual's health status.

The first portion of the report is a current collection of organized information unique to an individual, typically supplied by the patient or their caregiver, about the current medical problem or the reason for the patient encounter. This information is followed by a description of any past or ongoing medical issues, including current medications and allergies. Information is also obtained about the patient's lifestyle, habits, and diseases among family members.

The next portion of the report contains information obtained by physically examining the patient and gathering diagnostic information in the form of laboratory tests, imaging, or other diagnostic procedures.

The report ends with the clinician's assessment of the patient's situation and the intended plan to address those issues.

A History and Physical Examination is required upon hospital admission as well as before operative procedures. An initial evaluation in an ambulatory setting is often documented in the form of an H&P Note.

4.5.1 H&P Note Header Constraints

The H&P Note must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant H&P Notes.

1. **SHALL** contain exactly one [1..1] **templateId**(CONF:9968) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.1"` (CONF:10045).

4.5.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level templateId asserting conformance with specific constraints of a H&P Note as well as the templateId for the US Realm Clinical Document Header template.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8283) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.3"` History and Physical Note (CONF:10046).

Figure 56: H&P ClinicalDocument/templateId example

```
<!-- indicates conformance with US Realm Clinical Document Header
template -->
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>
<!-- conforms to a H&P Note -->
<templateId root="2.16.840.1.113883.10.20.22.1.3"/>
```

4.5.1.2 ClinicalDocument/code

At publication time for this guide, H&P Note limits the ClinicalDocument/code to those codes shown in the [H&P LOINC Document Type Codes](#) table. Valid codes are those whose scale is DOC and whose type of service is some variation of History and Physical.

The H&P Note recommends use of a single document type code, 34117-2 "History & Physical", with further specification provided by author or performer, setting, or specialty. Some codes in the [H&P LOINC Document Type Codes](#) table are pre-coordinated with the practice setting or the training or professional level of the author. Use of these codes is not recommended, as this duplicates information potentially present with the header. When pre-coordinated codes are used, any coded values describing the author or performer of the service act or the practice setting must be consistent with the LOINC document type.

2. **SHALL** contain exactly one [1..1] **code** (CONF:17185).
 - a. This code **SHALL** contain exactly one [1..1] `@code`, which **SHALL** be selected from ValueSet `HPDocumentType`
`2.16.840.1.113883.1.11.20.22 DYNAMIC` (CONF:17186).

Table 31: H&P LOINC Document Type Codes

Value Set: HPDocumentType 2.16.840.1.113883.1.11.20.22 DYNAMIC Code System: LOINC 2.16.840.1.113883.6.1			
LOINC Code	Type of Service 'Component'	Setting 'System'	Specialty/Training/ Professional Level 'Method_Type'
Preferred Code			
34117-2	History & Physical		
Additional Codes			
11492-6	History & Physical	Hospital	
28626-0	History & Physical		Physician
34774-0	History & Physical		General surgery
34115-6	History & Physical	Hospital	Medical Student
34116-4	History & Physical	Nursing home	Physician
34095-0	Comprehensive History & Physical		
34096-8	Comprehensive History & Physical	Nursing home	
51849-8	Admission History & Physical		
47039-3	Admission History & Physical	Inpatient	
34763-3	Admission History & Physical		General medicine
34094-3	Admission History & Physical	Hospital	Cardiology
34138-8	Targeted History & Physical		

Figure 57: H&P ClinicalDocument/code example

```
<code codeSystem='2.16.840.1.113883.6.1'  
      codeSystemName='LOINC'  
      code='34117-2'  
      displayName='HISTORY and PHYSICAL' />
```

Figure 58: H&P use of translation to include local equivalents for document type

```
<code code='34117-2'  
      displayName='HISTORY and PHYSICAL'  
      codeSystem='2.16.840.1.113883.6.1'  
      codeSystemName='LOINC'>  
  <translation code='X-GISOE'  
    displayName='GI HISTORY and PHYSICAL'  
    codeSystem='2.16.840.1.113883.19' />  
</code>
```

4.5.1.3 Participant

The participant element in the H&P header follows the General Header Constraints for participants. H&P Note does not specify any use for functionCode for participants. Local policies will determine how this element should be used in implementations.

4.5.1.4 InFulfillmentOf

inFulfillmentOf elements describe the prior orders that are fulfilled (in whole or part) by the service events described in this document. For example, the prior order might be a referral and the H&P Note may be in partial fulfillment of that referral.

2. **MAY** contain zero or more [0..*] **inFulfillmentOf** (CONF:8336).
 - a. An inFulfillmentOf element records the prior orders that are fulfilled (in whole or part) by the service events described in this document. For example, the prior order might be a referral and this H&P Note may be in partial fulfillment of that referral. (CONF:8337).

4.5.1.5 ComponentOf

The H&P Note is always associated with an encounter.

The effectiveTime represents the time interval or point in time in which the encounter took place.

The encounterParticipant elements represent only those participants in the encounter, not necessarily the entire episode of care.

The responsibleParty element represents only the party responsible for the encounter, not necessarily the entire episode of care.

3. **SHALL** contain exactly one [1..1] **componentOf** (CONF:8338).
 - a. This componentOf **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:8339).
 - i. This encompassingEncounter **SHALL** contain exactly one [1..1] **id** (CONF:8340).
 - ii. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:8341).
 1. This effectiveTime **SHALL** contain exactly one [1..1] [US Realm Date and Time \(DT.US.FIELDED\)](#) (2.16.840.1.113883.10.20.22.5.3) (CONF:10135).
 - iii. This encompassingEncounter **MAY** contain zero or one [0..1] **location** (CONF:8344).
 - iv. This encompassingEncounter **MAY** contain zero or one [0..1] **responsibleParty** (CONF:8345).
 1. The responsibleParty element records only the party responsible for the encounter, not necessarily the entire episode of care. (CONF:8347).
 2. The responsibleParty element, if present, **SHALL** contain an assignedEntity element, which **SHALL**

- contain an assignedPerson element, a representedOrganization element, or both. (CONF:8348).
- v. This encompassingEncounter **MAY** contain zero or more [0..*] **encounterParticipant** (CONF:8342).
 - 1. The encounterParticipant element, if present, records only participants in the encounter, not necessarily in the entire episode of care. (CONF:8346).
 - 2. An encounterParticipant element, if present, **SHALL** contain an assignedEntity element, which **SHALL** contain an assignedPerson element, a representedOrganization element, or both. (CONF:8343).

Figure 59: H&P componentOf example

```
<componentOf>
  <encompassingEncounter>
    <id extension='9937012' root='2.16.840.1.113883.19' />
    <code codeSystem='2.16.840.1.113883.6.12' codeSystemName='CPT-4'
          code='99213' displayName='Evaluation and Management' />
    <effectiveTime>
      <low value='20050329' />
      <high value='20050329' />
    </effectiveTime>
  </encompassingEncounter>
</componentOf>
```

4.5.2 H&P Note Body Constraints

The H&P Note supports both narrative sections and sections requiring coded clinical statements. The required and optional sections are listed in the [Document Types and Required/Optional Sections](#) table. The table below the constraints shows all templates including entries within each section.

1. **SHALL** contain exactly one [1..1] **component** (CONF:8349).
 - a. A History and Physical document can have either a structuredBody or a nonXMLBody. (CONF:8350).
 - i. A History and Physical document can conform to CDA Level 1 (nonXMLBody), CDA Level 2 (structuredBody with sections that contain a narrative block), or CDA Level 3 (structuredBody containing sections that contain a narrative block and coded entries). In this template (templateId 2.16.840.1.113883.10.20.22.1.3), coded entries are optional. (CONF:8352).
 - b. If structuredBody, the component/structuredBody **SHALL** conform to the section constraints below (CONF:9597).
 - i. This section **SHALL** contain exactly one [1..1] [Allergies Section \(entries optional\)](#)

- (templateId:2.16.840.1.113883.10.20.22.2.6)
(CONF:9602).
- ii. **SHALL** include an Assessment and Plan Section, or an Assessment Section and a Plan Section. (CONF:9986).
 - iii. **SHALL NOT** include an Assessment/Plan Section when an Assessment Section and a Plan of Care Section are present. (CONF:10056)
 - iv. **MAY** contain zero or one [0..1] [Assessment Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.8)
(CONF:9605).
 - v. **MAY** contain zero or one [0..1] [Plan of Care Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.10)
(CONF:9607).
 - vi. **MAY** contain zero or one [0..1] [Assessment and Plan Section](#) (templateId:2.16.840.1.113883.10.20.22.2.9)
(CONF:9987).
 - vii. **SHALL** include a Chief Complaint and Reason for Visit Section, Chief Complaint Section, or a Reason for Visit Section. (CONF:9642).
 - viii. **SHALL NOT** include a Chief Complaint and Reason for Visit Section with either a Chief Complaint Section or a Reason for Visit Section. (CONF:10057)
 - ix. **MAY** contain zero or one [0..1] [Chief Complaint Section](#)
(templateId:1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1)
(CONF:9611).
 - x. **MAY** contain zero or one [0..1] [Chief Complaint and Reason for Visit Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.13)
(CONF:9613).
 - xi. **SHALL** contain exactly one [1..1] [Family History Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.15)
(CONF:9615).
 - xii. **SHALL** contain exactly one [1..1] [General Status Section](#)
(templateId:2.16.840.1.113883.10.20.2.5)
(CONF:9617).
 - xiii. **SHALL** contain exactly one [1..1] [History of Past Illness Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.20)
(CONF:9619).
 - xiv. **SHALL** contain exactly one [1..1] [Medications Section \(entries optional\)](#)
(templateId:2.16.840.1.113883.10.20.22.2.1)
(CONF:9623).
 - xv. **SHALL** contain exactly one [1..1] [Physical Exam Section](#)
(templateId:2.16.840.1.113883.10.20.2.10)
(CONF:9625).

- xvi. **SHALL** contain exactly one [1..1] [Reason for Visit Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.12)
 (CONF:9627).
- xvii. **SHALL** contain exactly one [1..1] [Results Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.3)
 (CONF:9629).
- xviii. **SHALL** contain exactly one [1..1] [Review of Systems Section](#)
 (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.18)
 (CONF:9631).
- xix. **SHALL** contain exactly one [1..1] [Social History Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.17)
 (CONF:9633).
- xx. **SHALL** contain exactly one [1..1] [Vital Signs Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.4)
 (CONF:9635).
- xi. **SHOULD** contain exactly one [1..1] [History of Present Illness Section](#) (templateId:
 1.3.6.1.4.1.19376.1.5.3.1.3.4) (CONF:9621).
- xxii. **MAY** contain zero or one [0..1] [Immunizations Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.2)
 (CONF:9637).
- xxiii. **MAY** contain zero or one [0..1] [Instructions Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.45)
 (CONF:16807).
- xxiv. **MAY** contain zero or one [0..1] [Problem Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.5)
 (CONF:9639).
- xxv. **MAY** contain zero or one [0..1] [Procedures Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.7)
 (CONF:9641).

The following table shows relationships among the templates in the body of an H&P Note.

Table 32: Template Containment for an H&P Note

Template Title	Template Type	templateId
<u>History and Physical</u>	document	2.16.840.1.113883.10.20.22.1.3
<u>Allergies Section (entries optional)</u>	section	2.16.840.1.113883.10.20.22.2.6
<u>Allergy Problem Act</u>	entry	2.16.840.1.113883.10.20.22.4.30
<u>Allergy - Intolerance Observation</u>	entry	2.16.840.1.113883.10.20.22.4.7
<u>Allergy Status Observation</u>	entry	2.16.840.1.113883.10.20.22.4.28

Template Title	Template Type	templateId
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication	entry	2.16.840.1.113883.10.20.22.4.54

Template Title	Template Type	templateId
Information		
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Assessment and Plan Section	section	2.16.840.1.113883.10.20.22.2.9
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Assessment Section	section	2.16.840.1.113883.10.20.22.2.8
Chief Complaint and Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.13
Chief Complaint Section	section	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
Family History Section	section	2.16.840.1.113883.10.20.22.2.15
Family History Organizer	entry	2.16.840.1.113883.10.20.22.4.45
Family History Observation	entry	2.16.840.1.113883.10.20.22.4.46
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Family History Death Observation	entry	2.16.840.1.113883.10.20.22.4.47
General Status Section	section	2.16.840.1.113883.10.20.2.5
History of Past Illness Section	section	2.16.840.1.113883.10.20.22.2.20
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
History of Present Illness Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.4
Immunizations Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.2
Immunization Activity	entry	2.16.840.1.113883.10.20.22.4.52
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Immunization Refusal Reason	entry	2.16.840.1.113883.10.20.22.4.53
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20

Template Title	Template Type	templateId
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17

Template Title	Template Type	templateId
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.1
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8

Template Title	Template Type	templateId
Physical Exam Section	section	2.16.840.1.113883.10.20.2.10
Plan of Care Section	section	2.16.840.1.113883.10.20.22.2.10
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Plan of Care Activity Encounter	entry	2.16.840.1.113883.10.20.22.4.40
Plan of Care Activity Observation	entry	2.16.840.1.113883.10.20.22.4.44
Plan of Care Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.41
Plan of Care Activity Substance Administration	entry	2.16.840.1.113883.10.20.22.4.42
Plan of Care Activity Supply	entry	2.16.840.1.113883.10.20.22.4.43
Problem Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.5
Problem Concern Act (Condition)	entry	2.16.840.1.113883.10.20.22.4.3
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedures Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.7
Procedure Activity Act	entry	2.16.840.1.113883.10.20.22.4.12
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14

Template Title	Template Type	templateId
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Procedure Activity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.13
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16

Template Title	Template Type	templateId
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.12
Results Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.3
Result Organizer	entry	2.16.840.1.113883.10.20.22.4.1
Result Observation	entry	2.16.840.1.113883.10.20.22.4.2
Review of Systems Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.18
Social History Section	section	2.16.840.1.113883.10.20.22.2.17
Pregnancy Observation	entry	2.16.840.1.113883.10.20.15.3.8
Estimated Date of Delivery	entry	2.16.840.1.113883.10.20.15.3.1
Smoking Status Observation	entry	2.16.840.1.113883.10.22.4.78
Social History Observation	entry	2.16.840.1.113883.10.20.22.4.38
Vital Signs Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.4
Vital Signs Organizer	entry	2.16.840.1.113883.10.20.22.4.26
Vital Sign Observation	entry	2.16.840.1.113883.10.20.22.4.27

4.6 Operative Note

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.7 (open)]

The Operative Note is a frequently used type of procedure note with specific requirements set forth by regulatory agencies.

The Operative Note is created immediately following a surgical procedure and records the pre- and post-surgical diagnosis, pertinent events of the procedure, as well as the condition of the patient following the procedure. The report should be sufficiently detailed to support the diagnoses, justify the treatment, document the course of the procedure, and provide continuity of care.²⁴

4.6.1 Operative Note Header Constraints

The Operative Note must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant Operative Notes.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9914) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.1"` (CONF:10047).

4.6.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level templateId asserting conformance with specific constraints of an Operative Note as well as the templateId for the US Realm Clinical Document Header template.

The following asserts conformance to an Operative Note.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8483) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.7"` (CONF:10048).

Figure 60: Operative note ClinicalDocument/templateId example

```
<!-- indicates conformance with US Realm Clinical Document Header  
template -->  
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>  
<!-- conforms to the Operative Note requirements -->  
<templateId root='2.16.840.1.113883.10.20.22.1.7'>
```

4.6.1.2 ClinicalDocument/code

The [Surgical Operation Note LOINC Document Codes](#) table shows the LOINC codes suitable for Discharge Summary, as of publication of this implementation guide. This is a dynamic value set meaning that these codes may be added to or deprecated by LOINC.

²⁴

http://www.jointcommission.org/mobile/standards_information/jcfaqdetails.aspx?StandardsFAQId=215&StandardsFAQChapterId=13

The Operative Note recommends use of a single document type code, 11504-8 "Surgical Operation Note", with further specification provided by author or performer, setting, or specialty. Some of the LOINC codes in the [Surgical Operation Note LOINC Document Codes](#) table are pre-coordinated with the practice setting or the training or professional level of the author. Use of pre-coordinated codes is not recommended because of potential conflict with other information in the header. When these codes are used, any coded values describing the author or performer of the service act or the practice setting must be consistent with the LOINC document type.

3. **SHALL** contain exactly one [1..1] **code** (CONF:17187).

- a. This code **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet SurgicalOperationNoteDocumentTypeCode 2.16.840.1.113883.11.20.1.1 **DYNAMIC** (CONF:17188).

Table 33: Surgical Operation Note LOINC Document Codes

Value Set: SurgicalOperationNoteDocumentTypeCode 2.16.840.1.113883.11.20.1.1 DYNAMIC			
Code System: LOINC 2.16.840.1.113883.6.1			
LOINC Code	Type of Service 'Component'	Setting 'System'	Specialty/Training/Professional Level 'Method_Type'
Preferred Code			
11504-8	Surgical operation note	{Setting}	{Provider}
Additional Codes			
34137-0	Surgical operation note	Outpatient	{Provider}
28583-3	Surgical operation note	{Setting}	Dentistry
28624-5	Surgical operation note	{Setting}	Podiatry
28573-4	Surgical operation note	{Setting}	Physician
34877-1	Surgical operation note	{Setting}	Urology
34874-8	Surgical operation note	{Setting}	Surgery
34870-6	Surgical operation note	{Setting}	Plastic surgery
34868-0	Surgical operation note	{Setting}	Orthopedics
34818-5	Surgical operation note	{Setting}	Otorhinolaryngology
The following code should not be used; it is a duplicate			
34871-4	Surgical operation note	{Setting}	Podiatry

Figure 61: Operative note ClinicalDocument/code example

```
<code codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC" code="11504-8"
      displayName="SURGICAL OPERATION NOTE"/>
```

4.6.1.3 DocumentationOf

A serviceEvent represents the main act, such as a colonoscopy or an appendectomy, being documented. A serviceEvent can further specialize the act inherent in the ClinicalDocument/code, such as where the ClinicalDocument/code is simply "Surgical Operation Note" and the procedure is "Appendectomy." serviceEvent is required in the Operative Note and it must be equivalent to or further specialize the value inherent in the ClinicalDocument/code; it shall not conflict with the value inherent in the ClinicalDocument/code, as such a conflict would create ambiguity. serviceEvent/effectiveTime can be used to indicate the time the actual event (as opposed to the encounter surrounding the event) took place.

If the date and the duration of the procedure is known, serviceEvent/effectiveTime/low is used with a width element that describes the duration; no high element is used. However, if only the date is known, the date is placed in both the low and high elements.

4. **SHALL** contain at least one [1..*] **documentationOf** (CONF:8486).
 - a. Such documentationOf **SHALL** contain exactly one [1..1] **serviceEvent** (CONF:8493).
 - i. The value of Clinical Document /documentationOf/serviceEvent/code **SHALL** be from ICD9 CM Procedures (CodeSystem 2.16.840.1.113883.6.104), CPT-4 (CodeSystem 2.16.840.1.113883.6.12), or values descending from 71388002 (Procedure) from the SNOMED CT (CodeSystem 2.16.840.1.113883.6.96) ValueSet Procedure 2.16.840.1.113883.3.88.12.80.28 **DYNAMIC**. (CONF:8487).
 - ii. This serviceEvent **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:8494).
 1. This effectiveTime **SHALL** contain exactly one [1..1] **us Realm Date and Time (DT.US.FIELDED)**
(2.16.840.1.113883.10.20.22.5.3)
(CONF:10136).
 2. The serviceEvent/effectiveTime **SHALL** be present with effectiveTime/low (CONF:8488).
 3. If a width is not present, the serviceEvent/effectiveTime **SHALL** include effectiveTime/high. (CONF:10058)
 4. When only the date and the length of the procedure are known a width element **SHALL** be present and the

serviceEvent/effectiveTime/high **SHALL** not be present. (CONF:10060).

The performer represents clinicians who actually and principally carry out the serviceEvent. Typically, these are clinicians who have surgical privileges in their institutions such as Surgeons, Obstetrician/Gynecologists, and Family Practice Physicians. The performer may also be Nonphysician Providers (NPP) who have surgical privileges. There may be more than one primary performer in the case of complicated surgeries. There are occasionally co-surgeons. Usually they will be billing separately and will each dictate their own notes. An example may be spinal surgery , where a general surgeon and an orthopedic surgeon both are present and billing off the same Current Procedural Terminology (CPT) codes. Typically two Operative Notes are generated; however, each will list the other as a co-surgeon.

iii. This serviceEvent **SHALL** contain exactly one [1..1] **performer** (CONF:8489) such that it

1. **SHALL** contain exactly one [1..1] @**typeCode**="PPRF" Primary performer (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8495).
2. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:10917).

- a. This assignedEntity **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE" (CONF:8490).
 - i. This code **SHOULD** contain exactly one [1..1] @**code**, which **SHOULD** be selected from ValueSet Provider Type 2.16.840.1.113883.3.88.12.3221.4 **DYNAMIC** (CONF:8491).

- b. Any assistants **SHALL** be identified and **SHALL** be identified as secondary performers (SPRF). (CONF:8512).

Table 34: Provider Type Value Set (excerpt)

Value Set: Provider Type 2.16.840.1.113883.3.88.12.3221.4 DYNAMIC		
Code System(s):	NUCC Health Care Provider Taxonomy 2.16.840.1.113883.6.101	
Description:	The Provider type vocabulary classifies providers according to the type of license or accreditation they hold or the service they provide. http://www.nucc.org/index.php?option=com_content&task=view&id=14&Itemid=40	
Code	Code System	Print Name
207L00000X	NUCC Health Care Provider Taxonomy	Anesthesiology
207X00000X	NUCC Health Care Provider Taxonomy	Orthopedic Surgery
207VG0400X	NUCC Health Care Provider Taxonomy	Gynecology
...		

Table 35: Procedure Codes from SNOMED CT

Value Set: Procedure 2.16.840.1.113883.3.88.12.80.28 DYNAMIC		
Code System(s):	SNOMED CT 2.16.840.1.113883.6.96	
Description:	SNOMED CT Procedure codes. Any code descending from 71388002 (Procedure) inclusive. https://uts.nlm.nih.gov/snomedctBrowser.html (requires sign-up)	
Code	Code System	Print Name
408816000	SNOMED CT	Artificial rupture of membranes
20050329	SNOMED CT	Laparoscopic Appendectomy
62013009	SNOMED CT	Ambulating patient
...		

Figure 62: Operative note serviceEvent example

```
<serviceEvent classCode="PROC">
  <code code="801460020"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT"
        displayName="Laparoscopic Appendectomy"/>
  <effectiveTime>
    <low value="201003292240"/>
    <width value="15" unit="m"/>
  </effectiveTime>
  ...
</serviceEvent>
```

Figure 63: Operative note performer example

```
<performer typeCode="PPRF">
  <assignedEntity>
    <id extension="1" root="2.16.840.1.113883.19"/>
    <code code="2086S0120X" codeSystem="2.16.840.1.113883.6.101"
      codeSystemName="NUCC" displayName="Pediatric Surgeon"/>
    <addr>
      <streetAddressLine>1013 Healthcare Drive</streetAddressLine>
      <city>Ann Arbor</city>
      <state>MI</state>
      <postalCode>99999</postalCode>
      <country>US</country>
    </addr>
    <telecom value="tel: (555) 555-1013"/>
    <assignedPerson>
      <name>
        <prefix>Dr.</prefix>
        <given>Carl</given>
        <family>Cutter</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</performer>
```

4.6.2 Operative Note Body Constraints

The Operative Note supports both narrative sections and sections requiring coded clinical statements. The required and optional sections are listed in the [Document Types and Required/Optional Sections](#) table. The table below the constraints shows all templates including entries within each section.

1. **SHALL** contain exactly one [1..1] **component** (CONF:9585).
 - a. An Operative Note can have either a structuredBody or a nonXMLBody (CONF:9586).
 - i. An Operative Note can conform to CDA Level 1 (nonXMLBody), CDA Level 2 (structuredBody with sections that contain a narrative block), or CDA Level 3 (structuredBody containing sections that contain a narrative block and coded entries). In this template (templateId 2.16.840.1.113883.10.20.22.1.7), coded entries are optional. (CONF:9587).
 - b. If structuredBody, the component/structuredBody **SHALL** conform to the section constraints below (CONF:9596).
 - i. **SHALL** contain exactly one [1..1] [Anesthesia Section](#) (2.16.840.1.113883.10.20.22.2.25) (CONF:9883).
 - ii. **SHALL** contain exactly one [1..1] [Complications Section](#) (2.16.840.1.113883.10.20.22.2.37) (CONF:9885).
 - iii. **SHALL** contain exactly one [1..1] [Postoperative Diagnosis Section](#) (2.16.840.1.113883.10.20.22.2.35) (CONF:9913).

- iv. **SHALL** contain exactly one [1..1] [Preoperative Diagnosis Section](#) (2.16.840.1.113883.10.20.22.2.34) (CONF:9888).
- v. **SHALL** contain exactly one [1..1] [Procedure Estimated Blood Loss Section](#) (2.16.840.1.113883.10.20.18.2.9) (CONF:9890).
- vi. **SHALL** contain exactly one [1..1] [Procedure Findings Section](#) (2.16.840.1.113883.10.20.22.2.28) (CONF:9892).
- vii. **SHALL** contain exactly one [1..1] [Procedure Specimens Taken Section](#) (2.16.840.1.113883.10.20.22.2.31) (CONF:9894).
- viii. **SHALL** contain exactly one [1..1] [Procedure Description Section](#) (2.16.840.1.113883.10.20.22.2.27) (CONF:9896).
- ix. **MAY** contain zero or one [0..1] [Procedure Implants Section](#) (2.16.840.1.113883.10.20.22.2.40) (CONF:9898).
- x. **MAY** contain zero or one [0..1] [Operative Note Fluids Section](#) (2.16.840.1.113883.10.20.7.12) (CONF:9900).
- xi. **MAY** contain zero or one [0..1] [Operative Note Surgical Procedure Section](#) (2.16.840.1.113883.10.20.7.14) (CONF:9902).
- xii. **MAY** contain zero or one [0..1] [Plan of Care Section](#) (2.16.840.1.113883.10.20.22.2.10) (CONF:9904).
- xiii. **MAY** contain zero or one [0..1] [Planned Procedure Section](#) (2.16.840.1.113883.10.20.22.2.30) (CONF:9906).
- xiv. **MAY** contain zero or one [0..1] [Procedure Disposition Section](#) (2.16.840.1.113883.10.20.18.2.12) (CONF:9908).
- xv. **MAY** contain zero or one [0..1] [Procedure Indications Section](#) (2.16.840.1.113883.10.20.22.2.29) (CONF:9910).
- xvi. **MAY** contain zero or one [0..1] [Surgical Drains Section](#) (2.16.840.1.113883.10.20.7.13) (CONF:9912).

The following table shows relationships among the templates in the body of an Operative Note.

Table 36: Template Containment for an Operative Note

Template Title	Template Type	templateId
Operative Note	document	2.16.840.1.113883.10.20.22.1.7
Anesthesia Section	section	2.16.840.1.113883.10.20.22.2.25
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18

Template Title	Template Type	templateId
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Complications Section</u>	section	2.16.840.1.113883.10.20.22.2.37
<u>Problem Observation</u>	entry	2.16.840.1.113883.10.20.22.4.4
<u>Age Observation</u>	entry	2.16.840.1.113883.10.20.22.4.31
<u>Health Status Observation</u>	entry	2.16.840.1.113883.10.20.22.4.5
<u>Problem Status</u>	entry	2.16.840.1.113883.10.20.22.4.6
<u>Operative Note Fluids Section</u>	section	2.16.840.1.113883.10.20.7.12
<u>Operative Note Surgical Procedure Section</u>	section	2.16.840.1.113883.10.20.7.14
<u>Plan of Care Section</u>	section	2.16.840.1.113883.10.20.22.2.10
<u>Plan of Care Activity Act</u>	entry	2.16.840.1.113883.10.20.22.4.39
<u>Plan of Care Activity Encounter</u>	entry	2.16.840.1.113883.10.20.22.4.40
<u>Plan of Care Activity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.44
<u>Plan of Care Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.41
<u>Plan of Care Activity Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.42
<u>Plan of Care Activity Supply</u>	entry	2.16.840.1.113883.10.20.22.4.43
<u>Planned Procedure Section</u>	section	2.16.840.1.113883.10.20.22.2.30
<u>Plan of Care Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.41
<u>Postoperative Diagnosis Section</u>	section	2.16.840.1.113883.10.20.22.2.35
<u>Preoperative Diagnosis Section</u>	section	2.16.840.1.113883.10.20.22.2.34
<u>Preoperative Diagnosis</u>	entry	2.16.840.1.113883.10.20.22.4.65
<u>Problem Observation</u>	entry	2.16.840.1.113883.10.20.22.4.4

Template Title	Template Type	templateId
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedure Description Section	section	2.16.840.1.113883.10.20.22.2.27
Procedure Disposition Section	section	2.16.840.1.113883.10.20.18.2.12
Procedure Estimated Blood Loss Section	section	2.16.840.1.113883.10.20.18.2.9
Procedure Findings Section	section	2.16.840.1.113883.10.20.22.2.28
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedure Implants Section	section	2.16.840.1.113883.10.20.22.2.40
Procedure Indications Section	section	2.16.840.1.113883.10.20.22.2.29
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Procedure Specimens Taken Section	section	2.16.840.1.113883.10.20.22.2.31
Surgical Drains Section	section	2.16.840.1.113883.10.20.7.13

4.7 Procedure Note

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.6 (open)]

Procedure Note is a broad term that encompasses many specific types of non-operative procedures including interventional cardiology, interventional radiology, gastrointestinal endoscopy, osteopathic manipulation, and many other specialty fields. Procedure Notes are documents that are differentiated from Operative Notes in that the procedures documented do not involve incision or excision as the primary act.

The Procedure Note is created immediately following a non-operative procedure and records the indications for the procedure and, when applicable, post-procedure diagnosis, pertinent events of the procedure, and the patient's tolerance of the procedure. The document should be sufficiently detailed to justify the procedure, describe the course of the procedure, and provide continuity of care.

4.7.1 Procedure Note Header Constraints

The Procedure Note must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant Procedure Notes

1. **SHALL** contain exactly one [1..1] **templateId**/ (CONF:9969) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.1.1"** (CONF:10049).

4.7.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level templateId asserting conformance with specific constraints of a Procedure Note as well as the templateId for the US Realm Clinical Document Header template.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8496) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.1.6"` (CONF:10050).

Figure 64: Procedure note ClinicalDocument/templateId category I example

```
<!-- indicates conformance with US Realm Clinical Document Header  
template -->  
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>  
<templateId root= "2.16.840.1.113883.10.20.22.1.6"/>  
<!-- conforms to the Procedure Note constraints -->
```

4.7.1.2 ClinicalDocument/code

The Procedure Note limits document type codes to those codes listed in the [LOINC Codes for Procedure Note Documents](#). The tables lists all codes having the scale DOC (document) and a 'component' referring to a non-operative procedure, whether or not the text string "Procedure" is present.

The Procedure Note recommends use of a single document type code, 28570-0 "Procedure Note", with further specification provided by author or performer, setting, or specialty. Some of the LOINC codes in the [LOINC Codes for Procedure Note Documents](#) table are pre-coordinated with the practice setting or the training or professional level of the author. Use of pre-coordinated codes is not recommended because of potential conflict with other information in the header. When these codes are used, any coded values describing the author or performer of the service act or the practice setting must be consistent with the LOINC document type.

3. **SHALL** contain exactly one [1..1] **code** (CONF:17182).
 - a. This code **SHALL** contain exactly one [1..1] `@code`, which **SHALL** be selected from ValueSet ProcedureNoteDocumentTypeCodes 2.16.840.1.113883.11.20.6.1 **DYNAMIC** (CONF:17183).

Table 37: Procedure Note LOINC Document Type Codes

Value Set: ProcedureNoteDocumentTypeCodes 2.16.840.1.113883.11.20.6.1 DYNAMIC Code System: LOINC 2.16.840.1.113883.6.1			
LOINC Code	Type of Service 'Component'	Setting 'System'	Specialty/Training/Professional Level 'Method_Type'
Preferred Code			
28570-0	Procedure note	{Setting}	{Provider}
Additional Codes			
11505-5	Procedure note	{Setting}	Physician
18744-3	Study report	Respiratory system	Bronchoscopy
18745-0	Study report	Heart	Cardiac catheterization
18746-8	Study report	Lower GI tract	Colonoscopy
18751-8	Study report	Upper GI tract	Endoscopy
18753-4	Study report	Lower GI tract	Flexible sigmoidoscopy
18836-7	Procedure	Cardiac stress study	*
28577-5	Procedure note	{Setting}	Dentistry
28625-2	Procedure note	{Setting}	Podiatry
29757-2	Study report	Cvx/Vag	Colposcopy
33721-2	Bone marrow biopsy report	Bone mar	
34121-4	Interventional procedure note	{Setting}	
34896-1	Interventional procedure note	{Setting}	Cardiology
34899-5	Interventional procedure note	{Setting}	Gastroenterology
47048-4	Diagnostic interventional study report	{Setting}	Interventional radiology
48807-2	Bone marrow aspiration report	Bone mar	

Figure 65: Procedure note ClinicalDocument/code example

```
<code codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"
      code="28570-0"
      displayName="PROCEDURE NOTE"/>
```

4.7.1.3 ComponentOf

4. **SHOULD** contain zero or one [0..1] **componentOf/encompassingEncounter** (CONF:8499).
 - a. This componentOf/encompassingEncounter **SHALL** contain exactly one [1..1] **code** (CONF:8501).
 - b. This componentOf/encompassingEncounter **SHALL** contain at least one [1..*] **location/healthCareFacility/id** (CONF:8500).
 - c. This componentOf/encompassingEncounter **MAY** contain zero or one [0..1] **encounterParticipant** (CONF:8502) such that it
 - i. **SHALL** contain exactly one [1..1] **@typeCode="REF"** Referrer (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8503).

4.7.1.4 Generic Participant: Primary Care Provider

The participant element in the Procedure Note header follows the General Header Constraints for participants. The [Participant Scenarios](#) table shows a number of scenarios and the values for various participants.

5. **MAY** contain zero or more [0..*] **participant** (CONF:8504) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="IND"** Individual (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8505).
 - b. **SHALL** contain exactly one [1..1] **functionCode="PCP"** Primary Care Physician (CodeSystem: participationFunction 2.16.840.1.113883.5.88) (CONF:8506).
 - c. **SHALL** contain exactly one [1..1] **associatedEntity/@classCode="PROV"** Provider (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8507).
 - i. This associatedEntity/@classCode **SHALL** contain exactly one [1..1] **associatedPerson** (CONF:8508).

4.7.1.5 Participant Scenarios

Table 38: Participant Scenario

Scenario	Author	Custodian	Data Enterer	Encompassing Encounter/ Encounter Participant	Legal Authenticator	Participant	Service Event/ Performer
Colonoscopy Participant Scenario: A surgeon refers a patient to an endoscopist. A colonoscopy is performed at an outpatient surgery center. The endoscopist inputs information into an EHR. The outpatient surgery center EHR generates a Procedure Note to send to the Hospital EHR.							
Endoscopic CDA Procedure Note	Endoscopist	Out-patient surgery center	None	Surgeon [REF (referrer)]	Endoscopist	None	Endoscopist

Scenario	Author	Custodian	Data Enterer	Encompassing Encounter/Encounter Participant	Legal Authenticator	Participant	Service Event/Performer
Office Removal of Wart Participation Scenario: A wart is removed during an office visit. The PCP dictates the procedure into the local transcription system. The transcription system generates a CDA Procedure Note to the EHR.							
CDA Procedure Note	PCP	PCP office	Transcriptionist	None	PCP	None	PCP
Dental Procedure Participation Scenario: Dentist extracts a tooth after the patient has a cleaning by the hygienist. He enters the information into his Dental EHR.							
Procedure input to EHR	Dentist	Dentist office	Varies	None	Dentist	None	Dentist Hygienist
Transjugular Intrahepatic Portosystemic Shunt (TIPS) Procedure (Interventional Radiology) Participant Scenario: At a university hospital, a TIPS procedure is performed by the interventional radiology fellow, with the help of an interventional radiology nurse, under the supervision of an attending interventional radiologist. The radiology technician enters the data into the EMR. The patient was referred to the university hospital by his oncologist. The patient is insured by Cigna.							
Procedure Note is input in EHR	Interventional radiology fellow	Good Health Hospital	Interventional radiology technician	REF (referrer) Oncologist	Attending interventional radiologist	Cigna	Interventional radiology fellow Nurse Attending interventional radiologist
Lumbar Puncture (spinal tap) Procedure Participant Scenario: At a university hospital, a lumbar puncture is performed by a medical student, with the help of an intern, under the supervisory authority of an attending neurologist. The student performs the procedure and dictates the note. The note is signed by the intern and attending. The patient has a family doctor that is not participating in the procedure, did not refer the patient, and does not have privileges at the providing organization but is recorded in the note.							
Procedure Note is dictated by the medical student	Medical student	Good Health Hospital	Transcriptionist	None	Neurology attending (Intern is authenticator)	Family doctor	Medical student Intern

4.7.1.6 ServiceEvent

A serviceEvent is required in the Procedure Note to represent the main act, such as a colonoscopy or a cardiac stress study, being documented. It must be equivalent to or further specialize the value inherent in the ClinicalDocument/@code (such as where the ClinicalDocument/@code is simply "Procedure Note" and the procedure is "colonoscopy"), and it shall not

conflict with the value inherent in the ClinicalDocument/@code, as such a conflict would create ambiguity. A serviceEvent/effectiveTime element indicates the time the actual event (as opposed to the encounter surrounding the event) took place.

serviceEvent/effectiveTime may be represented two different ways in the Procedure Note. For accuracy to the second, the best method is effectiveTime/low together with effectiveTime/high. If a more general time, such as minutes or hours, is acceptable OR if the duration is unknown, an effectiveTime/low with a width element may be used. If the duration is unknown, the appropriate HL7 null value such as "NI" or "NA" must be used for the width element.

6. **SHALL** contain at least one [1..*] documentationOf (CONF:8510).

- a. Such documentationOf **SHALL** contain exactly one [1..1] serviceEvent (CONF:10061).
 - i. The value of Clinical Document /documentationOf/serviceEvent/code **SHALL** be from ICD9 CM Procedures (codeSystem 2.16.840.1.113883.6.104), CPT-4 (codeSystem 2.16.840.1.113883.6.12), or values descending from 71388002 (Procedure) from the SNOMED CT (codeSystem 2.16.840.1.113883.6.96) ValueSet [Procedure 2.16.840.1.113883.3.88.12.80.28 DYNAMIC](#). (CONF:8511).
 - ii. This serviceEvent **SHALL** contain exactly one [1..1] effectiveTime (CONF:10062).
 1. This effectiveTime **SHALL** contain exactly one [1..1] [us Realm Date and Time \(DT.US.FIELDED\)](#) (2.16.840.1.113883.10.20.22.5.3) (CONF:10063)
 2. The serviceEvent/effectiveTime **SHALL** be present with effectiveTime/low (CONF:8513).
 3. If a width is not present, the serviceEvent/effectiveTime **SHALL** include effectiveTime/high. (CONF:8514)
 4. When only the date and the length of the procedure are known a width element **SHALL** be present and the serviceEvent/effectiveTime/high **SHALL** not be present. (CONF:8515).

The performer participant represents clinicians who actually and principally carry out the serviceEvent. Typically, these are clinicians who have the appropriate privileges in their institutions such as gastroenterologists, interventional radiologists, and family practice physicians. Performers may also be non-physician providers (NPPs) who have other significant roles in the procedure such as a radiology technician, dental assistant, or nurse.

- iii. **SHALL** contain exactly one [1..1] performer (CONF:8520) such that it
 1. **SHALL** contain exactly one [1..1] @typeCode="PPRF" Primary Performer (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8521).

2. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:14911).

a. This assignedEntity **SHOULD** contain zero or one [0..1] **code** (CONF:14912).

i. The code, if present, **SHOULD** contain zero or one [0..1] @code, which **SHALL** be selected from ValueSet Healthcare Provider Taxonomy (NUCC - HIPAA) 2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:14913).

iv. Any assistants **SHALL** be identified and **SHALL** be identified as secondary performers (SPRF). (CONF:8524).

Table 39: Healthcare Provider Taxonomy Value Set

Value Set: Healthcare Provider Taxonomy (NUCC - HIPAA) 2.16.840.1.114222.4.11.1066 DYNAMIC		
Code System(s): NUCC Health Care Provider Taxonomy 2.16.840.1.113883.6.101		
Code	Code System	Print Name
122300000X	NUCC Health Care Provider Taxonomy	Dentist
124Q00000X	NUCC Health Care Provider Taxonomy	Dental Hygienist
126800000X	NUCC Health Care Provider Taxonomy	Dental Assistant/Tech
133V00000X	NUCC Health Care Provider Taxonomy	Dietitian, Registered
146L00000X	NUCC Health Care Provider Taxonomy	EMT/Paramedic
163W00000X	NUCC Health Care Provider Taxonomy	Registered Nurse
163WI0500X	NUCC Health Care Provider Taxonomy	IVT Team Staff
163WI0600X	NUCC Health Care Provider Taxonomy	Infection Control Professional
163WX0106X	NUCC Health Care Provider Taxonomy	Occupational Health Professional
164W00000X	NUCC Health Care Provider Taxonomy	Licensed Practical Nurse
167G00000X	NUCC Health Care Provider Taxonomy	Psychiatric Technician
183500000X	NUCC Health Care Provider Taxonomy	Pharmacist
207PE0004X	NUCC Health Care Provider Taxonomy	Other First Responder
227800000X	NUCC Health Care Provider Taxonomy	Respiratory Therapist/Tech
227900000X	NUCC Health Care Provider Taxonomy	Other Student
246QM0706X	NUCC Health Care Provider Taxonomy	Medical Technologist
246RP1900X	NUCC Health Care Provider Taxonomy	Phlebotomist/IV Team
247100000X	NUCC Health Care Provider Taxonomy	Radiologic Technologist
261QD0000X	NUCC Health Care Provider Taxonomy	Other Dental Worker
261QP2000X	NUCC Health Care Provider Taxonomy	Physical Therapist
261QR1100X	NUCC Health Care Provider Taxonomy	Researcher
332B00000X	NUCC Health Care Provider Taxonomy	Central Supply
363A00000X	NUCC Health Care Provider Taxonomy	Physician Assistant
363L00000X	NUCC Health Care Provider Taxonomy	Nurse Practitioner

Value Set: Healthcare Provider Taxonomy (NUCC - HIPAA) 2.16.840.1.114222.4.11.1066 DYNAMIC		
Code System(s): NUCC Health Care Provider Taxonomy 2.16.840.1.113883.6.101		
Code	Code System	Print Name
364SC1501X	NUCC Health Care Provider Taxonomy	Public Health Worker
367500000X	NUCC Health Care Provider Taxonomy	Nurse Anesthetist
367A00000X	NUCC Health Care Provider Taxonomy	Nurse Midwife
3747A0650X	NUCC Health Care Provider Taxonomy	Attendant/orderly
376K00000X	NUCC Health Care Provider Taxonomy	Nursing Assistant

Figure 66: Procedure note serviceEvent example

```
<serviceEvent classCode="PROC">
  <code code="118155006" codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Gastrointestinal tract endoscopy"/>
  <effectiveTime>
    <low value="201003292240" />
    <width value="15" unit="m"/>
  </effectiveTime>
  ...
</serviceEvent>
```

Figure 67: Procedure note serviceEvent example with null value in width element

```
<serviceEvent classCode="PROC">
  <code code="118155006" codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Gastrointestinal tract endoscopy"/>
  <effectiveTime>
    <low value="201003292240" />
    <width nullFlavor="NI"/>
  </effectiveTime>
  ...
</serviceEvent>
```

Figure 68: Procedure note performer example

```
<performer typeCode="PPRF">
  <assignedEntity>
    <id extension="IO00017" root="2.16.840.1.113883.19.5" />
    <code code="207RG0100X"
      codeSystem="2.16.840.1.113883.6.96"
      codeSystemName="NUCC"
      displayName="Gastroenterologist" />
    <addr>
      <streetAddressLine>1001 Hospital Lane</streetAddressLine>
      <city>Ann Arbor</city>
      <state>MI</state>
      <postalCode>99999</postalCode>
      <country>US</country>
    </addr>
    <telecom value="tel:(999) 555-1212" />
    <assignedPerson>
      <name>
        <prefix>Dr.</prefix>
        <given>Tony</given>
        <family>Tum</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</performer>
```

4.7.2 Procedure Note Body Constraints

The Procedure Note supports both narrative sections and sections requiring code clinical statements. The required and optional sections are listed in the [Document Types and Required/Optional Sections](#) table. The table below the constraints shows all templates including entries within each section.

1. **SHALL** contain exactly one [1..1] **component** (CONF:9588).
 - a. A Procedure Note can have either a structuredBody or a nonXMLBody (CONF:9589).
 - i. A Procedure Note can conform to CDA Level 1 (nonXMLBody), CDA Level 2 (structuredBody with sections that contain a narrative block), or CDA Level 3 (structuredBody containing sections that contain a narrative block and coded entries). In this template (templateId 2.16.840.1.113883.10.20.22.1.6), coded entries are optional. (CONF:9590).
 - b. If structuredBody, the component/structuredBody **SHALL** conform to the section constraints below (CONF:9595).
 - i. Each **section** **SHALL** have a **title** and the **title** **SHALL NOT** be empty (CONF:9937).
 - ii. **SHALL** include an Assessment and Plan Section, or an Assessment Section and a Plan Section. (CONF:9643).
 - iii. **SHALL NOT** include an Assessment/Plan Section when an Assessment Section and a Plan of Care Section are present. (CONF:10064)

- iv. **MAY** contain zero or one [0..1] [Assessment Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.8)
 (CONF:9645).
- v. **MAY** contain zero or one [0..1] [Plan of Care Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.10)
 (CONF:9647).
- vi. **MAY** contain zero or one [0..1] [Assessment and Plan Section](#) (templateId:2.16.840.1.113883.10.20.22.2.9)
 (CONF:9649).
- vii. **SHALL** contain exactly one [1..1] [Complications Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.37)
 (CONF:9802).
- viii. **SHALL** contain exactly one [1..1] [Postprocedure Diagnosis Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.36)
 (CONF:9850).
- ix. **SHALL** contain exactly one [1..1] [Procedure Description Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.27)
 (CONF:9805).
- x. **SHALL** contain exactly one [1..1] [Procedure Indications Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.29)
 (CONF:9807).
- xi. **MAY** contain zero or one [0..1] [Allergies Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.6)
 (CONF:9809).
- xii. **MAY** contain zero or one [0..1] [Anesthesia Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.25)
 (CONF:9811).
- xiii. **SHALL NOT** include a Chief Complaint and Reason for Visit Section with either a Chief Complaint Section or a Reason for Visit Section. (CONF:10065)
- xiv. **MAY** contain zero or one [0..1] [Chief Complaint Section](#)
 (templateId:1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1)
 (CONF:9813).
- xv. **MAY** contain zero or one [0..1] [Chief Complaint and Reason for Visit Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.13)
 (CONF:9815).
- xvi. **MAY** contain zero or one [0..1] [Family History Section](#)
 (templateId:2.16.840.1.113883.10.20.22.2.15)
 (CONF:9817).
- xvii. **MAY** contain zero or one [0..1] [History of Past Illness Section](#)

- (templateId:2.16.840.1.113883.10.20.22.2.20)
(CONF:9819).
- xviii. **MAY** contain zero or one [0..1] [History of Present Illness Section](#) (templateId: 1.3.6.1.4.1.19376.1.5.3.1.3.4) (CONF:9821).
- xix. **MAY** contain zero or one [0..1] [Medical \(General\) History Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.39)
(CONF:9823).
- xx. **MAY** contain zero or one [0..1] [Medications Section \(entries optional\)](#)
(templateId:2.16.840.1.113883.10.20.22.2.1)
(CONF:9825).
- xxi. **MAY** contain zero or one [0..1] [Medications Administered Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.38)
(CONF:9827).
- xxii. **MAY** contain zero or one [0..1] [Physical Exam Section](#)
(templateId:2.16.840.1.113883.10.20.2.10)
(CONF:9829).
- xxiii. **MAY** contain zero or one [0..1] [Planned Procedure Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.30)
(CONF:9831).
- xxiv. **MAY** contain zero or one [0..1] [Procedure Disposition Section](#)
(templateId:2.16.840.1.113883.10.20.18.2.12)
(CONF:9833).
- xxv. **MAY** contain zero or one [0..1] [Procedure Estimated Blood Loss Section](#)
(templateId:2.16.840.1.113883.10.20.18.2.9)
(CONF:9835).
- xxvi. **MAY** contain zero or one [0..1] [Procedure Findings Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.28)
(CONF:9837).
- xxvii. **MAY** contain zero or one [0..1] [Procedure Implants Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.40)
(CONF:9839).
- xxviii. **MAY** contain zero or one [0..1] [Procedure Specimens Taken Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.31)
(CONF:9841).
- xxix. **MAY** contain zero or one [0..1] [Procedures Section \(entries optional\)](#)
(templateId:2.16.840.1.113883.10.20.22.2.7)
(CONF:9843).

xxx. **MAY** contain zero or one [0..1] [Reason for Visit Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.12)
(CONF:9845).

xxxi. **MAY** contain zero or one [0..1] [Review of Systems Section](#)
(templateId:1.3.6.1.4.1.19376.1.5.3.1.3.18)
(CONF:9847).

xxxii. **MAY** contain zero or one [0..1] [Social History Section](#)
(templateId:2.16.840.1.113883.10.20.22.2.17)
(CONF:9849).

The following table shows relationships among the templates in the body of a Procedure Note.

Table 40: Template Containment for a Procedure Note

Template Title	Template Type	templateId
Procedure Note	document	2.16.840.1.113883.10.20.22.1.6
Allergies Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.6
Allergy Problem Act	entry	2.16.840.1.113883.10.20.22.4.30
Allergy - Intolerance Observation	entry	2.16.840.1.113883.10.20.22.4.7
Allergy Status Observation	entry	2.16.840.1.113883.10.20.22.4.28
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19

Template Title	Template Type	templateId
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Anesthesia Section	section	2.16.840.1.113883.10.20.22.2.25
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54

Template Title	Template Type	templateId
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Assessment and Plan Section</u>	section	2.16.840.1.113883.10.20.22.2.9
<u>Plan of Care Activity Act</u>	entry	2.16.840.1.113883.10.20.22.4.39
<u>Assessment Section</u>	section	2.16.840.1.113883.10.20.22.2.8

Template Title	Template Type	templateId
<u>Chief Complaint and Reason for Visit Section</u>	section	2.16.840.1.113883.10.20.22.2.13
<u>Chief Complaint Section</u>	section	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
<u>Complications Section</u>	section	2.16.840.1.113883.10.20.22.2.37
<u>Problem Observation</u>	entry	2.16.840.1.113883.10.20.22.4.4
<u>Age Observation</u>	entry	2.16.840.1.113883.10.20.22.4.31
<u>Health Status Observation</u>	entry	2.16.840.1.113883.10.20.22.4.5
<u>Problem Status</u>	entry	2.16.840.1.113883.10.20.22.4.6
<u>Family History Section</u>	section	2.16.840.1.113883.10.20.22.2.15
<u>Family History Organizer</u>	entry	2.16.840.1.113883.10.20.22.4.45
<u>Family History Observation</u>	entry	2.16.840.1.113883.10.20.22.4.46
<u>Age Observation</u>	entry	2.16.840.1.113883.10.20.22.4.31
<u>Family History Death Observation</u>	entry	2.16.840.1.113883.10.20.22.4.47
<u>History of Past Illness Section</u>	section	2.16.840.1.113883.10.20.22.2.20
<u>Problem Observation</u>	entry	2.16.840.1.113883.10.20.22.4.4
<u>Age Observation</u>	entry	2.16.840.1.113883.10.20.22.4.31
<u>Health Status Observation</u>	entry	2.16.840.1.113883.10.20.22.4.5
<u>Problem Status</u>	entry	2.16.840.1.113883.10.20.22.4.6
<u>History of Present Illness Section</u>	section	1.3.6.1.4.1.19376.1.5.3.1.3.4
<u>Medical (General) History Section</u>	section	2.16.840.1.113883.10.20.22.2.39
<u>Medications Administered Section</u>	section	2.16.840.1.113883.10.20.22.2.38
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9

Template Title	Template Type	templateId
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.1
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Physical Exam Section	section	2.16.840.1.113883.10.20.2.10
Plan of Care Section	section	2.16.840.1.113883.10.20.22.2.10
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Plan of Care Activity Encounter	entry	2.16.840.1.113883.10.20.22.4.40
Plan of Care Activity Observation	entry	2.16.840.1.113883.10.20.22.4.44
Plan of Care Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.41
Plan of Care Activity Substance Administration	entry	2.16.840.1.113883.10.20.22.4.42

Template Title	Template Type	templateId
Plan of Care Activity Supply	entry	2.16.840.1.113883.10.20.22.4.43
Planned Procedure Section	section	2.16.840.1.113883.10.20.22.2.30
Plan of Care Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.41
Postprocedure Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.36
Postprocedure Diagnosis	entry	2.16.840.1.113883.10.20.22.4.51
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedure Description Section	section	2.16.840.1.113883.10.20.22.2.27
Procedure Disposition Section	section	2.16.840.1.113883.10.20.18.2.12
Procedure Estimated Blood Loss Section	section	2.16.840.1.113883.10.20.18.2.9
Procedure Findings Section	section	2.16.840.1.113883.10.20.22.2.28
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Health Status Observation	entry	2.16.840.1.113883.10.20.22.4.5
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedure Implants Section	section	2.16.840.1.113883.10.20.22.2.40
Procedure Indications Section	section	2.16.840.1.113883.10.20.22.2.29
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Procedure Specimens Taken Section	section	2.16.840.1.113883.10.20.22.2.31
Procedures Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.7
Procedure Activity Act	entry	2.16.840.1.113883.10.20.22.4.12
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54

Template Title	Template Type	templateId
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Procedure Activity Observation	entry	2.16.840.1.113883.10.20.22.4.13
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32

Template Title	Template Type	templateId
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.12
Review of Systems Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.18
Social History Section	section	2.16.840.1.113883.10.20.22.2.17
Pregnancy Observation	entry	2.16.840.1.113883.10.20.15.3.8
Estimated Date of Delivery	entry	2.16.840.1.113883.10.20.15.3.1
Smoking Status Observation	entry	2.16.840.1.113883.10.22.4.78
Social History Observation	entry	2.16.840.1.113883.10.20.22.4.38

4.8 Progress Note

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.22.1.9 (open)]

A Progress Note documents a patient's clinical status during a hospitalization or outpatient visit; thus, it is associated with an encounter.

Taber's²⁵ medical dictionary defines a Progress Note as "An ongoing record of a patient's illness and treatment. Physicians, nurses, consultants, and therapists record their notes concerning the progress or lack of progress made by the patient between the time of the previous note and the most recent note."

Mosby's²⁶ medical dictionary defines a Progress Note as "Notes made by a nurse, physician, social worker, physical therapist, and other health care professionals that describe the patient's condition and the treatment given or planned."

A Progress Note is not a re-evaluation note. A Progress Note is not intended to be a Progress Report for Medicare. Medicare B Section 1833(e) defines the requirements of a Medicare Progress Report.

4.8.1 Progress Note Header Constraints

The Progress Note must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant Progress Notes.

1. **SHALL** contain exactly one [1..1] **templateId** / (CONF:9483) such that it
 - a. **SHALL** contain exactly one [1..1]
templateId/@root = "2.16.840.1.113883.10.20.22.1.1" (CONF:10051).

4.8.1.1 ClinicalDocument/templateId

Conformant documents must carry the document-level templateId asserting conformance with specific constraints of a Progress Note as well as the templateId for the US Realm Clinical Document Header template.

The following asserts conformance to a Progress Note.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7588) such that it
 - a. **SHALL** contain exactly one [1..1]
@root = "2.16.840.1.113883.10.20.22.1.9" (CONF:10052).

Figure 69: Progress note ClinicalDocument/templateId example

```
<!-- indicates conformance with US Realm Clinical Document Header  
template -->  
<templateId root="2.16.840.1.113883.10.20.22.1.1"/>  
<!-- conforms to the Progress Note -->  
<templateId root="2.16.840.1.113883.10.20.22.1.9"/>
```

²⁵ Taber's Cyclopedic Medical Dictionary, 21st Edition, F.A. Davis Company.

<http://www.tabers.com>

²⁶ Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier.

4.8.1.2 ClinicalDocument/code

The Progress Note limits document type codes to those codes listed in the [Progress Note LOINC Document Codes](#), as of publication of this implementation guide. This is a dynamic value set meaning that these codes may be added to or deprecated by LOINC. The table lists all codes that have the scale DOC (document) and a ‘component’ referring to “subsequent evaluation notes”.

The Progress Note recommends use of a single document type code, 11506-3 "Subsequent evaluation note", with further specification provided by author or performer, setting, or specialty. Some of the LOINC codes in the [Progress Note LOINC Document Codes](#) table are pre-coordinated with the practice setting or the training or professional level of the author. Use of pre-coordinated codes is not recommended because of potential conflict with other information in the header. When these pre-coordinated codes are used, any coded values describing the author or performer of the service act or the practice setting must be consistent with the LOINC document type. Note: The LOINC display name "Subsequent evaluation note" is equivalent to Progress Note.

3. **SHALL** contain exactly one [1..1] **code** (CONF:17189).

- a. This code **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet ProgressNoteDocumentTypeCode 2.16.840.1.113883.11.20.8.1 **DYNAMIC** (CONF:17190).

Table 41: Progress Note LOINC Document Codes

Value Set: ProgressNoteDocumentTypeCode 2.16.840.1.113883.11.20.8.1 DYNAMIC Code System: LOINC 2.16.840.1.113883.6.1			
LOINC Code	Type of Service 'Component'	Setting 'System'	Specialty/Training/Professional Level 'Method_Type'
Preferred Code			
11506-3	Subsequent evaluation note	{Setting}	{Provider}
Additional Codes			
18733-6	Subsequent evaluation note	{Setting}	Attending physician
18762-5	Subsequent evaluation note	{Setting}	Chiropractor
28569-2	Subsequent evaluation note	{Setting}	Consulting physician
28617-9	Subsequent evaluation note	{Setting}	Dentistry
34900-1	Subsequent evaluation note	{Setting}	General medicine
34904-3	Subsequent evaluation note	{Setting}	Mental health
18764-1	Subsequent evaluation note	{Setting}	Nurse practitioner
28623-7	Subsequent evaluation note	{Setting}	Nursing
11507-1	Subsequent evaluation note	{Setting}	Occupational therapy
11508-9	Subsequent evaluation note	{Setting}	Physical therapy
11509-7	Subsequent evaluation note	{Setting}	Podiatry
28627-8	Subsequent evaluation note	{Setting}	Psychiatry
11510-5	Subsequent evaluation note	{Setting}	Psychology
28656-7	Subsequent evaluation note	{Setting}	Social service
11512-1	Subsequent evaluation note	{Setting}	Speech therapy
34126-3	Subsequent evaluation note	Critical care unit	{Provider}
15507-7	Subsequent evaluation note	Emergency ...	{Provider}
34129-7	Subsequent evaluation note	Home health	{Provider}
34125-5	Subsequent evaluation note	Home health care	Case manager
34130-5	Subsequent evaluation note	Hospital	{Provider}
34131-3	Subsequent evaluation note	Outpatient	{Provider}
34124-8	Subsequent evaluation note	Outpatient	Cardiology
34127-1	Subsequent evaluation note	Outpatient	Dental hygienist
34128-9	Subsequent evaluation note	Outpatient	Dentistry
34901-9	Subsequent evaluation note	Outpatient	General medicine
34132-1	Subsequent evaluation note	Outpatient	Pharmacy

Figure 70: Progress note ClinicalDocument/code example

```
<code codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC" code="11056-3"
      displayName="Subsequent evaluation note"/>
<title>Progress Note</title>
```

4.8.1.3 DocumentationOf

A documentationOf can contain a serviceEvent to further specialize the act inherent in the ClinicalDocument/code.

In a Progress Note, a serviceEvent can represent the event of writing the Progress Note. The serviceEvent/effectiveTime is the time period the note documents.

4. **SHOULD** contain zero or one [0..1] **documentationOf** (CONF:7603).
 - a. **SHALL** contain exactly one [1..1] **serviceEvent/@classCode="PCPR"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7604).
 - i. **SHALL** contain exactly one [1..1] **templateId** (CONF:9480) such that it
 1. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.21.3.1"** (CONF:10068).
 - ii. **SHOULD** contain exactly one [1..1] **effectiveTime** (CONF:9481).
 1. The serviceEvent/effectiveTime **SHALL** contain exactly one [1..1] **US Realm Date and Time (DT.US.FIELDED)** (2.16.840.1.113883.10.20.22.5.3) (CONF:10137)
 2. The serviceEvent/effectiveTime element **SHOULD** be present with effectiveTime/low element (CONF:9482).
 3. If a width element is not present, the serviceEvent **SHALL** include effectiveTime/high (CONF:10066).

Figure 71: Progress note serviceEvent example

```
<documentationOf>
  <serviceEvent classCode="PCPR">
    <templateId root="2.16.840.1.113883.10.20.21.3.1"/>
    <effectiveTime>
      <low value="200503291200"/>
      <high value="200503291400"/>
    </effectiveTime>
    ...
  </serviceEvent>
</documentationOf>
```

4.8.1.4 ComponentOf

The Progress Note is always associated with an encounter by the componentOf/encompassingEncounter element in the header.

The effectiveTime element for an encompassingEncounter represents the time or time interval in which the encounter took place. A single encounter may contain multiple Progress Notes; hence the effectiveTime elements for a Progress Note (recorded in serviceEvent) and for an encounter (recorded in encompassingEncounter) represent different time intervals.

All visits take place at a specific location. When available, the location ID is included in the `encompassingEncounter/location/healthCareFacility/id` element.

5. **SHALL** contain exactly one [1..1] **componentOf** (CONF:7595).
 - a. This **componentOf** **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:7596).
 - i. This **encompassingEncounter** **SHALL** contain at least [1..*] **id** (CONF:7597).
 - ii. This **encompassingEncounter** **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:7598).
 1. This **effectiveTime** **SHALL** contain exactly one [1..1] **US Realm Date and Time (DT.US.FIELDED)**
(2.16.840.1.113883.10.20.22.5.3)
(CONF:10138).
 2. This **effectiveTime** **SHALL** contain exactly one [1..1] **low** (CONF:7599).
 - iii. This **encompassingEncounter** **SHALL** contain exactly one [1..1] **location/healthCareFacility/id** (CONF:7611).

Figure 72: Progress note componentOf example

```
<componentOf>
  <encompassingEncounter>
    <id extension="9937012" root="2.16.840.1.113883.19"/>
    <effectiveTime>
      <low value="20050329"/>
      <high value="20050329"/>
    </effectiveTime>
    <location>
      <healthCareFacility>
        <id root="2.16.540.1.113883.19.2"/>
      </healthCareFacility>
    </location>
  </encompassingEncounter>
</componentOf>
```

4.8.2 Progress Note Body Constraints

The Progress Note supports both narrative sections and sections requiring code clinical statements. The sections are listed in the table below and in the [Document Types and Required/Optional Sections](#) table. The table below the constraints shows all templates including entries within each section.

1. **SHALL** contain exactly one [1..1] **component** (CONF:9591).
 - a. A Progress Note can have either a `structuredBody` or a `nonXMLBody` (CONF:9592).
 - i. A Progress Note can conform to CDA Level 1 (`nonXMLBody`), CDA Level 2 (`structuredBody` with sections that contain a narrative block), or CDA Level 3 (`structuredBody` containing

- sections that contain a narrative block and coded entries). In this template (templateId 2.16.840.1.113883.10.20.22.1.9), coded entries are optional (CONF:9593).
- b. If structuredBody, the component/structuredBody **SHALL** conform to the section constraints below (CONF:9594).
- i. **SHALL** include an Assessment and Plan Section, or an Assessment Section and a Plan Section. (CONF:8704).
 - ii. **SHALL NOT** include an Assessment/Plan Section when an Assessment Section and a Plan of Care Section are present. (CONF:10069)
 - iii. **MAY** contain zero or one [0..1] Assessment Section (templateId:2.16.840.1.113883.10.20.22.2.8) (CONF:8776).
 - iv. **MAY** contain zero or one [0..1] Plan of Care Section (templateId:2.16.840.1.113883.10.20.22.2.10) (CONF:8775).
MAY contain zero or one [0..1] Assessment and Plan Section (templateId:2.16.840.1.113883.10.20.22.2.9) (CONF:8774).
 - v. **MAY** contain zero or one [0..1] Allergies Section (entries optional) (templateId:2.16.840.1.113883.10.20.22.2.6) (CONF:8773).
 - vi. **MAY** contain zero or one [0..1] Chief Complaint Section (templateId:1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1) (CONF:8772).
 - vii. **MAY** contain zero or one [0..1] Instructions Section (templateId:2.16.840.1.113883.10.20.22.2.45) (CONF:16806).
 - viii. **MAY** contain zero or one [0..1] Interventions Section (templateId:2.16.840.1.113883.10.20.21.2.3) (CONF:8778).
 - ix. **MAY** contain zero or one [0..1] Medications Section (entries optional) (templateId:2.16.840.1.113883.10.20.22.2.1) (CONF:8771).
 - x. **MAY** contain zero or one [0..1] Objective Section (templateId:2.16.840.1.113883.10.20.21.2.1) (CONF:8770).
 - xi. **MAY** contain zero or one [0..1] Physical Exam Section (templateId:2.16.840.1.113883.10.20.2.10) (CONF:8780).
 - xii. **MAY** contain zero or one [0..1] Problem Section (entries optional) (templateId:2.16.840.1.113883.10.20.22.2.5) (CONF:8786).

- xiii. **MAY** contain zero or one [0..1] [Results Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.3)
 (CONF:8782).
- xiv. **MAY** contain zero or one [0..1] [Review of Systems Section](#)
 (templateId:1.3.6.1.4.1.19376.1.5.3.1.3.18)
 (CONF:8788).
- xv. **MAY** contain zero or one [0..1] [Subjective Section](#)
 (templateId:2.16.840.1.113883.10.20.21.2.2)
 (CONF:8790).
- xvi. **MAY** contain zero or one [0..1] [Vital Signs Section \(entries optional\)](#)
 (templateId:2.16.840.1.113883.10.20.22.2.4)
 (CONF:8784).

The following table shows relationships among the templates in the body of a Progress Note.

Table 42: Template Containment for a Progress Note

Template Title	Template Type	templateId
<u>Progress Note</u>	document	2.16.840.1.113883.10.20.22.1.9
<u>Allergies Section (entries optional)</u>	section	2.16.840.1.113883.10.20.22.2.6
<u>Allergy Problem Act</u>	entry	2.16.840.1.113883.10.20.22.4.30
<u>Allergy - Intolerance Observation</u>	entry	2.16.840.1.113883.10.20.22.4.7
<u>Allergy Status Observation</u>	entry	2.16.840.1.113883.10.20.22.4.28
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Medication Activity</u>	entry	2.16.840.1.113883.10.20.22.4.16
<u>Drug Vehicle</u>	entry	2.16.840.1.113883.10.20.22.4.24
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20

Template Title	Template Type	templateId
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Assessment and Plan Section	section	2.16.840.1.113883.10.20.22.2.9
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Assessment Section	section	2.16.840.1.113883.10.20.22.2.8
Chief Complaint Section	section	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
Instructions Section	section	2.16.840.1.113883.10.20.21.2.45
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Interventions Section	section	2.16.840.1.113883.10.20.21.2.3
Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.1
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24

Template Title	Template Type	templateId
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Dispense</u>	entry	2.16.840.1.113883.10.20.22.4.18
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Medication Supply Order</u>	entry	2.16.840.1.113883.10.20.22.4.17
<u>Immunization Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.54
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Medication Information</u>	entry	2.16.840.1.113883.10.20.22.4.23
<u>Precondition for Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.25
<u>Reaction Observation</u>	entry	2.16.840.1.113883.10.20.22.4.9
<u>Procedure Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.14
<u>Indication</u>	entry	2.16.840.1.113883.10.20.22.4.19
<u>Instructions</u>	entry	2.16.840.1.113883.10.20.22.4.20
<u>Product Instance</u>	entry	2.16.840.1.113883.10.20.22.4.37
<u>Service Delivery Location</u>	entry	2.16.840.1.113883.10.20.22.4.32
<u>Severity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.8
<u>Objective Section</u>	section	2.16.840.1.113883.10.20.21.2.1
<u>Physical Exam Section</u>	section	2.16.840.1.113883.10.20.2.10
<u>Plan of Care Section</u>	section	2.16.840.1.113883.10.20.22.2.10
<u>Plan of Care Activity Act</u>	entry	2.16.840.1.113883.10.20.22.4.39
<u>Plan of Care Activity Encounter</u>	entry	2.16.840.1.113883.10.20.22.4.40
<u>Plan of Care Activity Observation</u>	entry	2.16.840.1.113883.10.20.22.4.44
<u>Plan of Care Activity Procedure</u>	entry	2.16.840.1.113883.10.20.22.4.41
<u>Plan of Care Activity Substance Administration</u>	entry	2.16.840.1.113883.10.20.22.4.42
<u>Plan of Care Activity Supply</u>	entry	2.16.840.1.113883.10.20.22.4.43
<u>Problem Section (entries optional)</u>	section	2.16.840.1.113883.10.20.22.2.5
<u>Problem Concern Act (Condition)</u>	entry	2.16.840.1.113883.10.20.22.4.3
<u>Problem Observation</u>	entry	2.16.840.1.113883.10.20.22.4.4
<u>Age Observation</u>	entry	2.16.840.1.113883.10.20.22.4.31
<u>Health Status Observation</u>	entry	2.16.840.1.113883.10.20.22.4.5
<u>Problem Status</u>	entry	2.16.840.1.113883.10.20.22.4.6

Template Title	Template Type	templateId
Results Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.3
Result Organizer	entry	2.16.840.1.113883.10.20.22.4.1
Result Observation	entry	2.16.840.1.113883.10.20.22.4.2
Review of Systems Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.18
Subjective Section	section	2.16.840.1.113883.10.20.21.2.2
Vital Signs Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.4
Vital Signs Organizer	entry	2.16.840.1.113883.10.20.22.4.26
Vital Sign Observation	entry	2.16.840.1.113883.10.20.22.4.27

4.9 Unstructured Document

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.21.1.10 (open)]

An unstructured document is a document which is used when the patient record is captured in an unstructured format that is encapsulated within an image file or as unstructured text in an electronic file such as a word processing or Portable Document Format (PDF) document.

There is a need to raise the level of interoperability for these documents to provide full access to the longitudinal patient record across a continuum of care. Until this gap is addressed, image and multi-media files will continue to be a portion of the patient record that remains difficult to access and share with all participants in a patient's care. The Unstructured Document type addresses this gap by providing consistent guidance on the use of CDA for such documents.

An Unstructured Document (UD) document type can (1) include unstructured content, such as a graphic, directly in a text element with a mediaType attribute, or (2) reference a single document file, such as a word-processing document, using a text/reference element.

For guidance on how to handle multiple files, on the selection of media types for this IG, and on the identification of external files, see the subsections which follow the constraints below.

IHE's XDS-SD (Cross-Transaction Specifications and Content Specifications, Scanned Documents Module) profile addresses a similar, more restricted use case, specifically for scanned documents or documents electronically created from existing text sources, and limits content to PDF-A or text. This Unstructured Documents implementation guide is applicable not only for scanned documents in non-PDF formats, but also for clinical documents produced through word processing applications, etc.

For conformance with both specifications, please review the appendix on [XDS-SD and US Realm Clinical Document Header Comparison](#) and ensure that your

documents at a minimum conform to all the **SHALL** constraints from either specification²⁷.

4.9.1 Unstructured Document Header Constraints

An Unstructured Document must conform to the US Realm Clinical Document Header. The following sections include additional header constraints for conformant Unstructured Documents.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9970) such that it
 - a. **SHALL** contain exactly one [1..1]
templateId/@root=*"2.16.840.1.113883.10.20.22.1.1"* (CONF:10053).

4.9.1.1 ClinicalDocument/templateId

Conformant Unstructured Documents must carry the document-level templateId asserting conformance with this guide.

2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7710) such that it
 - a. **SHALL** contain exactly one [1..1]
@root=*"2.16.840.1.113883.10.20.22.1.10"* (CONF:10054).

4.9.1.2 RecordTarget

The recordTarget element records the patient or patients whose health information is recorded in the Unstructured Documents instance. The following constraint is an addition to those in the US Realm Clinical Document Header.

3. **SHALL** contain exactly one [1..1] **recordTarget/patientRole/id** (CONF:7643).

4.9.1.3 Author

The author represents the person who created the original document.

If the referenced document is a scan, the person who did the scan must be recorded in dataEnterer.

The following constraints are in addition to those in the US Realm Clinical Document Header.

4. **SHALL** contain exactly one [1..1] **author/assignedAuthor** (CONF:7640).
 - a. This author/assignedAuthor **SHALL** contain exactly one [1..1] **addr** (CONF:7641).
 - b. This author/assignedAuthor **SHALL** contain exactly one [1..1] **telecom** (CONF:7642).

²⁷ Note that the Consolidation Project is providing a number of change requests to IHE. One of those recommendations should be the elimination of these discrepancies so that the IHE profile is a proper subset of this guide.

4.9.1.4 Custodian

The following constraints are in addition to those in the US Ream Header.

5. **SHALL** contain exactly one [1..1]
custodian/assignedCustodian/representedCustodianOrganization
(CONF:7645).
 - a. This
 custodian/assignedCustodian/representedCustodianOrganization
 SHALL contain exactly one [1..1] **id** (CONF:7648).
 - b. This
 custodian/assignedCustodian/representedCustodianOrganization
 SHALL contain exactly one [1..1] **name** (CONF:7649).
 - c. This
 custodian/assignedCustodian/representedCustodianOrganization
 SHALL contain exactly one [1..1] **telecom** (CONF:7650).
 - d. This
 custodian/assignedCustodian/representedCustodianOrganization
 SHALL contain exactly one [1..1] **addr** (CONF:7651).

4.9.2 Unstructured Document Body Constraints

An Unstructured Document must include a **nonXMLBody** component with a single **text** element. The **text** element can reference an external file using a **reference** element, or include unstructured content directly with a **mediaType** attribute.

The **nonXMLBody/text** element also has a "compression" attribute that can be used to indicate that the unstructured content was compressed before being Base64Encoded. At a minimum, a compression value of "DF" for the deflate compression algorithm (RFC 1951 [<http://www.ietf.org/rfc/rfc1951.txt>]) must be supported although it is not required that content be compressed.

6. **SHALL** contain exactly one [1..1] **component/nonXMLBody** (CONF:7620).
 - a. This **component/nonXMLBody** **SHALL** contain exactly one [1..1] **text** (CONF:7622).
 - i. The **text** element **SHALL** either contain a **reference** element with a **value** attribute, or have a representation attribute with the value of B64, a **mediaType** attribute, and contain the media content. (CONF:7623).
 1. The value of @mediaType, if present, **SHALL** be drawn from the value set 2.16.840.1.113883.11.20.7.1 SupportedFileFormats **STATIC** 20100512. (CONF:7624).

Table 43: Supported File Formats Value Set (Unstructured Documents)

Value Set: SupportedFileFormats 2.16.840.1.113883.11.20.7.1 STATIC 20100512	
Word Processing/Narrative Formats	Code
MSWord	application/msword*
PDF	application/pdf
Plain Text	text/plain
RTF Text	text/rtf
HTML	text/html
Graphic Formats	Code
GIF Image	image/gif
TIF Image	image/tiff
JPEG Image	image/jpeg
PNG Image	image/png

* The developers explicitly excluded newer versions of MSWord because they are well-formed, structured XML documents, which are not appropriate in an Unstructured Document. MSWord versions after 2007 have media type: application/vnd.openxmlformats-officedocument.wordprocessingml.document.

Figure 73: nonXMLBody example with embedded content

```
<component>
  <nonXMLBody>
    <text mediaType="text/rtf" representation="B64">e1xydGY...</text>
  </nonXMLBody>
</component>
```

Figure 74: nonXMLBody example with referenced content

```
<component>
  <nonXMLBody>
    <text>
      <reference value="UD_sample.pdf"/>
    </text>
  </nonXMLBody>
</component>
```

Figure 75: nonXMLBody example with compressed content

```
<component>
  <nonXMLBody>
    <text mediaType="text/rtf" representation="B64"
          compression="DF">dhUhkasd437hbjfQS7...</text>
  </nonXMLBody>
</component>
```

4.9.2.1 Multiple Files and File Packaging

If multiple files, such as several scanned files, constitute a single document, options include: use a CDA document type that has a `structuredBody`, use a multi-page/graphic file type such as PDF, or stitch the separate images into a single image.

For guidance on how to package a CDA Unstructured Document together with an unstructured document it references, see the [MIME Multipart/Related Messages](#) appendix.

4.9.2.2 Media Types Supported

The Unstructured Document model does not support all possible file formats and it excludes structured formats such as generic XML. The media types supported are commonly used within a healthcare setting as part of the patient record.

The CDA Data Types specification²⁸ provides an extensible value set of MIME (Multipurpose Internet Mail Extensions) media types that are supported by base CDA. Exclusions from and extensions to that list are discussed below.

Media type exclusions. This guide restricts usage of media types listed in the CDA Data Types specification. In the absence of a use case for a video format as part of the patient record, video formats are not included. However, an unstructured document can link to a video or other file format; for example, a Microsoft Word file can contain a link to a video.

Media type extensions. Although the CDA Data Types specification indicates that ‘application/msword’ should not be used, that format is very common in use cases that apply to Unstructured Documents, and this guide allows it. The usage applies only to documents in binary format; it is not appropriate for rich text format (RTF) which has a separate MIME type, or the .docx format, which is not currently recommended for use in an Unstructured Document.

Local policy. Some content formats—in particular, tagged-image file format (TIFF)—entail further complexity. While this guide allows TIFF because it is in common use, its variants introduce profound interoperability issues: local implementations would establish policy to ensure appropriate interoperability. Microsoft Word binary formats entail similar issues.

4.9.2.3 Identification of Referenced Files

The example code in this section and in the sample file use simple filenames with relative paths because they are easy to read as examples. However, simple filenames and relative paths can cause problems when files are moved among systems.

The hazard to be avoided can be illustrated as follows: Suppose an Unstructured Document that references a file "ekg.pdf" is transmitted to a receiver who places that Unstructured Document in a directory that already contains an Unstructured Document for another patient, which also references

²⁸ <http://www.hl7.org/v3ballot/html/infrastructure/datatypes/datatypes.htm>

a file "ekg.pdf". Now the patient header information for the transmitted document is associated with the ekg.pdf of the previously-existing document. Thus, the use of relative paths and simple filenames can pose a danger to patient safety.

The alternative of providing an absolute URL (Uniform Resource Locator) will fail if the URL is inaccessible; even within a single organization, machine identifiers may be mapped differently at different locations.

Therefore this guide, while it cannot specify business practices, recommends the use of unique names for referenced files.

One approach to generating a unique name is to construct it from the globally-unique document id (root and extension) concatenated to a locally unique reference for the external file. The following figure illustrates this technique used with a CDA document that has an id root 2.16.840.1.113883.19 and extension 999021.

Figure 76: Unique file reference example

```
<reference value="ref-2.16.840.1.113883.19-999021-ekg-1.pdf"/>
```

5 SECTION-LEVEL TEMPLATES

This section contains the section-level templates referenced by one or more of the document types of this consolidated guide. These templates describe the purpose of each section and the section-level constraints.

Section-level templates are always included in a document.

Each section-level template contains the following:

- Template metadata (e.g., templateId, etc.)
- Description and explanatory narrative
- LOINC section code
- Section title
- Requirements for a text element
- Entry-level template names and Ids for referenced templates (required and optional)

Narrative Text

The text element within the section stores the narrative to be rendered, as described in the CDA R2 specification²⁹, and is referred to as the CDA narrative block.

The content model of the CDA narrative block schema is hand crafted to meet requirements of human readability and rendering. The schema is registered as a MIME type (text/x-hl7-text+xml), which is the fixed media type for the text element.

As noted in the CDA R2 specification, the document originator is responsible for ensuring that the narrative block contains the complete, human readable, attested content of the section. Structured entries support computer processing and computation and are not a replacement for the attestable, human-readable content of the CDA narrative block. The special case of structured entries with an entry relationship of "DRIV" (is derived from) indicates to the receiving application that the source of the narrative block is the structured entries, and that the contents of the two are clinically equivalent.

As for all CDA documents—even when a report consisting entirely of structured entries is transformed into CDA—the encoding application must ensure that the authenticated content (narrative plus multimedia) is a faithful and complete rendering of the clinical content of the structured source data. As a general guideline, a generated narrative block should include the same human readable content that would be available to users viewing that content in the originating system. Although content formatting in the narrative block need not be identical to that in the originating system, the narrative block should use elements from the CDA narrative block schema to provide sufficient formatting to support

²⁹ HL7 Clinical Document Architecture, Release 2.0.

<http://www.hl7.org/v3ballot/html/infrastructure/cda/cda.htm>

human readability when rendered according to the rules defined in Section Narrative Block (§ 4.3.5) of the CDA R2 specification.

By definition, a receiving application cannot assume that all clinical content in a section (i.e., in the narrative block and multimedia) is contained in the structured entries unless the entries in the section have an entry relationship of "DRIV".

Additional specification information for the CDA narrative block can be found in the CDA R2 specification in sections 1.2.1, 1.2.3, 1.3, 1.3.1, 1.3.2, 4.3.4.2, and 6.

Required and Optional Sections

The table on [Sections and Required/Optional Document Types](#) summarizes the use and reuse of section-level templates across the document types. Note that the constraints for the entry templates themselves are contained in the [entry-level templates](#) section of this guide. The templates required for the Final Rules on Stage 1 Meaningful Use are noted by an "R" in the last column of the table.

Table 44: Sections and Required/Optional Document Types with Structured Body

Section Name	LOINC	templateId Coded Entries Required Coded Entries Optional	CCD	Consultation Note	Diagnostic Imaging Report	Discharge Summary	H&P Note	Operative Note	Procedure Note	Progress Note	Unstructured Document	Stage 1 Meaningful Use
Advance Directives	42348-3	(no coded entries required) 2.16.840.1.113883.10.20.22.2.21	O	-	-	-	-	-	-	-	*	
Addendum	55107-7		-	-	O	-	-	-	-	-	*	
Allergies	48765-2	2.16.840.1.113883.10.20.22.2.6.1 2.16.840.1.113883.10.20.22.2.6	R	O	-	R	R	-	O	O	*	R
Anesthesia	59774-0	(no coded entries required) 2.16.840.1.113883.10.20.22.2.25	-	-	-	-	-	R	O	-	*	
Assessment **	51848-0	(no coded entries required) 2.16.840.1.113883.10.20.22.2.8	-	R	-	-	R	-	R	-	*	
Assessment and Plan**	51847-2	(no coded entries required) 2.16.840.1.113883.10.20.22.2.9	-	R	-	-	R	-	R	R	*	
Chief Complaint***	10154-3	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1	-	O	-	O	R	-	O	O		
Chief Complaint and Reason for Visit***	46239-0	(no coded entries required) 2.16.840.1.113883.10.20.22.2.13	-	R	-	O	R	-	O	-	*	

Section Name	LOINC	templateId Coded Entries Required Coded Entries Optional	CCD	Consultation Note	Diagnostic Imaging Report	Discharge Summary	H&P Note	Operative Note	Procedure Note	Progress Note	Unstructured Document	Stage 1 Meaningful Use
Clinical Presentation	55108-5		-	-	O	-	-	-	-	-	*	
<u>Complications</u>	55109-3	(no coded entries required) 2.16.840.1.113883.10.20.22.2.37	-	-	O	-	-	R	R	-	*	
Conclusions	55110-1		-	-	O	-	-	-	-	-	*	
Current Imaging Procedure Descriptions	55111-9		-	-	O	-	-	-	-	-	*	
<u>DICOM Object Catalog</u>	121181 (DCM)	2.16.840.1.113883.10.20.6.1.1	-	-	R	-	-	-	-	-	-	
<u>Discharge Diet</u>	42344-2	(no coded entries required) 1.3.6.1.4.1.19376.1.5.3.1.3.33	-	-	-	O	-	-	-	-	*	
Document Summary	55112-7		-	-	O	-	-	-	-	-	*	
<u>Encounters</u>	46240-8	(no coded entries required) 2.16.840.1.113883.10.20.22.2.22	O	-	-	-	-	-	-	-	*	
<u>Family History</u>	10157-6	— 2.16.840.1.113883.10.20.22.2.15	O	O	-	O	R	-	O	-	*	
<u>Findings</u> (Radiology Study - Observation)	18782-3	(no coded entries required) 2.16.840.1.113883.10.20.6.1.2	-	-	R	-	-	-	-	-	*	
<u>Functional Status</u>	47420-5	(no coded entries required) 2.16.840.1.113883.10.20.22.2.14	O	-	-	O	-	-	-	-	*	
<u>General Status</u>	10210-3	(no coded entries required) 2.16.840.1.113883.10.20.2.5	-	O	-	-	R	-	-	-		
<u>History of Past Illness</u> (Past Medical History)	11348-0	(no coded entries required) 2.16.840.1.113883.10.20.22.2.20	-	O	-	O	O	-	O	-	*	
<u>History of Present Illness</u>	10164-2	(no coded entries required) 1.3.6.1.4.1.19376.1.5.3.1.3.4	-	R	-	O	O	-	O	-	*	

Section Name	LOINC	templateId Coded Entries Required Coded Entries Optional	CCD	Consultation Note	Diagnostic Imaging Report	Discharge Summary	H&P Note	Operative Note	Procedure Note	Progress Note	Unstructured Document	Stage 1 Meaningful Use
Hospital Admission Diagnosis	46241-6	(no coded entries required) 2.16.840.1.113883.10.20.22.2.43	-	-	O	-	-	-	-	-	-	
Hospital Consultation	18841-7	(no coded entries required) 2.16.840.1.113883.10.20.22.2.42	-	-	O	-	-	-	-	-	-	
Hospital Course	8648-8	(no coded entries required) 1.3.6.1.4.1.19376.1.5.3.1.3.5	-	-	R	-	-	-	-	-	*	
Hospital Discharge Diagnosis	11535-2	(no coded entries required) 2.16.840.1.113883.10.20.22.2.24	-	-	R	-	-	-	-	-	*	
Hospital Discharge Instructions	8653-8	(no coded entries required) 2.16.840.1.113883.10.20.22.2.41	-	-	O	-	-	-	-	-	-	
Hospital Discharge Medications	10183-2	2.16.840.1.113883.10.20.22.2.11.1 2.16.840.1.113883.10.20.22.2.11	-	-	R	-	-	-	-	-	*	
Hospital Discharge Physical	10184-0	(no coded entries required) 1.3.6.1.4.1.19376.1.5.3.1.3.26	-	-	O	-	-	-	-	-	*	
Hospital Discharge Studies Summary	11493-4	(no coded entries required) 2.16.840.1.113883.10.20.22.2.16	-	-	O	-	-	-	-	-	*	
Immunizations	11369-6	2.16.840.1.113883.10.20.22.2.2.1 2.16.840.1.113883.10.20.22.2.2	O	O	-	O	O	-	-	-	*	
Instructions	69730-0	(no coded entries required) 2.16.840.1.113883.10.20.22.2.45	-	-	-	-	O	-	-	O	*	
Interventions	62387-6	(no coded entries required) 2.16.840.1.113883.10.20.21.2.3	-	-	-	-	-	-	-	O	*	
Key Images	55113-5		-	-	O	-	-	-	-	-	*	
Medical Equipment	46264-8	(no coded entries required) 2.16.840.1.113883.10.20.22.2.23	O	-	-	-	-	-	-	-	*	
Medical (General) History	11329-0	2.16.840.1.113883.10.20.22.2.39	-	-	O	-	-	-	O	-	*	

Section Name	LOINC	templateId Coded Entries Required Coded Entries Optional	CCD	Consultation Note	Discharge Summary	Diagnostic Imaging Report	H&P Note	Operative Note	Procedure Note	Progress Note	Unstructured Document	Stage 1 Meaningful Use
Medications	10160-0	2.16.840.1.113883.10.20.22.2.1.1 2.16.840.1.113883.10.20.22.2.1	R	O	-	-	R	-	O	O	*	R
Medications Administered	29549-3	(no coded entries required) 2.16.840.1.113883.10.20.22.2.38	-	-	-	-	-	-	O	-	*	
Objective	61149-1	(no coded entries required) 2.16.840.1.113883.10.20.21.2.1	-	-	-	-	-	-	-	O	*	
Operative Note Fluids	10216-0	(no coded entries required) 2.16.840.1.113883.10.20.7.12	-	-	-	-	-	O	-	-	*	
Operative Note Surgical Procedure	10223-6	(no coded entries required) 2.16.840.1.113883.10.20.7.14	-	-	-	-	-	O	-	-	*	
Payers	48768-6	(no coded entries required) 2.16.840.1.113883.10.20.22.2.18	O	-	-	-	-	-	-	-	*	
Physical Exam	29545-1	(no coded entries required) 2.16.840.1.113883.10.20.2.10	-	R	-	-	R	-	O	O	*	
Plan of Care**	18776-5	(no coded entries required) 2.16.840.1.113883.10.20.22.2.10	O	R	-	R	R	O	R	-	*	
Planned Procedure	59772-4	(no coded entries required) 2.16.840.1.113883.10.20.22.2.30	-	-	-	-	-	O	O	-	*	
Post-operative Diagnosis	10218-6	(no coded entries required) 2.16.840.1.113883.10.20.22.2.35	-	-	-	-	-	R	-	-	*	
Post-procedure Diagnosis	59769-0	(no coded entries required) 2.16.840.1.113883.10.20.22.2.36	-	-	-	-	-	-	R	-	*	
Preoperative Diagnosis	10219-4	(no coded entries required) 2.16.840.1.113883.10.20.22.2.34	-	-	-	-	-	R	-	-	*	
Prior Imaging Procedure Descriptions	55114-3	(no coded entries required)	-	-	O	-	-	-	-	-	-	*
Problem	11450-4	2.16.840.1.113883.10.20.22.2.5.1 2.16.840.1.113883.10.20.22.2.5	R	O	-	O	O	-	-	O	*	R
Procedure Description	29554-3	(no coded entries required) 2.16.840.1.113883.10.20.22.2.27	-	-	-	-	-	R	R	-	*	
Procedure Disposition	59775-7	(no coded entries required) 2.16.840.1.113883.10.20.18.2.12	-	-	-	-	-	O	R	-	*	

Section Name	LOINC	templateId Coded Entries Required Coded Entries Optional	CCD	Consultation Note	Diagnostic Imaging Report	Discharge Summary	H&P Note	Operative Note	Procedure Note	Progress Note	Unstructured Document	Stage 1 Meaningful Use
<u>Procedure Estimated Blood Loss</u>	59770-8	(no coded entries required) 2.16.840.1.113883.10.20.18.2.9	-	-	-	-	R	O	-	*		
<u>Procedure Findings</u>	59776-5	(no coded entries required) 2.16.840.1.113883.10.20.22.2.28	-	-	-	-	R	O	-	*		
<u>Procedure Implants</u>	59771-6	(no coded entries required) 2.16.840.1.113883.10.20.22.2.40	-	-	-	-	-	O			*	
<u>Procedure Indications</u>	59768-2	(no coded entries required) 2.16.840.1.113883.10.20.22.2.29	-	-	-	-	O	R	-	*		
<u>Procedure Specimens Taken</u>	59773-2	(no coded entries required) 2.16.840.1.113883.10.20.22.2.31	-	-	-	-	R	O	-	*		
<u>Procedures</u> List of Surgeries (History of Procedures)	47519-4	2.16.840.1.113883.10.20.22.2.7.1 2.16.840.1.113883.10.20.22.2.7	O	O	-	O	O	-	O	-	*	R ³⁰
Radiology Comparison Study – Observation	18834-2		-	-	O	-	-	-	-	-	*	
Radiology – Impression	19005-8		-	-	O	-	-	-	-	-	*	
Radiology Study – Recommendations	18783-1		-	-	O	-	-	-	-	-	*	
Radiology Reason for Study	18785-6		-	-	O	-	-	-	-	-	*	
<u>Reason for Referral</u> ****	42349-1	(no coded entries required) 1.3.6.1.4.1.19376.1.5.3.1.3.1	-	R	-	-	-	-	-	-	*	
<u>Reason for Visit</u> ***	29299-5	2.16.840.1.113883.10.20.22.2.12	-	R	-	O	R	-	O	-	-	
Requested Imaging Studies Information	55115-0		-	-	O	-	-	-	-	-	*	

³⁰ Required only for inpatient settings

Section Name	LOINC	templateId Coded Entries Required Coded Entries Optional	CCD	Consultation Note	Discharge Summary	Diagnostic Imaging Report	H&P Note	Operative Note	Procedure Note	Progress Note	Unstructured Document	Stage 1 Meaningful Use
Results	30954-2	2.16.840.1.113883.10.20.22.2.3.1 2.16.840.1.113883.10.20.22.2.3	R	O	-	-	R	-	-	O	*	R
Review of Systems	10187-3	(no coded entries required) 1.3.6.1.4.1.19376.1.5.3.1.3.18	-	O	-	O	R	-	O	O	*	
Social History	29762-2	(no coded entries required) 2.16.840.1.113883.10.20.22.2.17	O	O	-	O	R	-	O	-	*	
Subjective	61150-9	(no coded entries required) 2.16.840.1.113883.10.20.21.2.2	-	-	-	-	-	-	-	O	*	
Surgical Drains	11537-8	(no coded entries required) 2.16.840.1.113883.10.20.7.13	-	-	-	-	-	O	-	-	*	
Vital Signs	8716-3	2.16.840.1.113883.10.20.22.2.4.1 2.16.840.1.113883.10.20.22.2.4	O	O	-	O	R	-	-	O	*	

– not required or optional; these sections can be included if appropriate for the document type

* content could be present and is unstructured

** wherever referenced, intent is that either “Assessment and Plan” is present or both “Assessment” and “Plan of Care”. Only these combinations should be used

*** wherever referenced, intent is that either “Chief Complaint/Reason for Visit” is present or “Chief Complaint”, and/or “Reason for Visit”. Only these combinations should be used

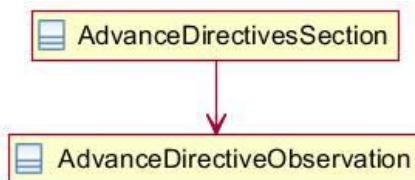
****in Consultation Note, either “Reason for Referral”, “Reason for Visit”, or “Chief Complaint/Reason for Visit” must be present

5.1 Advance Directives Section 42348-3

Table 45: Advance Directives Section Contexts

Used By:	Contains Entries:
Coded entries optional: Continuity of Care Document (CCD) (optional)	Advance Directive Observation
Coded entries required: ---	

Figure 77: Advance directives section UML diagram



This section contains data defining the patient's advance directives and any reference to supporting documentation. The most recent and up-to-date directives are required, if known, and should be listed in as much detail as possible. This section contains data such as the existence of living wills, healthcare proxies, and CPR and resuscitation status. If referenced documents are available, they can be included in the CCD exchange package.

NOTE: The descriptions in this section differentiate between "advance directives" and "advance directive documents". The former are the directions whereas the latter are legal documents containing those directions. Thus, an advance directive might be "no cardiopulmonary resuscitation", and this directive might be stated in a legal advance directive document.

Advance Directives Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.21 (open)]

The following constraints apply to an Advance Directive section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7928) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.21"` (CONF:10376).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15340).
 - a. This code **SHALL** contain exactly one [1..1] `@code="42348-3"` Advance Directives (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15342).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7930).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7931).
5. **MAY** contain zero or more [0..*] **entry** (CONF:7957) such that it
 - a. **SHALL** contain exactly one [1..1] [Advance Directive Observation](#) (2.16.840.1.113883.10.20.22.4.48) (CONF:8800).

Advance Directives Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.21.1(open)]

The following constraints apply to an Advance Directive section in which entries are required.

1. Conforms to [Advance Directives Section \(entries optional\)](#) template (2.16.840.1.113883.10.20.22.2.21).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8643) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.21.1"` (CONF:10377).
3. **SHALL** contain exactly one [1..1] **code** (CONF:15343).
 - a. This code **SHALL** contain exactly one [1..1] `@code="42348-3"` Advance Directives (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15344).
4. **SHALL** contain exactly one [1..1] **title** (CONF:8645).
5. **SHALL** contain exactly one [1..1] **text** (CONF:8646).
6. **SHALL** contain at least one [1..*] **entry** (CONF:8647) such that it
 - a. **SHALL** contain exactly one [1..1] [Advance Directive Observation](#) (2.16.840.1.113883.10.20.22.4.48) (CONF:8801).

Figure 78: Advance directives section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.21.1"/>
  <!-- Template with coded entries required. -->
  <code code="42348-3" codeSystem="2.16.840.1.113883.6.1"/>
  <title>Advance Directives</title>
  <text>
    ...
  </text>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.48"/>
      ...
    </observation>
  </entry>
</section>
```

5.2 Allergies Section 48765-2

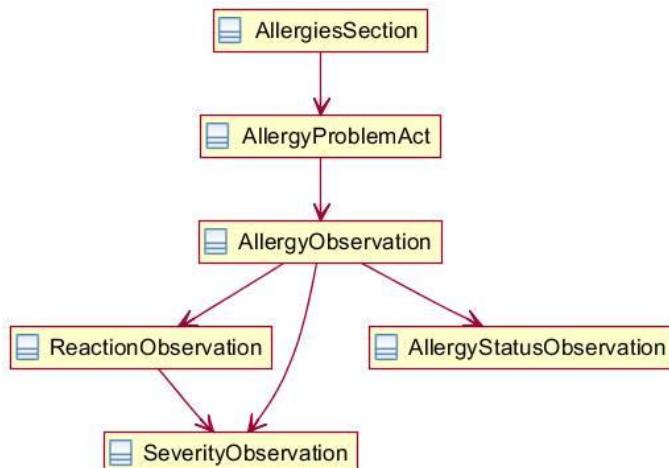
Table 46: Allergies Section Contexts

Used By:	Contains Entries:
Coded entries optional: Progress Note (optional) Consultation Note (optional) Discharge Summary (required) History and Physical (required) Procedure Note (optional)	Allergy Problem Act

Coded entries required:

[Continuity of Care Document \(CCD\)](#) (required)

Figure 79: Allergies section UML diagram



This section lists and describes any medication allergies, adverse reactions, idiosyncratic reactions, anaphylaxis/anaphylactoid reactions to food items, and metabolic variations or adverse reactions/allergies to other substances (such as latex, iodine, tape adhesives) used to assure the safety of health care delivery. At a minimum, it should list currently active and any relevant historical allergies and adverse reactions.

Allergies Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.6 (open)]

The following constraints apply to an Allergies section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7800) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.2.6"** (CONF:10378).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15345).

- a. This code **SHALL** contain exactly one [1..1] @code="48765-2" Allergies, adverse reactions, alerts (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15346).
- 3. **SHALL** contain exactly one [1..1] **title** (CONF:7802).
- 4. **SHALL** contain exactly one [1..1] **text** (CONF:7803).
- 5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7804) such that it
 - a. **SHALL** contain exactly one [1..1] Allergy Problem Act (2.16.840.1.113883.10.20.22.4.30) (CONF:7805)

Allergies Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.6.1 (open)]

The following constraints apply to an Allergies section in which entries are required.

- 1. Conforms to Allergies Section (entries optional) template (2.16.840.1.113883.10.20.22.2.6).
- 2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7527) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.6.1" (CONF:10379).
- 3. **SHALL** contain exactly one [1..1] **code** (CONF:15349).
 - a. This code **SHALL** contain exactly one [1..1] @code="48765-2" Allergies, adverse reactions, alerts (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15350).
- 4. **SHALL** contain exactly one [1..1] **title** (CONF:7534).
- 5. **SHALL** contain exactly one [1..1] **text** (CONF:7530).
- 6. **SHALL** contain at least one [1..*] **entry** (CONF:7531) such that it
 - a. **SHALL** contain exactly one [1..1] Allergy Problem Act (2.16.840.1.113883.10.20.22.4.30) (CONF:7532).

Figure 80: Allergies section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.6"/>
  <code code="48765-2"
        displayName="Allergies, adverse reactions, alerts"
        codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
  <title>Allergies</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <act classCode="ACT" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.30"/>
      <!-- Allergy Problem Act template -->
      ...
    </act>
  </entry>
</section>
```

5.3 Anesthesia Section 59774-0

[section: templateId 2.16.840.1.113883.10.20.22.2.25 (open)]

Table 47: Anesthesia Section Contexts

Used By:	Contains Entries:
Procedure Note (optional) Operative Note (required)	Medication Activity Procedure Activity Procedure

The Anesthesia section briefly records the type of anesthesia (e.g., general or local) and may state the actual agent used. This may or may not be a subsection of the Procedure Description section. The full details of anesthesia are usually found in a separate Anesthesia Note.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8066) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.2.25" (CONF:10380).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15351).
 - a. This code **SHALL** contain exactly one [1..1] @code="59774-0" Anesthesia (CONF:15352).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8068).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8069).
5. **MAY** contain zero or more [0..*] **entry** (CONF:8092) such that it
 - a. **SHALL** contain exactly one [1..1] [Procedure Activity Procedure](#) (2.16.840.1.113883.10.20.22.4.14) (CONF:8093).
6. **MAY** contain zero or more [0..*] **entry** (CONF:8094) such that it
 - a. **SHALL** contain exactly one [1..1] [Medication Activity](#) (2.16.840.1.113883.10.20.22.4.16) (CONF:8095).

Figure 81: Anesthesia section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.18.2.7"/>
  <templateId root="2.16.840.1.113883.10.20.22.2.25"/>
  <code code="59774-0"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="PROCEDURE ANESTHESIA"/>
  <title>Procedure Anesthesia</title>
  <text> Conscious sedation with propofol 200 mg IV </text>
  <entry>
    <procedure classCode="PROC" moodCode="EVN">
      <!-- Procedure activity procedure template -->
      <templateId root="2.16.840.1.113883.10.20.22.4.14"/>
      ...
    </procedure>
  </entry>
  <entry>
    <substanceAdministration classCode="SBADM" moodCode="EVN">
      <!-- Medication activity template -->
      <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
      ...
    </substanceAdministration>
  </entry>
</section>
```

5.4 Assessment and Plan Section 51847-2

[section: templateId 2.16.840.1.113883.10.20.22.2.9 (open)]

Table 48: Assessment and Plan Section Contexts

Used By:	Contains Entries:
Progress Note (optional) Consultation Note (optional) Procedure Note (optional) History and Physical (optional)	Plan of Care Activity Act

The Assessment and Plan sections may be combined or separated to meet local policy requirements.

The Assessment and Plan section represents both the clinician's conclusions and working assumptions that will guide treatment of the patient (see Assessment Section above) and pending orders, interventions, encounters, services, and procedures for the patient (see Plan of Care Section below).

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7705) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.9" (CONF:10381).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15353).

- a. This code **SHALL** contain exactly one [1..1] @code="51847-2" Assessment and Plan (CONF:15354).
- 3. **SHALL** contain exactly one [1..1] **text** (CONF:7707).
- 4. **MAY** contain zero or more [0..*] **entry** (CONF:7708) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Act](#) (2.16.840.1.113883.10.20.22.4.39) (CONF:8798).

Figure 82: Assessment and plan section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.9"/>
  <code codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" code="51847-2"
    displayName="ASSESSMENT AND PLAN"/>
  <title>ASSESSMENT AND PLAN</title>
  <text>
    ...
  </text>
  <entry>
    <act moodCode="RQO" classCode="ACT">
      <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
      <!-- Plan of Care Activity Act -->
      ...
    </act>
  </entry>
</section>

```

5.5 Assessment Section 51848-0

[section: templateId 2.16.840.1.113883.10.20.22.2.8 (open)]

Table 49: Assessment Section Contexts

Used By:	Contains Entries:
Progress Note (optional) Consultation Note (optional) History and Physical (optional) Procedure Note (optional)	

The Assessment section (also referred to as “impression” or “diagnoses” outside of the context of CDA) represents the clinician’s conclusions and working assumptions that will guide treatment of the patient. The assessment may be a list of specific disease entities or a narrative block.

- 1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7711) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.8" (CONF:10382).
- 2. **SHALL** contain exactly one [1..1] **code** (CONF:14757).
 - a. This code **SHALL** contain exactly one [1..1] @code="51848-0" Assessments (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:14758).

3. **SHALL** contain exactly one [1..1] **title** (CONF:16774).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7713).

Figure 83: Assessment section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.8"/>
  <code codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" code="51848-0"
    displayName="ASSESSMENTS"/>
  <title>ASSESSMENTS</title>
  <text>
    ...
  </text>
</section>
```

5.6 Chief Complaint and Reason for Visit Section 46239-0

[section: templateId 2.16.840.1.113883.10.20.22.2.13 (open)]

Table 50: Chief Complaint and Reason for Visit Section Contexts

Used By:	Contains Entries:
Consultation Note (optional) Discharge Summary (optional) History and Physical (optional) Procedure Note (optional)	

This section records the patient's chief complaint (the patient's own description) and/or the reason for the patient's visit (the provider's description of the reason for visit). Local policy determines whether the information is divided into two sections or recorded in one section serving both purposes.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7840) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.2.13" (CONF:10383).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15449).
 - a. This code **SHALL** contain exactly one [1..1] @code="46239-0" Chief Complaint and Reason for Visit (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15450).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7842).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7843).

Figure 84: Chief complaint and reason for visit section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.13"/>
  <code code="46239-0"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="CHIEF COMPLAINT AND REASON FOR VISIT"/>
  <title> CHIEF COMPLAINT</title>
  <text>Back Pain</text>
</section>
```

5.7 Chief Complaint Section 10154-3

[section: templateId 1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1(open)]

Table 51: Chief Complaint Section Contexts

Used By:	Contains Entries:
Progress Note (optional) Consultation Note (optional) Discharge Summary (optional) History and Physical (optional) Procedure Note (optional)	

This section records the patient's chief complaint (the patient's own description).

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7832) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1" (CONF:10453).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15451).
 - a. This code **SHALL** contain exactly one [1..1] @code="10154-3" Chief Complaint (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15452).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7834).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7835).

Figure 85: Chief complaint section example

```
<section>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"/>
  <code code="10154-3"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="CHIEF COMPLAINT"/>
  <title> CHIEF COMPLAINT</title>
  <text>Back Pain</text>
</section>
```

5.8 Complications Section 55109-3

[section: templateId 2.16.840.1.113883.10.20.22.2.37 (open)]

Table 52: Complications Section Contexts

Used By:	Contains Entries:
Procedure Note (required) Operative Note (required)	Problem Observation

The Complications section records problems that occurred during the procedure or other activity. The complications may have been known risks or unanticipated problems.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8174) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.2.37" (CONF:10384).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15453).
 - a. This code **SHALL** contain exactly one [1..1] @code="55109-3"
 Complications (CodeSystem: LOINC 2.16.840.1.113883.6.1)
 (CONF:15454).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8176).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8177).
5. There **SHALL** be a statement providing details of the complication(s) or it **SHALL** explicitly state there were no complications. (CONF:8797).
6. **MAY** contain zero or more [0..*] **entry** (CONF:8795) such that it
 - a. **SHALL** contain exactly one [1..1] [Problem Observation](#)
(2.16.840.1.113883.10.20.22.4.4) (CONF:8796).

Figure 86: Complications section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.37"/>
  <code code="55109-3" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="Complications"/>
  <title>Complications</title>
  <text>Asthmatic symptoms while under general anesthesia.</text>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
      <!-- Problem Observation -->
      ...
    </observation>
  </entry>
</section>
```

5.9 DICOM Object Catalog Section - DCM 121181

[section: templateId 2.16.840.1.113883.10.20.6.1.1(open)]

Table 53: DICOM Object Catalog Section - DCM 121181 Contexts

Used By:	Contains Entries:
Diagnostic Imaging Report	Study Act

DICOM Object Catalog lists all referenced objects and their parent Series and Studies, plus other DICOM attributes required for retrieving the objects.

DICOM Object Catalog sections are not intended for viewing and contain empty section text.

9. **SHALL** contain exactly one [1..1] **templateId** (CONF:8525) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.6.1.1"` (CONF:10454).
10. A DICOM Object Catalog **SHALL** be present if the document contains references to DICOM Images. If present, it **SHALL** be the first section in the document (CONF:8527).
11. **SHALL** contain exactly one [1..1] **code** (CONF:15456).
 - a. This code **SHALL** contain exactly one [1..1] `@code="121181"` Dicom Object Catalog (CodeSystem: DCM 1.2.840.10008.2.16.4) (CONF:15457).
12. **SHALL** contain at least one [1..*] **entry** (CONF:8530).
 - a. Such entries **SHALL** contain exactly one [1..1] [**Study Act**](#) (`templateId:2.16.840.1.113883.10.20.6.2.6`) (CONF:15458).

Figure 87: DICOM object catalog section example

```
<section classCode="DOCSECT" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.1.1"/>
  <code code="121181" codeSystem="1.2.840.10008.2.16.4"
        codeSystemName="DCM" displayName="DICOM Object Catalog"/>
  <entry>

    <!-- **** Study Act *** -->
    <act classCode="ACT" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.6.2.6"/>
      <id root="1.2.840.113619.2.62.994044785528.114289542805"/>
      <code code="113014" codeSystem="1.2.840.10008.2.16.4"
            codeSystemName="DCM" displayName="Study"/>

      <!-- ***** Series Act*****-->
      <entryRelationship typeCode="COMP">
        <act classCode="ACT" moodCode="EVN">
          <id
root="1.2.840.113619.2.62.994044785528.20060823223142485051"/>
          <code code="113015" codeSystem="1.2.840.10008.2.16.4"
                codeSystemName="DCM" displayName="Series">
            ...
          </code>

        <!-- ***** SOP Instance UID *** -->
        <!-- 2 References -->
        <entryRelationship typeCode="COMP">
          <observation classCode="DGIMG" moodCode="EVN">
            <templateId root="2.16.840.1.113883.10.20.6.2.8"/>
            ...
          </observation>
        </entryRelationship>
        <entryRelationship typeCode="COMP">
          <observation classCode="DGIMG" moodCode="EVN">
            <templateId root="2.16.840.1.113883.10.20.6.2.8"/>
            ...
          </observation>
        </entryRelationship>
      </act>
    </entryRelationship>
  </act>
</entry>
</section>
```

5.10 Discharge Diet Section 42344-2

[section: templateId 1.3.6.1.4.1.19376.1.5.3.1.3.33 (open)]

Table 54: Discharge Diet Section Contexts

Used By:	Contains Entries:
Discharge Summary (optional)	

This section records a narrative description of the expectations for diet and nutrition, including nutrition prescription, proposals, goals, and order requests for monitoring, tracking, or improving the nutritional status of the patient, used in a discharge from a facility such as an emergency department, hospital, or nursing home.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7975) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="1.3.6.1.4.1.19376.1.5.3.1.3.33" (CONF:10455).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15459).
 - a. This code **SHALL** contain exactly one [1..1] @code="42344-2"
 Discharge Diet (CodeSystem: LOINC 2.16.840.1.113883.6.1)
 (CONF:15460).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7977).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7978).

Figure 88: Discharge diet section example

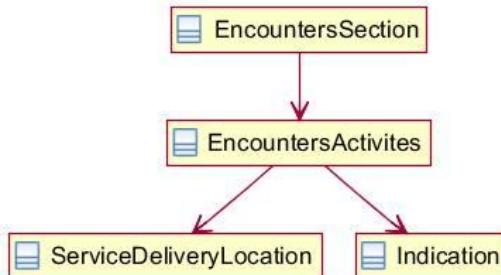
```
<section>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.3.33"/>
  <code code="42344-2"
    displayName="DISCHARGE DIET"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"/>
  <title>Discharge Diet</title>
  <text> Low-fat, low-salt, cardiac diet </text>
</section>
```

5.11 Encounters Section 46240-8

Table 55: Encounters Section Contexts

Used By:	Contains Entries:
Coded entries optional: Continuity of Care Document (CCD) (optional)	Encounter Activities
Coded entries required: ---	

Figure 89: Encounters section UML diagram



This section lists and describes any healthcare encounters pertinent to the patient's current health status or historical health history. An Encounter is an interaction, regardless of the setting, between a patient and a practitioner who is vested with primary responsibility for diagnosing, evaluating, or treating the patient's condition. It may include visits, appointments, as well as non-face-to-face interactions. It is also a contact between a patient and a practitioner who has primary responsibility for assessing and treating the patient at a given contact, exercising independent judgment. This section may contain all encounters for the time period being summarized, but should include notable encounters.

Encounters Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.22(open)]

The following constraints apply to an Encounters section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7940) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.2.22"** (CONF:10386).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15461).
 - a. This code **SHALL** contain exactly one [1..1] **@code="46240-8"** Encounters (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15462).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7942).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7943).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7951) such that it
 - a. **SHALL** contain exactly one [1..1] **Encounter Activities** (2.16.840.1.113883.10.20.22.4.49) (CONF:8802).

Encounters Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.22.1(open)]

The following constraints apply to an Encounters section in which entries are required.

1. Conforms to **Encounters Section (entries optional)** template (2.16.840.1.113883.10.20.22.2.22).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:8705) such that it

- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.22.1" (CONF:10387).
- 3. **SHALL** contain exactly one [1..1] **code** (CONF:15466).
 - a. This code **SHALL** contain exactly one [1..1] @code="46240-8" Encounters (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15467).
- 4. **SHALL** contain exactly one [1..1] **title** (CONF:8707).
- 5. **SHALL** contain exactly one [1..1] **text** (CONF:8708).
- 6. **SHALL** contain at least one [1..*] **entry** (CONF:8709) such that it
 - a. **SHALL** contain exactly one [1..1] **Encounter Activities** (2.16.840.1.113883.10.20.22.4.49) (CONF:8803).

Figure 90: Encounters section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.22"/>
  <!-- Encounters Section - Entries optional -->
  <code code="46240-8" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC" displayName="History of encounters"/>
  <title>Encounters</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <encounter classCode="ENC" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.49"/>
      <!-- Encounter Activities -->
      ...
    </encounter>
  </entry>
</section>
```

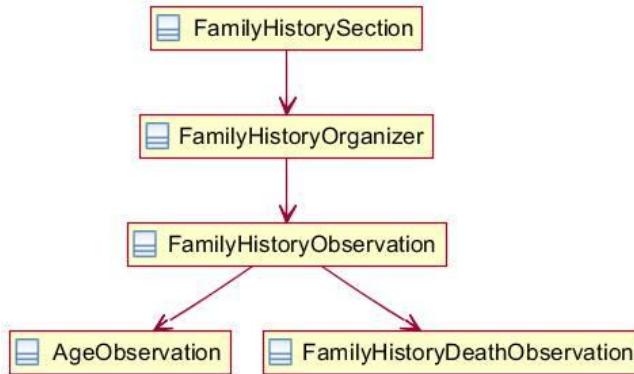
5.12 Family History Section 10157-6

[section: templateId 2.16.840.1.113883.10.20.22.2.15 (open)]

Table 56: Family History Section Contexts

Used By:	Contains Entries:
Consultation Note (optional) Discharge Summary (optional) History and Physical (required) Procedure Note (optional) Continuity of Care Document (CCD) (optional)	Family History Organizer

Figure 91: Family history section UML diagram



This section contains data defining the patient's genetic relatives in terms of possible or relevant health risk factors that have a potential impact on the patient's healthcare risk profile.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7932) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.15" (CONF:10388).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15469).
 - a. This code **SHALL** contain exactly one [1..1] @code="10157-6" Family History (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15470).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7934).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7935).
5. **MAY** contain zero or more [0..*] **entry** (CONF:7955) such that it
 - a. **SHALL** contain exactly one [1..1] [Family History Organizer](#) (2.16.840.1.113883.10.20.22.4.45) (CONF:8799).

Figure 92: Family history section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.15"/>
  <!-- Family history section template -->
  <code code="10157-6" codeSystem="2.16.840.1.113883.6.1"/>
  <title>Family history</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <organizer moodCode="EVN" classCode="CLUSTER">
      <templateId root="2.16.840.1.113883.10.20.22.4.45"/>
      <!-- Family history organizer template -->
      ...
    </organizer>
  </entry>
</section>
  
```

5.13 Findings Section (DIR) 18782-3

[section: templateId 2.16.840.1.113883.10.20.6.1.2 (open)]

Table 57: Findings Section Contexts

Used By:	Contains Entries:
Diagnostic Imaging Report (required)	

The Findings section contains the main narrative body of the report. While not an absolute requirement for transformed DICOM SR reports, it is suggested that Diagnostic Imaging Reports authored in CDA follow Term Info guidelines³¹ for the codes in the various observations and procedures recorded in this section.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8531) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.6.1.2"` (CONF:10456).
2. This section **SHOULD** contain only the direct observations in the report, with topics such as Reason for Study, History, and Impression placed in separate sections. However, in cases where the source of report content provides a single block of text not separated into these sections, that text **SHALL** be placed in the Findings section. (CONF:8532).

Figure 93: Findings section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.6.1.2"/>
  <code code="121070"
    codeSystem="1.2.840.10008.2.16.4"
    codeSystemName="DCM"
    displayName="Findings"/>
  <title>Findings</title>
  <text>
    <paragraph>
      <caption>Finding</caption>
      <content ID="Fndng2">The cardiomeastinum is . </content>
    </paragraph>
    <paragraph>
      <caption>Diameter</caption>
      <content ID="Diam2">45mm</content>
    </paragraph>
    ...
  </text>
  <entry>
    <templateId root="2.16.840.1.113883.10.20.6.2.12"/>
    ...
  </entry>
</section>
```

³¹ <http://www.hl7.org/special/committees/terminfo/index.cfm>

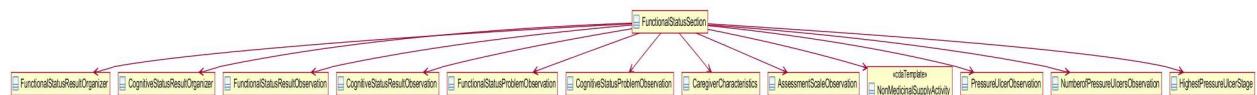
5.14 Functional Status Section 47420-5

[section: templateId 2.16.840.1.113883.10.20.22.2.14 (open)]

Table 58: Functional Status Section Contexts

Used By:	Contains Entries:
Discharge Summary (optional) Continuity of Care Document (CCD) (optional)	Assessment Scale Observation Caregiver Characteristics Cognitive Status Problem Observation Cognitive Status Result Observation Cognitive Status Result Organizer Functional Status Problem Observation Functional Status Result Observation Functional Status Result Organizer Non-Medicinal Supply Activity Highest Pressure Ulcer Stage Number of Pressure Ulcers Observation Pressure Ulcer Observation

Figure 94: Functional status section UML diagram



*The [Large UML Diagrams](#) appendix provides a larger version of this diagram

The Functional Status section describes the patient's physical state, status of functioning, and environmental status at the time the document was created.

A patient's physical state may include information regarding the patient's physical findings as they relate to problems, including but not limited to:

- Pressure Ulcers
- Amputations
- Heart murmur
- Ostomies

A patient's functional status may include information regarding the patient relative to their general functional and cognitive ability, including:

- Ambulatory ability
- Mental status or competency
- Activities of Daily Living (ADLs), including bathing, dressing, feeding, grooming
- Home or living situation having an effect on the health status of the patient
- Ability to care for self

- Social activity, including issues with social cognition, participation with friends and acquaintances other than family members
- Occupation activity, including activities partly or directly related to working, housework or volunteering, family and home responsibilities or activities related to home and family
- Communication ability, including issues with speech, writing or cognition required for communication
- Perception, including sight, hearing, taste, skin sensation, kinesthetic sense, proprioception, or balance

A patient's environmental status may include information regarding the patient's current exposures from their daily environment, including but not limited to:

- Airborne hazards such as second-hand smoke, volatile organic compounds, dust, or other allergens
- Radiation
- Safety hazards in home, such as throw rugs, poor lighting, lack of railings/grab bars, etc.
- Safety hazards at work, such as communicable diseases, excessive heat, excessive noise, etc.

The patient's functional status may be expressed as a problem or as a result observation. A functional or cognitive status problem observation describes a patient's problem, symptoms or condition. A functional or cognitive status result observation may include observations resulting from an assessment scale, evaluation or question and answer assessment.

Any deviation from normal function displayed by the patient and recorded in the record should be included. Of particular interest are those limitations that would interfere with self-care or the medical therapeutic process in any way. In addition, a note of normal function, an improvement, or a change in functioning status may be included.

Table 59: Functional and Cognitive Status Problem Observation Examples

Problem Observation	Functional Status	Cognitive Status
Problem/Condition/Symptom	Dysphagia	Dementia
	Orthopnea	Chronic confusion
	Shortness of Breath	Depressed mood

Table 60: Functional and Cognitive Status Result Observation Examples

Result Observation	Functional Status	Cognitive Status
Frequency Observation	Incontinency Frequency	Behavior Frequency
Assessment Scale or Evaluation Result	Pain Scale	Brief Interview for Mental Status
Assessment Question/Answer	Eating Independent Partial/Moderate Assistance Substantial Assistance Dependent	Disorganized thinking Behavior not present Behavior continuously present Behavior present, fluctuates

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7920) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.14"` (CONF:10389).
2. **SHALL** contain exactly one [1..1] **code** (CONF:14578).
 - a. This code **SHALL** contain exactly one [1..1] `@code="47420-5"` Functional Status (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:14579).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7922).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7923).
5. **MAY** contain zero or more [0..*] **entry** (CONF:14414) such that it
 - a. **SHALL** contain exactly one [1..1] [Functional Status Result Organizer](#) (`templateId:2.16.840.1.113883.10.20.22.4.66`) (CONF:14415).
6. **MAY** contain zero or more [0..*] **entry** (CONF:14416) such that it
 - a. **SHALL** contain exactly one [1..1] [Cognitive Status Result Organizer](#) (`templateId:2.16.840.1.113883.10.20.22.4.75`) (CONF:14417).
7. **MAY** contain zero or more [0..*] **entry** (CONF:14418) such that it
 - a. **SHALL** contain exactly one [1..1] [Functional Status Result Observation](#) (`templateId:2.16.840.1.113883.10.20.22.4.67`) (CONF:14419).
8. **MAY** contain zero or more [0..*] **entry** (CONF:14420) such that it
 - a. **SHALL** contain exactly one [1..1] [Cognitive Status Result Observation](#) (`templateId:2.16.840.1.113883.10.20.22.4.74`) (CONF:14421).
9. **MAY** contain zero or more [0..*] **entry** (CONF:14422) such that it
 - a. **SHALL** contain exactly one [1..1] [Functional Status Problem Observation](#) (`templateId:2.16.840.1.113883.10.20.22.4.68`) (CONF:14423).

10. **MAY** contain zero or more [0..*] **entry** (CONF:14424) such that it
- SHALL** contain exactly one [1..1] [Cognitive Status Problem Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.73) (CONF:14425).
11. **MAY** contain zero or more [0..*] **entry** (CONF:14426) such that it
- SHALL** contain exactly one [1..1] [Caregiver Characteristics](#) (templateId:2.16.840.1.113883.10.20.22.4.72) (CONF:14427).
12. **MAY** contain zero or more [0..*] **entry** (CONF:14580) such that it
- SHALL** contain exactly one [1..1] [Assessment Scale Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.69) (CONF:14581).
13. **MAY** contain zero or more [0..*] **entry** (CONF:14582) such that it
- SHALL** contain exactly one [1..1] [Non-Medicinal Supply Activity](#) (templateId:2.16.840.1.113883.10.20.22.4.50) (CONF:14583).
14. **MAY** contain zero or more [0..*] **entry** (CONF:16777) such that it
- SHALL** contain exactly one [1..1] [Pressure Ulcer Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.70) (CONF:16778).
15. **MAY** contain zero or more [0..*] **entry** (CONF:16779) such that it
- SHALL** contain exactly one [1..1] [Number of Pressure Ulcers Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.76) (CONF:16780).
16. **MAY** contain zero or more [0..*] **entry** (CONF:16781) such that it
- SHALL** contain exactly one [1..1] [Highest Pressure Ulcer Stage](#) (templateId:2.16.840.1.113883.10.20.22.4.77) (CONF:16782).

Figure 95: Functional status section example

```
<section>
<templateId root="2.16.840.1.113883.10.20.22.2.14"/>
<!-- **** Functional status section template **** -->
<code code="47420-5" codeSystem="2.16.840.1.113883.6.1"/>
<title>Functional Status</title>
<text>
<table border="1" width="100%">
<thead>
<tr>
<th>Functional and Cognitive Assessment</th>
<th>March 23 to March 25, 2012</th>
<th>Condition Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependence on cane</td>
<td>1998</td>
<td>Active</td>
</tr>
<tr>
<td>Memory impairment</td>
<td>1999</td>
<td>Active</td>
</tr>
</tbody>
```

```

        </table>
    </text>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.67"/>
    <!-- **** Functional Status Result Observation template **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
    <!-- **** Cognitive Status Result Observation template **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.68"/>
    <!-- **** Functional Status Problem Observation template **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.73"/>
    <!-- **** Cognitive Status Problem Observation template **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.66"/>
    <!-- **** Functional Status Result Organizer template **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.75"/>
    <!-- **** Cognitive Status Result Organizer template **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.72"/>
    <!-- **** Caregiver Characteristics template **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.50"/>
    <!-- **** Non-Medicinal Supply **** -->
    ...
</entry>
<entry typeCode="DRIV">
    <templateId root="2.16.840.1.113883.10.20.22.4.69"/>
    <!-- **** Assessment Scale template **** -->
    ...
</entry>
...
</section>

```

5.15 General Status Section 10210-3

[section: templateId 2.16.840.1.113883.10.20.2.5(open)]

Table 61: General Status Section Contexts

Used By:	Contains Entries:
Consultation Note (optional) History and Physical (required)	

The General Status section describes general observations and readily observable attributes of the patient, including affect and demeanor, apparent age compared to actual age, gender, ethnicity, nutritional status based on appearance, body build and habitus (e.g., muscular, cachectic, obese), developmental or other deformities, gait and mobility, personal hygiene, evidence of distress, and voice quality and speech.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7985) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.2.5" (CONF:10457).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15472).
 - a. This code **SHALL** contain exactly one [1..1] @code="10210-3" General Status (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15473).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7987).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7988).

Figure 96: General status section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.2.5" />
  <code code="10210-3"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="GENERAL STATUS" />
  <title>GENERAL STATUS</title>
  <text>
    <paragraph>Alert and in good spirits, no acute distress.
    </paragraph>
  </text>
</section>
```

5.16 History of Past Illness Section 11348-0

[section: templateId 2.16.840.1.113883.10.20.22.2.20 (open)]

Table 62: History of Past Illness Section Contexts

Used By:	Contains Entries:
Consultation Note (optional) Discharge Summary (optional) History and Physical (required) Procedure Note (optional)	Problem Observation

This section describes the history related to the patient's past complaints, problems, or diagnoses. It records these details up until, and possibly pertinent to, the patient's current complaint or reason for seeking medical care.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7828) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.2.20" (CONF:10390).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15474).
 - a. This code **SHALL** contain exactly one [1..1] @code="11348-0" History of Past Illness (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15475).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7830).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7831).
5. **MAY** contain zero or more [0..*] **entry** (CONF:8791) such that it
 - a. **SHALL** contain exactly one [1..1] [Problem Observation](#) (2.16.840.1.113883.10.20.22.4.4) (CONF:8792).

Figure 97: History of past illness section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.20"/>
  <!-- ** History of Past Illness Section ** -->
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC" code="11348-0"
        displayName="HISTORY OF PAST ILLNESS"/>
  <title>PAST MEDICAL HISTORY</title>
  <text>
    <paragraph>Patient has had ..... </paragraph>
  </text>
  <entry>
    <!-- Sample With Problem Observation. -->
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
      <!-- Problem Observation -->
      ...
    </observation>
  </entry>
</section>
```

5.17 History of Present Illness Section 10164-2

[section: templateId 1.3.6.1.4.1.19376.1.5.3.1.3.4 (open)]

Table 63: History of Present Illness Section Contexts

Used By:	Contains Entries:
Consultation Note (required) Discharge Summary (optional) History and Physical (optional) Procedure Note (optional)	

The History of Present Illness section describes the history related to the reason for the encounter. It contains the historical details leading up to and pertaining to the patient's current complaint or reason for seeking medical care.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7848) such that it
 - a. **SHALL** contain exactly one [1..1] @root="1.3.6.1.4.1.19376.1.5.3.1.3.4" (CONF:10458).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15477).
 - a. This code **SHALL** contain exactly one [1..1] @code="10164-2" History of Present Illness (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15478).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7850).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7851).

Figure 98: History of present illness section example

```
<section>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.3.4"/>
  <code codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
        code="10164-2"
        displayName="HISTORY OF PRESENT ILLNESS"/>
  <title>HISTORY OF PRESENT ILLNESS</title>
  <text>
    <paragraph>This patient was only recently discharged for a recurrent
      GI bleed as described below.</paragraph>
    <paragraph>He presented to the ER today c/o a dark stool yesterday
      but a normal brown stool today. On exam he was hypotensive in the
      80?S resolved after .... .... ....</paragraph>
    <paragraph>Lab at discharge: Glucose 112, BUN 16, creatinine 1.1,
      electrolytes normal. H. pylori antibody pending. Admission
      hematocrit 16%, discharge hematocrit 29%. WBC 7300, platelet
      count 256,000. Urinalysis normal. Urine culture: No growth. INR
      1.1, PTT 40.</paragraph>
    <paragraph>He was transfused with 6 units of packed red blood cells
      with .... .... ....</paragraph>
    <paragraph>GI evaluation 12 September: Colonoscopy showed single red
      clot in .... .... ....</paragraph>
  </text>
</section>
```

5.18 Hospital Admission Diagnosis Section 46241-6

[section: templateId 2.16.840.1.113883.10.20.22.2.43 (open)]

Table 64: Hospital Admission Diagnosis Section Contexts

Used By:	Contains Entries:
Discharge Summary (optional)	Hospital Admission Diagnosis

The Hospital Admitting Diagnosis section contains a narrative description of the primary reason for admission to a hospital facility. The section includes an optional entry to record patient conditions.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9930) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.43"` (CONF:10391).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15479).
 - a. This code **SHALL** contain exactly one [1..1] `@code="46241-6"` Hospital Admission Diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15480).
3. **SHALL** contain exactly one [1..1] **title** (CONF:9932).
4. **SHALL** contain exactly one [1..1] **text** (CONF:9933).
5. **SHOULD** contain zero or one [0..1] **entry** (CONF:9934).
 - a. **SHALL** contain exactly one [1..1] [Hospital Admission Diagnosis](#) (2.16.840.1.113883.10.20.22.4.34) (CONF:9935).

Figure 99: Hospital admission diagnosis section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.43"/>
  <code code="46241-6" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="Hospital Admission Diagnosis"/>
  <title>HOSPITAL ADMISSION DIAGNOSIS</title>
  <text>Appendicitis</text>
  <entry>
    <act classCode="ACT" moodCode="EVN">
      <!--Hospital Admission Diagnosis template -->
      <templateId root="2.16.840.1.113883.10.20.22.4.34"/>
      ...
    </entry>
  </section>
```

5.19 Hospital Admission Medications Section 42346-7 (entries optional)

[section: templateId 2.16.840.1.113883.10.20.22.2.44 (open)]

Table 65: Hospital Admission Medications Section Contexts

Used By:	Contains Entries:
Discharge Summary (optional)	Admission Medication

The Hospital Admission Medications section defines the relevant medications administered prior to admission to the facility. The currently active medications must be listed.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:10098) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.44"` (CONF:10392).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15482).
 - a. This code **SHALL** contain exactly one [1..1] `@code="42346-7"` Medications on Admission (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15483).
3. **SHALL** contain exactly one [1..1] **title** (CONF:10100).
4. **SHALL** contain exactly one [1..1] **text** (CONF:10101).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:10102) such that it
 - a. **SHALL** contain exactly one [1..1] [Admission Medication](#) (2.16.840.1.113883.10.20.22.4.36) (CONF:10110).

Figure 100: Hospital admission medications section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.44"/>
  <code code="42346-7"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="ADMISSION MEDICATIONS"/>
  <title>Hospital Admission Medications</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <act classCode="ACT" moodCode="EVN">
      <!-- Admission Medication Entry -->
      <templateId root="2.16.840.1.113883.10.20.22.4.36"/>
      ...
    </act>
  </entry>
  ...
</section>
```

5.20 Hospital Consultations Section 18841-7

[section: templateId 2.16.840.1.113883.10.20.22.2.42 (open)]

Table 66: Hospital Consultations Section Contexts

Used By:	Contains Entries:
Discharge Summary (optional)	

The Hospital Consultations section records consultations that occurred during the admission.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9915) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.42"` (CONF:10393).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15485).
 - a. This code **SHALL** contain exactly one [1..1] `@code="18841-7"` Hospital Consultations Section (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15486).
3. **SHALL** contain exactly one [1..1] **title** (CONF:9917).
4. **SHALL** contain exactly one [1..1] **text** (CONF:9918).

Figure 101: Hospital consultations section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.42"/>
  <code code="18841-7" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="Hospital Consultations Section"/>
  <title>HOSPITAL CONSULTATIONS</title>
  <text>
    <list listType="ordered">
      <item>Gastroenterology</item>
      <item>Cardiology</item>
      <item>Dietitian</item>
    </list>
  </text>
</section>
```

5.21 Hospital Course Section 8648-8

[section: templateId 1.3.6.1.4.1.19376.1.5.3.1.3.5 (open)]

Table 67: Hospital Course Section Contexts

Used By:	Contains Entries:
Discharge Summary (required)	

The Hospital Course section describes the sequence of events from admission to discharge in a hospital facility.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7852) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="1.3.6.1.4.1.19376.1.5.3.1.3.5"` (CONF:10459)
2. **SHALL** contain exactly one [1..1] **code** (CONF:15487).
 - a. This code **SHALL** contain exactly one [1..1] `@code="8648-8"` Hospital Course (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15488).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7854)
4. **SHALL** contain exactly one [1..1] **text** (CONF:7855)

Figure 102: Hospital course section example

```
<section>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.3.5"/>
  <code code="8648-8"
    displayName="HOSPITAL COURSE"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"/>
  <title>Hospital Course</title>
  <text> The patient was admitted and started on Lovenox and
        nitroglycerin paste. The patient had ... </text>
</section>
```

5.22 Hospital Discharge Diagnosis Section 11535-2

[section: templateId 2.16.840.1.113883.10.20.22.2.24 (open)]

Table 68: Hospital Discharge Diagnosis Section Contexts

Used By:	Contains Entries:
Discharge Summary (required)	Hospital Discharge Diagnosis

The Hospital Discharge Diagnosis section describes the relevant problems or diagnoses at the time of discharge that occurred during the hospitalization or that need to be followed after hospitalization. This section includes an optional entry to record patient conditions.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7979) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.24"` (CONF:10394).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15355).
 - a. This code **SHALL** contain exactly one [1..1] `@code="11535-2"` Hospital Discharge Diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15356).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7981).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7982).
5. **SHOULD** contain zero or one [0..1] **entry** (CONF:7983).

- a. This entry, if present, **SHALL** contain exactly one [1..1] [Hospital Discharge Diagnosis](#)
 (templateId:2.16.840.1.113883.10.20.22.4.33) (CONF:7984).

Figure 103: Hospital discharge diagnosis section example

```
<section>
  <!-- Discharge Summary Hospital Discharge Diagnosis Template Id -->
  <templateId root="2.16.840.1.113883.10.20.22.2.24"/>
  <id extension="9937012" root="2.16.840.1.113883.19"/>
  <code code="11535-2" displayName="Hospital Discharge Diagnosis"
        codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
  <title>Hospital Discharge Diagnosis</title>
  <text>Diverticula of intestine</text>
  <entry>
    <act classCode="ACT" moodCode="EVN">
      <!--Hospital discharge Diagnosis act -->
      <templateId root="2.16.840.1.113883.10.20.22.4.33"/>
      ...
    </act>
  </entry>
</section>
```

5.23 Hospital Discharge Instructions Section 8653-8

[section: templateId 2.16.840.1.113883.10.20.22.2.41 (open)]

Table 69: Hospital Discharge Instructions Section Contexts

Used By:	Contains Entries:
<u>Discharge Summary</u> (optional)	

The Hospital Discharge Instructions section records instructions at discharge.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:9919) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.2.41"** (CONF:10395).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15357).
 - a. This code **SHALL** contain exactly one [1..1] **@code="8653-8"** Hospital Discharge Instructions (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15358).
3. **SHALL** contain exactly one [1..1] **title** (CONF:9921).
4. **SHALL** contain exactly one [1..1] **text** (CONF:9922).

Figure 104: Hospital discharge instructions section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.41"/>
  <code code="8653-8" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="HOSPITAL DISCHARGE INSTRUCTIONS"/>
  <title>HOSPITAL DISCHARGE INSTRUCTIONS</title>
  <text>
    <list listType="ordered">
      <item>Take all of your prescription medication as directed.</item>
      <item>Make an appointment with your doctor to be seen two weeks
from the
          date of your procedure.</item>
      <item>You may feel slightly bloated after the procedure because of
air
          that was introduced during the examination.</item>
      <item>Call your physician if you notice:<br/>
          Bleeding or black stools.<br/>
          Abdominal pain.<br/>
          Fever or chills.<br/>
          Nausea or vomiting.<br/>
          Any unusual pain or problem.<br/>
          Pain or redness at the site where the intravenous needle was
placed.<br/>
      </item>
      <item>Do not drink alcohol for 24 hours. Alcohol amplifies the
effect of
          the sedatives given.</item>
      <item>Do not drive or operate machinery for 24 hours.</item>
    </list>
  </text>
</section>
```

5.24 Hospital Discharge Medications Section 10183-2

Table 70: Hospital Discharge Medications Section Contexts

Used By:	Contains Entries:
Coded entries optional: Discharge Summary (required)	Discharge Medication
Coded entries required: ---	

The Hospital Discharge Medications section defines the medications that the patient is intended to take (or stop) after discharge. The currently active medications must be listed. The section may also include a patient's prescription history and indicate the source of the medication list, for example, from a pharmacy system versus from the patient.

Hospital Discharge Medications Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.11(open)]

The following constraints apply to a Hospital Discharge Medications section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7816) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.11"` (CONF:10396).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15359).
 - a. This code **SHALL** contain exactly one [1..1] `@code="10183-2"` Hospital Discharge Medications (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15360).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7818).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7819).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7820) such that it
 - a. **SHALL** contain exactly one [1..1] [Discharge Medication](#) (2.16.840.1.113883.10.20.22.4.35) (CONF:7883).

Hospital Discharge Medications Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.11.1(open)]

The following constraints apply to a Hospital Discharge Medications section in which entries are required.

1. Conforms to [Hospital Discharge Medications Section \(entries optional\)](#) template (2.16.840.1.113883.10.20.22.2.11).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7822) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.11.1"` (CONF:10397).
3. **SHALL** contain exactly one [1..1] **code** (CONF:15361).
 - a. This code **SHALL** contain exactly one [1..1] `@code="10183-2"` Hospital Discharge Medications (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15362).
4. **SHALL** contain exactly one [1..1] **title** (CONF:7824).
5. **SHALL** contain exactly one [1..1] **text** (CONF:7825).
6. **SHALL** contain at least one [1..*] **entry** (CONF:7826) such that it
 - a. **SHALL** contain exactly one [1..1] [Discharge Medication](#) (2.16.840.1.113883.10.20.22.4.35) (CONF:7827).

Figure 105: Hospital discharge medications section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.11"/>
  <code code="10183-2"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName=" HOSPITAL DISCHARGE MEDICATIONS"/>
  <title>Hospital Discharge Medications</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <act classCode="ACT" moodCode="EVN">
      <!-- Discharge Medication Entry -->
      <templateId root="2.16.840.1.113883.10.20.22.4.35"/>
      ...
    </act>
  </entry>
  ...
</section>
```

5.25 Hospital Discharge Physical Section 10184-0

[section: templateId 1.3.6.1.4.1.19376.1.5.3.1.3.26(open)]

Table 71: Hospital Discharge Physical Section Contexts

Used By:	Contains Entries:
Discharge Summary (optional)	

The Hospital Discharge Physical section records a narrative description of the patient's physical findings.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7971) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="1.3.6.1.4.1.19376.1.5.3.1.3.26" (CONF:10460)
2. **SHALL** contain exactly one [1..1] **code** (CONF:15363).
 - a. This code **SHALL** contain exactly one [1..1] @code="10184-0" Hospital Discharge Physical (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15364).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7973).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7974).

Figure 106: Hospital discharge physical section example

```
<section>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.3.26"/>
  <code code="10184-0"
    displayName="HOSPITAL DISCHARGE PHYSICAL"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"/>
  <title>Hospital Discharge Physical</title>
  <text>GENERAL: Well-developed, slightly obese man. <br/>
    NECK: Supple, with no jugular venous distension. <br/>
    HEART: Intermittent tachycardia without murmurs or
    gallops.<br/>
    PULMONARY: Decreased breath sounds, but no clear-cut rales
    or
    wheezes. <br/>
    EXTREMITIES: Free of edema.</text>
</section>
```

5.26 Hospital Discharge Studies Summary Section 11493-4

[section: templateId 2.16.840.1.113883.10.20.22.2.16(open)]

Table 72: Hospital Discharge Studies Summary Section Contexts

Used By:	Contains Entries:
Discharge Summary (optional)	

This section records the results of observations generated by laboratories, imaging procedures, and other procedures. The scope includes hematology, chemistry, serology, virology, toxicology, microbiology, plain x-ray, ultrasound, CT, MRI, angiography, echocardiography, nuclear medicine, pathology, and procedure observations. This section often includes notable results such as abnormal values or relevant trends, and could record all results for the period of time being documented.

Laboratory results are typically generated by laboratories providing analytic services in areas such as chemistry, hematology, serology, histology, cytology, anatomic pathology, microbiology, and/or virology. These observations are based on analysis of specimens obtained from the patient and submitted to the laboratory.

Imaging results are typically generated by a clinician reviewing the output of an imaging procedure, such as where a cardiologist reports the left ventricular ejection fraction based on the review of an echocardiogram.

Procedure results are typically generated by a clinician wanting to provide more granular information about component observations made during the performance of a procedure, such as when a gastroenterologist reports the size of a polyp observed during a colonoscopy.

Note that there are discrepancies between CCD and the lab domain model, such as the effectiveTime in specimen collection.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7910) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.16" (CONF:10398).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15365).
 - a. This code **SHALL** contain exactly one [1..1] @code="11493-4" Hospital Discharge Studies Summary (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15366).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7912).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7913).

Figure 107: Hospital discharge studies summary section example

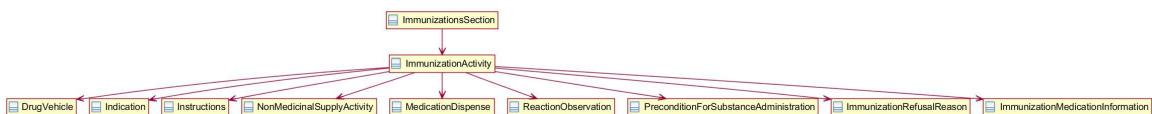
```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.16"/>
  <code code="11493-4"
        codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="HOSPITAL DISCHARGE STUDIES SUMMARY"/>
  <title>Hospital Discharge Studies Summary</title>
  <text>
    ...
  </text>
</section>
```

5.27 Immunizations Section 11369-6

Table 73: Immunizations Section Contexts

Used By:	Contains Entries:
Coded entries optional: Consultation Note (optional) Discharge Summary (optional) Continuity of Care Document (CCD) (optional) History and Physical (optional)	Immunization Activity
Coded entries required: ---	

Figure 108: Immunization section* UML diagram



*The [Large UML Diagrams](#) appendix provides a larger version of this diagram

The Immunizations section defines a patient's current immunization status and pertinent immunization history. The primary use case for the Immunization

section is to enable communication of a patient's immunization status. The section should include current immunization status, and may contain the entire immunization history that is relevant to the period of time being summarized.

Immunizations Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.2 (open)]

The following constraints apply to an Immunization section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7965) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.2"` (CONF:10399).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15367).
 - a. This code **SHALL** contain exactly one [1..1] `@code="11369-6"` Immunizations (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15368).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7967).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7968).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7969) such that it
 - a. **SHALL** contain exactly one [1..1] [Immunization Activity](#) (2.16.840.1.113883.10.20.22.4.52) (CONF:7970).

Immunizations Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.2.1 (open)]

The following constraints apply to an Immunization section in which entries are required.

1. Conforms to [Immunizations Section \(entries optional\)](#) template (2.16.840.1.113883.10.20.22.2.2)
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:9015) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.2.1"` (CONF:10400)
3. **SHALL** contain exactly one [1..1] **code** (CONF:15369).
 - a. This code **SHALL** contain exactly one [1..1] `@code="11369-6"` Immunizations (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15370).
4. **SHALL** contain exactly one [1..1] **title** (CONF:9017)
5. **SHALL** contain exactly one [1..1] **text** (CONF:9018)
6. **SHALL** contain at least one [1..*] **entry** (CONF:9019) such that it
 - a. **SHALL** contain exactly one [1..1] [Immunization Activity](#) (2.16.840.1.113883.10.20.22.4.52) (CONF:9020)

Figure 109: Immunization section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.2"/>
  <!-- ***** Immunizations section template ***** -->
  <code code="11369-6"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="History of immunizations"/>
  <title>Immunizations</title>
  <text>
    <table border="1" width="100%">
      <thead>
        <tr>
          <th>Vaccine</th>
          <th>Date</th>
          <th>Status</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td>
            <content ID="immun1"/>Influenza virus vaccine, IM</td>
            <td>Nov 1999</td>
            <td>Completed</td>
          </td>
        <tr>
          <td>
            <content ID="immun2"/>Influenza virus vaccine, IM</td>
            <td>Dec 1998</td>
            <td>Completed</td>
          </td>
        <tr>
          <td>
            <content ID="immun3"/>
            Pneumococcal polysaccharide vaccine, IM</td>
            <td>Dec 1998</td>
            <td>Completed</td>
          </td>
        <tr>
          <td>
            <content ID="immun4"/>Tetanus and diphtheria toxoids, IM</td>
            <td>1997</td>
            <td>Refused</td>
          </td>
        </tbody>
      </table>
    </text>
```

```

<entry typeCode="DRIV">
  <substanceAdministration classCode="SBADM" moodCode="EVN"
    negationInd="false">
    <templateId root="2.16.840.1.113883.10.20.22.4.52"/>
    <!-- **** Immunization activity template **** -->
    ...
  </substanceAdministration>
</entry>
...
</section>

```

5.28 Instructions Section 69730-0

[section: templateId 2.16.840.1.113883.10.20.22.2.45 (open)]

Table 74: Interventions Section Contexts

Used By:	Contains Entries:
History and Physical (optional) Progress Note (optional)	Instructions

The Instructions section records instructions given to a patient. List patient decision aids here.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:10112) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.45"` (CONF:10402).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15375).
 - a. This code **SHALL** contain exactly one [1..1] `@code="69730-0"`
 Instructions (CodeSystem: LOINC 2.16.840.1.113883.6.1)
 (CONF:15376).
3. **SHALL** contain exactly one [1..1] **title** (CONF:10114).
4. **SHALL** contain exactly one [1..1] **text** (CONF:10115).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:10116).
 - a. **SHALL** contain exactly one [1..1] [Instructions](#)
`(2.16.840.1.113883.10.20.22.4.20)` (CONF:10117).

Figure 110: Instructions section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.21.2.45"/>
  <code code="69730-0" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="INSTRUCTIONS"/>
  <title>INSTRUCTIONS</title>
  <text>
    Patient may have low grade fever, mild joint pain and injection area
    tenderness
  </text>
  <entry typeCode="DRIV">
    <act classCode="ACT" moodCode="INT">
      <templateId root="2.16.840.1.113883.10.20.22.4.20"/>
      <!-- *** Instructions template *** -->
      ...
    </supply>
  </act>
</section>
```

5.29 Interventions Section 62387-6

[section: templateId 2.16.840.1.113883.10.20.21.2.3(open)]

Table 75: Interventions Section Contexts

Used By:	Contains Entries:
Progress Note (optional)	

The Interventions section contains information about the specific interventions provided during the healthcare visit. Depending on the type of intervention(s) provided (procedural, education, application of assistive equipment, etc.), the details will vary but may include specification of frequency, intensity, and duration.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8680) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.21.2.3"` (CONF:10461).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15377).
 - a. This code **SHALL** contain exactly one [1..1] `@code="62387-6"` Interventions Provided (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15378).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8682).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8683).

Figure 111: Interventions section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.21.2.3"/>
  <code code="62387-6" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="INTERVENTIONS PROVIDED"/>
  <title>INTERVENTIONS PROVIDED</title>
  <text>
    <list listType="ordered">
      <item>Therapeutic exercise intervention: knee
        extension, 3 sets, 10 repetitions, 10-lb weight. </item>
      <item>Therapeutic exercise intervention: arm curl, 3 sets, 10
        repetitions, 15-lb weight </item>
    </list>
  </text>
</section>

```

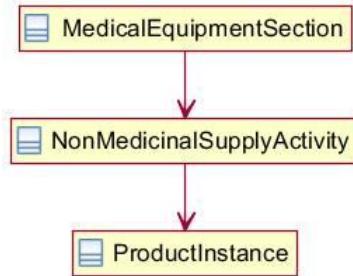
5.30 Medical Equipment Section 46264-8

[section: templateId 2.16.840.1.113883.10.20.22.2.23 (open)]

Table 76: Medical Equipment Section Contexts

Used By:	Contains Entries:
Continuity of Care Document (CCD) (optional)	Non-Medicinal Supply Activity

Figure 112: Medical equipment section UML diagram



The Medical Equipment section defines a patient's implanted and external medical devices and equipment that their health status depends on, as well as any pertinent equipment or device history. This section is also used to itemize any pertinent current or historical durable medical equipment (DME) used to help maintain the patient's health status. All pertinent equipment relevant to the diagnosis, care, and treatment of a patient should be included.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7944) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.2.23"** (CONF:10404).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15381).

- a. This code **SHALL** contain exactly one [1..1] @code="46264-8" Medical Equipment (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15382).
- 3. **SHALL** contain exactly one [1..1] **title** (CONF:7946).
- 4. **SHALL** contain exactly one [1..1] **text** (CONF:7947).
- 5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7948) such that it
 - a. **SHALL** contain exactly one [1..1] [Non-Medicinal Supply Activity](#) (2.16.840.1.113883.10.20.22.4.50) (CONF:8755).

Figure 113: Medical equipment section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.23"/>
  <!-- *** Medical equipment section template *** -->
  <code code="46264-8" codeSystem="2.16.840.1.113883.6.1"/>
  <title>Medical Equipment</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <supply classCode="SPLY" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.50"/>
      <!-- *** Non-medicinal supply activity template *** -->
      ...
    </supply>
  </entry>
</section>
```

5.31 Medical (General) History Section 11329-0

[section: templateId 2.16.840.1.113883.10.20.22.2.39(open)]

Table 77: Medical (General) History Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	

The Medical History section describes all aspects of the medical history of the patient even if not pertinent to the current procedure, and may include chief complaint, past medical history, social history, family history, surgical or procedure history, medication history, and other history information. The history may be limited to information pertinent to the current procedure or may be more comprehensive. The history may be reported as a collection of random clinical statements or it may be reported categorically. Categorical report formats may be divided into multiple subsections including Past Medical History, Social History.

- 1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8160) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.39" (CONF:10403).

2. **SHALL** contain exactly one [1..1] **code** (CONF:15379).
 - a. This code **SHALL** contain exactly one [1..1] @code="11329-0" Medical (General) History (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15380).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8162).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8163).

Figure 114: Medical (general) history section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.39"/>
  <code code="11329-0" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="MEDICAL (GENERAL) HISTORY"/>
  <title>MEDICAL (GENERAL) HISTORY</title>
  <text>
    <list listType="ordered">
      <item>Patient has had recent issue with acne that does not seem to
          be related to any particular cause.</item>
      <item>Previous concerns of oral cancer was actually irritated gums
          as a result of mild food allergy.</item>
      <item>Patient had recent weight gain due to sedentary lifestyle and
          new job.</item>
    </list>
  </text>
</section>
```

5.32 Medications Administered Section 29549-3

[section: templateId 2.16.840.1.113883.10.20.22.2.38 (open)]

Table 78: Medications Administered Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	Medication Activity

The Medications Administered section defines medications and fluids administered during the procedure, encounter, or other activity excluding anesthetic medications. This guide recommends anesthesia medications be documented as described in the section on [Anesthesia](#).

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8152) such that it
 - a. **SHALL** contain exactly one [1..1]

@root="2.16.840.1.113883.10.20.22.2.38" (CONF:10405).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15383).
 - a. This code **SHALL** contain exactly one [1..1] @code="29549-3" Medications Administered (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15384).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8154).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8155).

5. **MAY** contain zero or more [0..*] **entry** (CONF:8156).

- a. **SHALL** contain exactly one [1..1] **Medication Activity** (2.16.840.1.113883.10.20.22.4.16) (CONF:8157).

Figure 115: Medications administered section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.38" />
  <code code="29549-3"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="MEDICATIONS ADMINISTERED" />
  <title>Medications Administered</title>
  <text>Secretin 100 IU administered IV</text>
  <entry>
    <substanceAdministration classCode="SBADM" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
      <!-- Medication Activity template -->
      ...
    </entry>
  </section>
```

5.33 Medications Section 10160-0

Table 79: Medications Section Contexts

Used By:	Contains Entries:
Coded entries optional: Progress Note (optional) Consultation Note (optional) History and Physical (required) Procedure Note (optional)	<u>Medication Activity</u>

Figure 116: Medications section UML diagram



*The [Large UML Diagrams](#) appendix provides a larger version of this diagram

The Medications section defines a patient's current medications and pertinent medication history. At a minimum, the currently active medications are to be listed, with an entire medication history as an option. The section may also include a patient's prescription and dispense history.

This section requires that there be either an entry indicating the subject is not known to be on any medications, or that there be entries summarizing the subject's medications.

Medications Section With Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.1(open)]

The following constraints apply to a Medications section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7791) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.1"` (CONF:10432).
2. **SHALL** contain exactly one [1..1] `@code="10160-0"` History of medication use (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:7792).
3. **SHALL** contain exactly one [1..1] **title**="Medications" (CONF:7793).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7794).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7795) such that it
 - a. **SHALL** contain exactly one [1..1] **Medication Activity** (2.16.840.1.113883.10.20.22.4.16) (CONF:7796).
 - b. If medication use is unknown, the appropriate nullFlavor **MAY** be present (see unknown information in Section 1) (CONF:10076).

Medications Section With Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.1.1(open)]

The following constraints apply to a Medications section in which entries are required.

1. Conforms to **Medications Section (entries optional)** template (2.16.840.1.113883.10.20.22.2.1).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7568) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.1.1"` (CONF:10433).
3. **SHALL** contain exactly one [1..1] `@code="10160-0"` History of medication use (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:7569).
4. **SHALL** contain exactly one [1..1] **title**="Medications" (CONF:7570).
5. **SHALL** contain exactly one [1..1] **text** (CONF:7571).
6. **SHALL** contain at least one [1..*] **entry** (CONF:7572) such that it
 - a. **SHALL** contain exactly one [1..1] **Medication Activity** (2.16.840.1.113883.10.20.22.4.16) (CONF:7573).
 - b. If medication use is unknown, the appropriate nullFlavor **MAY** be present (see unknown information in Section 1) (CONF:10077).

Figure 117: Medications section entries example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.1"/>
  <code code="10160-0"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="HISTORY OF MEDICATION USE"/>
  <title>MEDICATIONS</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <substanceAdministration classCode="SBADM" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
      <!-- Medication Activity template -->
      ...
    </substanceAdministration>
  </entry>
</section>
```

5.34 Objective Section 61149-1

[section: templateId 2.16.840.1.113883.10.20.21.2.1(open)]

Table 80: Objective Section Contexts

Used By:	Contains Entries:
Progress Note (optional)	

The Objective section contains data about the patient gathered through tests, measures, or observations that produce a quantified or categorized result. It includes important and relevant positive and negative test results, physical findings, review of systems, and other measurements and observations.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7869) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.21.2.1"` (CONF:10462).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15389).
 - a. This code **SHALL** contain exactly one [1..1] `@code="61149-1"` Objective (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15390).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7871).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7872).

Figure 118: Objective section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.21.2.1"/>
  <code code="61149-1 " codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="OBJECTIVE DATA "/>
  <title>OBJECTIVE DATA</title>
  <text>
    <list listType="ordered">
      <item>Chest: clear to ausc. No rales, normal breath sounds</item>
      <item>Heart: RR, PMI in normal location and no heave or evidence
        of
          cardiomegaly,normal heart sounds, no murmur or gallop</item>
    </list>
  </text>
</section>
```

5.35 Operative Note Fluid Section 10216-0

[section: templateId 2.16.840.1.113883.10.20.7.12 (open)]

Table 81: Operative Note Fluids Section Contexts

Used By:	Contains Entries:
Operative Note (optional)	

The Operative Note Fluids section may be used to record fluids administered during the surgical procedure.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8030) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.7.12" (CONF:10463).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15391).
 - a. This code **SHALL** contain exactly one [1..1] @code="10216-0" Operative Note Fluids (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15392).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8032).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8033).
5. If the Operative Note Fluids section is present, there **SHALL** be a statement providing details of the fluids administered or **SHALL** explicitly state there were no fluids administered (CONF:8052).

Figure 119: Operative Note fluid section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.7.12"/>
  <code code="10216-0"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="SURGICAL OPERATION NOTE FLUIDS"/>
  <title>Operative Note Fluids</title>
  <text>250 ML Ringers Lactate</text>
</section>
```

5.36 Operative Note Surgical Procedure Section 10223-6

[section: templateId 2.16.840.1.113883.10.20.7.14 (open)]

Table 82: Operative Note Surgical Procedure Section Contexts

Used By:	Contains Entries:
Operative Note (optional)	

The Operative Note Surgical Procedure section can be used to restate the procedures performed if appropriate for an enterprise workflow. The procedure(s) performed associated with the Operative Note are formally modeled in the header using serviceEvent.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8034) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.7.14" (CONF:10464).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15393).
 - a. This code **SHALL** contain exactly one [1..1] @code="10223-6" Operative Note Surgical Procedure (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15394).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8036).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8037).
5. If the surgical procedure section is present there **SHALL** be text indicating the procedure performed (CONF:8054).

Figure 120: Operative Note surgical procedure section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.7.14"/>
  <code code="10223-6"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="SURGICAL OPERATION NOTE SURGICAL PROCEDURE"/>
  <title>Surgical Procedure</title>
  <text>Laparoscopic Appendectomy</text>
</section>
```

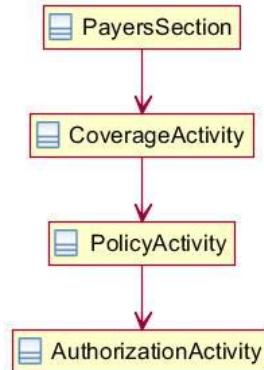
5.37 Payers Section 48768-6

[section: templateId 2.16.840.1.113883.10.20.22.2.18 (open)]

Table 83: Payers Section Contexts

Used By:	Contains Entries:
Continuity of Care Document (CCD) (optional)	Coverage Activity

Figure 121: Payers section UML diagram



The Payers section contains data on the patient's payers, whether a 'third party' insurance, self-pay, other payer or guarantor, or some combination of payers, and is used to define which entity is the responsible fiduciary for the financial aspects of a patient's care.

Each unique instance of a payer and all the pertinent data needed to contact, bill to, and collect from that payer should be included. Authorization information that can be used to define pertinent referral, authorization tracking number, procedure, therapy, intervention, device, or similar authorizations for the patient or provider, or both should be included. At a minimum, the patient's pertinent current payment sources should be listed.

The sources of payment are represented as a Coverage Activity, which identifies all of the insurance policies or government or other programs that cover some or all of the patient's healthcare expenses. The policies or programs are sequenced by preference. The Coverage Activity has a sequence number that represents the preference order. Each policy or program identifies the covered party with respect to the payer, so that the identifiers can be recorded.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7924) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.18" (CONF:10434).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15395).
 - a. This code **SHALL** contain exactly one [1..1] @code="48768-6" Payers (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15396).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7926).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7927).

5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7959) such that it
- SHALL** contain exactly one [1..1] **Coverage Activity** (2.16.840.1.113883.10.20.22.4.60) (CONF:8905).

Figure 122: Payers section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.18"/>
  <!-- ***** Payers section template ***** -->
  <code code="48768-6" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC" displayName="Payments"/>
  <title>Insurance Providers</title>
  <text>
    <table border="1" width="100%">
      <thead>
        <tr>
          <th>Payer name</th>
          <th>Policy type / Coverage type</th>
          <th>Policy ID</th>
          <th>Covered party ID</th>
          <th>Policy Holder</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td>Good Health Insurance</td>
          <td>Extended healthcare / Family</td>
          <td>Contract Number</td>
          <td>1138345</td>
          <td>Patient's Mother</td>
        </tr>
      </tbody>
    </table>
  </text>
  <entry typeCode="DRIV">
    <act classCode="ACT" moodCode="DEF">
      <templateId root="2.16.840.1.113883.10.20.22.4.60"/>
      <!-- **** Coverage entry template **** -->
      ...
    </act>
  </entry>
</section>

```

5.38 Physical Exam Section 29545-1

[section: templateId 2.16.840.1.113883.10.20.2.10 (open)]

Table 84: Physical Exam Section Contexts

Used By:	Contains Entries:
Progress Note (optional)	Highest Pressure Ulcer Stage
Consultation Note (optional)	Number of Pressure Ulcers Observation
History and Physical (required)	Pressure Ulcer Observation
Procedure Note (optional)	

The Physical Exam section includes direct observations made by the clinician. The examination may include the use of simple instruments and may also describe simple maneuvers performed directly on the patient's body. This section includes only observations made by the examining clinician using inspection, palpation, auscultation, and percussion; it does not include laboratory or imaging findings. The exam may be limited to pertinent body systems based on the patient's chief complaint or it may include a comprehensive examination. The examination may be reported as a collection of random clinical statements or it may be reported categorically.

The Physical Exam section may contain multiple nested subsections: [Vital Signs](#), [General Status](#), and those listed in the [Additional Physical Examination Subsections](#) appendix.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7806) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.2.10"` (CONF:10465).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15397).
 - a. This code **SHALL** contain exactly one [1..1] `@code="29545-1"` Physical Findings (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15398).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7808).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7809).
5. **MAY** contain zero or more [0..*] **entry** (CONF:17094) such that it
 - a. **SHALL** contain exactly one [1..1] [Pressure Ulcer Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.70) (CONF:17095).
6. **MAY** contain zero or more [0..*] **entry** (CONF:17096) such that it
 - a. **SHALL** contain exactly one [1..1] [Number of Pressure Ulcers Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.76) (CONF:17097).
7. **MAY** contain zero or more [0..*] **entry** (CONF:17098) such that it
 - a. **SHALL** contain exactly one [1..1] [Highest Pressure Ulcer Stage](#) (templateId:2.16.840.1.113883.10.20.22.4.77) (CONF:17099).

Figure 123: Physical exam section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.2.10"/>
  <code codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
    code="29545-1" displayName="PHYSICAL FINDINGS"/>
  <title>PHYSICAL EXAMINATION</title>
  <text>
    <paragraph>All normal to examination.</paragraph>
  </text>
</section>

```

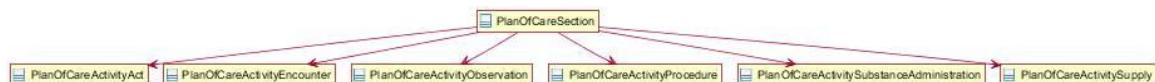
5.39 Plan of Care Section 18776-5

[section: templateId 2.16.840.1.113883.10.20.22.2.10(open)]

Table 85: Plan of Care Section Contexts

Used By:	Contains Entries:
Progress Note (optional)	Instructions
Consultation Note (optional)	Plan of Care Activity Act
Discharge Summary (required)	Plan of Care Activity Encounter
History and Physical (optional)	Plan of Care Activity Observation
Procedure Note (optional)	Plan of Care Activity Procedure
Operative Note (optional)	Plan of Care Activity Substance Administration
Continuity of Care Document (CCD) (optional)	Plan of Care Activity Supply

Figure 124: Plan of care section UML diagram



*The [Large UML Diagrams](#) appendix provides a larger version of this diagram

The Plan of Care section contains data that defines pending orders, interventions, encounters, services, and procedures for the patient. It is limited to prospective, unfulfilled, or incomplete orders and requests only, which are indicated by the @moodCode of the entries within this section. All active, incomplete, or pending orders, appointments, referrals, procedures, services, or any other pending event of clinical significance to the current care of the patient should be listed unless constrained due to privacy issues. The plan may also contain information about ongoing care of the patient and information regarding goals and clinical reminders. Clinical reminders are placed here to provide prompts for disease prevention and management, patient safety, and health-care quality improvements, including widely accepted performance measures. The plan may also indicate that patient education will be provided.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7723) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.10" (CONF:10435).

2. **SHALL** contain exactly one [1..1] **code** (CONF:14749).
 - a. This code **SHALL** contain exactly one [1..1] @code="18776-5" Plan of Care (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:14750).
3. **SHALL** contain exactly one [1..1] **title** (CONF:16986).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7725).
5. **MAY** contain zero or more [0..*] **entry** (CONF:7726) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Act](#) (2.16.840.1.113883.10.20.22.4.39) (CONF:8804).
6. **MAY** contain zero or more [0..*] **entry** (CONF:8805) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Encounter](#) (2.16.840.1.113883.10.20.22.4.40) (CONF:8806).
7. **MAY** contain zero or more [0..*] **entry** (CONF:8807) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Observation](#) (2.16.840.1.113883.10.20.22.4.44) (CONF:8808).
8. **MAY** contain zero or more [0..*] **entry** (CONF:8809) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Procedure](#) (2.16.840.1.113883.10.20.22.4.41) (CONF:8810).
9. **MAY** contain zero or more [0..*] **entry** (CONF:8811) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Substance Administration](#) (2.16.840.1.113883.10.20.22.4.42) (CONF:8812).
10. **MAY** contain zero or more [0..*] **entry** (CONF:8813) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Supply](#) (templateId:2.16.840.1.113883.10.20.22.4.43) (CONF:14756).
11. **MAY** contain zero or more [0..*] **entry** (CONF:14695) such that it
 - a. **SHALL** contain exactly one [1..1] [Instructions](#) (templateId:2.16.840.1.113883.10.20.22.4.20) (CONF:16751).

Figure 125: Plan of care section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.10" />
  <!-- **** Plan of Care section template **** -->
  <code code="18776-5" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC" displayName="Treatment plan"/>
  <title>Plan of Care</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIX">
    <observation classCode="OBS" moodCode="RQO">
      <templateId root="2.16.840.1.113883.10.20.22.4.44"/>
      <!-- **** Plan of Care Activity Observation template **** -->
    >
    ...
    </observation>
  </entry>

```

```

<entry>
  <act moodCode="RQO" classCode="ACT">
    <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
    <!-- **** Plan of Care Activity Act template **** -->
    ...
  </act>
</entry>
<entry>
  <encounter moodCode="INT" classCode="ENC">
    <templateId root="2.16.840.1.113883.10.20.22.4.40"/>
    <!-- **** Plan of Care Activity Encounter template **** -->
    ...
  </encounter>
</entry>
<entry>
  <procedure moodCode="RQO" classCode="PROC">
    <templateId root="2.16.840.1.113883.10.20.22.4.41"/>
    <!-- **** Plan of Care Activity Procedure Template **** -->
    ...
  </procedure>
</entry>
<entry>
  <substanceAdministration moodCode="RQO" classCode="SBADM">
    <templateId root="2.16.840.1.113883.10.20.22.4.42"/>
    <!-- **** Plan of Care Activity Substance Administration **** -->
  ...
  </substanceAdministration>
</entry>
<entry>
  <supply moodCode="INT" classCode="SPLY">
    <templateId root="2.16.840.1.113883.10.20.22.4.43"/>
    <!-- ** Plan of Care Activity Supply ** -->
    ...
  </supply>
</entry>
</section>

```

5.40 Planned Procedure Section 59772-4

[section: templateId 2.16.840.1.113883.10.20.22.2.30(open)]

Table 86: Planned Procedure Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	Plan of Care Activity Procedure
Operative Note (optional)	

The Planned Procedure section records the procedure(s) that a clinician thought would need to be done based on the preoperative assessment. It may be important to record the procedure(s) that were originally planned for, consented to, and perhaps pre-approved by the payor, particularly if different from the actual procedure(s) and procedure details, to provide evidence to various

stakeholders that the providers are aware of the discrepancy and the justification can be found in the procedure details.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8082) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.30"` (CONF:10436).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15399).
 - a. This code **SHALL** contain exactly one [1..1] `@code="59772-4"` Planned Procedure (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15400).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8084).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8085).
5. **MAY** contain zero or more [0..*] **entry** (CONF:8744) such that it
 - a. **SHALL** contain exactly one [1..1] [Plan of Care Activity Procedure](#) (2.16.840.1.113883.10.20.22.4.41) (CONF:8766).

Figure 126: Planned procedure section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.30"/>
  <!-- ***** Planned Procedure Section template ***** -->
  <code code="59772-4" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC" displayName="Planned Procedure"/>
  <title>Planned Procedure</title>
  <text>
    ...
  </text>
  <entry>
    <procedure moodCode="RQO" classCode="PROC">
      <templateId root="2.16.840.1.113883.10.20.22.4.41"/>
      <!-- ** Plan of Care Activity Procedure Template ** -->
      ...
    </procedure>
  </entry>
</section>
```

5.41 Postoperative Diagnosis Section 10218-6

[section: templateId 2.16.840.1.113883.10.20.22.2.35 (open)]

Table 87: Postoperative Diagnosis Section Contexts

Used By:	Contains Entries:
<u>Operative Note</u> (required)	

The Postoperative Diagnosis section records the diagnosis or diagnoses discovered or confirmed during the surgery. Often it is the same as the preoperative diagnosis.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8101) such that it

- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.35" (CONF:10437).
- 2. **SHALL** contain exactly one [1..1] **code** (CONF:15401).
 - a. This code **SHALL** contain exactly one [1..1] @code="10218-6" Postoperative Diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15402).
- 3. **SHALL** contain exactly one [1..1] **title** (CONF:8103).
- 4. **SHALL** contain exactly one [1..1] **text** (CONF:8104).

Figure 127: Postoperative diagnosis section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.35"/>
  <code code="10218-6"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="POSTOPERATIVE DIAGNOSIS"/>
  <title>Postoperative Diagnosis</title>
  <text>Appendicitis with periappendiceal abscess</text>
</section>
```

5.42 Postprocedure Diagnosis Section 59769-0

[section: templateId 2.16.840.1.113883.10.20.22.2.36(open)]

Table 88: Postprocedure Diagnosis Section Contexts

Used By:	Contains Entries:
Procedure Note (required)	Postprocedure Diagnosis

The Postprocedure Diagnosis section records the diagnosis or diagnoses discovered or confirmed during the procedure. Often it is the same as the pre-procedure diagnosis or indication.

- 1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8167) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.36" (CONF:10438).
- 2. **SHALL** contain exactly one [1..1] **code** (CONF:15403).
 - a. This code **SHALL** contain exactly one [1..1] @code="59769-0" Postprocedure Diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15404).
- 3. **SHALL** contain exactly one [1..1] **title** (CONF:8170).
- 4. **SHALL** contain exactly one [1..1] **text** (CONF:8171).
- 5. **SHOULD** contain zero or one [0..1] **entry** (CONF:8762) such that it
 - a. **SHALL** contain exactly one [1..1] [Postprocedure Diagnosis](#) (2.16.840.1.113883.10.20.22.4.51) (CONF:8764).

Figure 128: Postprocedure diagnosis section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.36"/>
  <code code="59769-0" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="POSTPROCEDURE DIAGNOSIS"/>
  <title>Postprocedure Diagnosis</title>
  <text>
    ...
  </text>
  <entry>
    <act moodCode="EVN" classCode="ACT">
      <templateId root="2.16.840.1.113883.10.20.22.4.51"/>
      <!-- ** Postprocedure Diagnosis Entry ** -->
      ...
    </act>
  </entry>
</section>
```

5.43 Preoperative Diagnosis Section 10219-4

[section: templateId 2.16.840.1.113883.10.20.22.2.34 (open)]

Table 89: Preoperative Diagnosis Section Contexts

Used By:	Contains Entries:
Operative Note (required)	Preoperative Diagnosis

The Preoperative Diagnosis section records the surgical diagnosis or diagnoses assigned to the patient before the surgical procedure and is the reason for the surgery. The preoperative diagnosis is, in the opinion of the surgeon, the diagnosis that will be confirmed during surgery.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8097) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.34"` (CONF:10439).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15405).
 - a. This code **SHALL** contain exactly one [1..1] `@code="10219-4"` Preoperative Diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15406).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8099).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8100).
5. **SHOULD** contain zero or one [0..1] **entry** (CONF:10096) such that it
 - a. **SHALL** contain exactly one [1..1] [Preoperative Diagnosis](#) (2.16.840.1.113883.10.20.22.4.65) (CONF:10097).

Figure 129: Preoperative diagnosis section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.34"/>
  <code code="10219-4"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="SURGICAL OPERATION NOTE PREOPERATIVE DX"/>
  <title>Preoperative Diagnosis</title>
  <text>Appendicitis</text>
  <entry>
    <act moodCode="EVN" classCode="ACT">
      <templateId root="2.16.840.1.113883.10.20.22.4.65"/>
      <!-- ** Preoperative Diagnosis Entry ** -->
      ...
    </act>
  </entry>
</section>

```

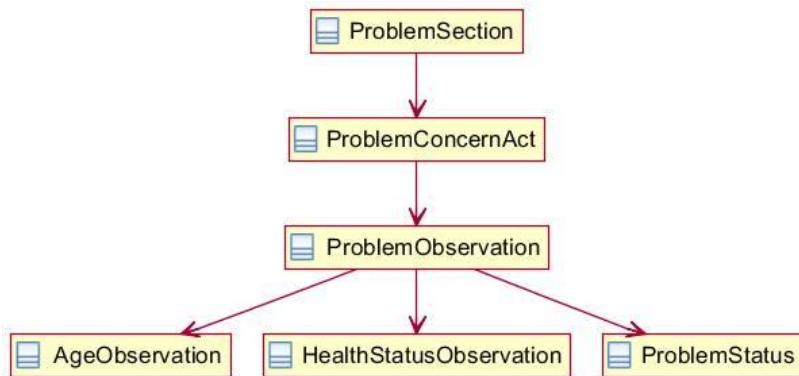
5.44 Problem Section 11450-4

Table 90: Problem Section Contexts

Used By:	Contains Entries:
Entries optional: Progress Note (optional) Consultation Note (optional) Discharge Summary (optional) History and Physical (optional)	Problem Concern Act (Condition)

Entries required:	
Continuity of Care Document (CCD) (required)	

Figure 130: Problem section UML diagram



This section lists and describes all relevant clinical problems at the time the document is generated. At a minimum, all pertinent current and historical problems should be listed.

Problem Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.5 (open)]

The following constraints apply to a Problem section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7877) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.5"` (CONF:10440).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15407).
 - a. This code **SHALL** contain exactly one [1..1] `@code="11450-4"` Problem List (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15408).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7879).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7880).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7881).
 - a. **SHALL** contain exactly one [1..1] [Problem Concern Act \(Condition\)](#) (2.16.840.1.113883.10.20.22.4.3) (CONF:7882).

Problem Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.5.1 (open)]

The following constraints apply to a Problem section in which entries are required.

1. Conforms to [Problem Section \(entries optional\)](#) template (2.16.840.1.113883.10.20.22.2.5).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:9179) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.5.1"` (CONF:10441).
3. **SHALL** contain exactly one [1..1] **code** (CONF:15409).
 - a. This code **SHALL** contain exactly one [1..1] `@code="11450-4"` Problem List (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15410).
4. **SHALL** contain exactly one [1..1] **title** (CONF:9181).
5. **SHALL** contain exactly one [1..1] **text** (CONF:9182).
6. **SHALL** contain at least one [1..*] **entry** (CONF:9183).
 - a. **SHALL** contain exactly one [1..1] [Problem Concern Act \(Condition\)](#) (2.16.840.1.113883.10.20.22.4.3) (CONF:9184).

Figure 131: Problem section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.5"/>
  <code code="11450-4" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="PROBLEM LIST"/>
  <title>PROBLEMS</title>
  <text>
    <list listType="ordered">
      <item>Pneumonia: Resolved in March 1998 </item>
      <item>...</item>
    </list>
  </text>
  <entry typeCode="DRIV">
    <act classCode="ACT" moodCode="EVN">
      <!-- Problem Concern Act (Condition) template -->
      ...
    </act>
  </entry>
</section>
```

Figure 132: Pressure ulcer on a problem list example

```
<component>
  <section>
    <templateId root="2.16.840.1.113883.10.20.22.2.5"/>
    <code code="11450-4" codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC" displayName="PROBLEM LIST"/>
    <title>Problems</title>
    <text>
      <list listType="ordered">
        <item>2 Stage 3 Pressure Ulcers</item>
        <item>...</item>
      </list>
    </text>
    <entry typeCode="DRIV">
      <act classCode="ACT" moodCode="EVN">
        <!-- Problem act template -->
        <templateId root="2.16.840.1.113883.10.20.22.4.3"/>
        <id root="ec8a6ff8-ed4b-4f7e-82c3-e98e58b45de7"/>
        <code code="CONC" displayName="Concern"
          codeSystem="2.16.840.1.113883.5.6"
          codeSystemName="HL7ActClass"/>
        <statusCode code="completed"/>
        <effectiveTime>
          <!-- date of onset -->
          <low value="20120101"/>
        </effectiveTime>
      </act>
    </entry>
  </section>
</component>
```

5.45 Procedure Description Section 29554-3

[section: templateId 2.16.840.1.113883.10.20.22.2.27 (open)]

Table 91: Procedure Description Section Contexts

Used By:	Contains Entries:
Procedure Note (required) Operative Note (required)	

The Procedure Description section records the particulars of the procedure and may include procedure site preparation, surgical site preparation, pertinent details related to sedation/anesthesia, pertinent details related to measurements and markings, procedure times, medications administered, estimated blood loss, specimens removed, implants, instrumentation, sponge counts, tissue manipulation, wound closure, sutures used, vital signs and other monitoring data. Local practice often identifies the level and type of detail required based on the procedure or specialty.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8062) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.2.27" (CONF:10442).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15411).
 - a. This code **SHALL** contain exactly one [1..1] @code="29554-3" Procedure Description (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15412).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8064).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8065).

Figure 133: Procedure description section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.27" />
  <code code="29554-3"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="PROCEDURE DESCRIPTION" />
  <title>Procedure Description</title>
  <text>The patient was taken to the endoscopy suite where ...
</text>
</section>
```

5.46 Procedure Disposition Section 59775-7

[section: templateId 2.16.840.1.113883.10.20.18.2.12(open)]

Table 92: Procedure Disposition Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	
Operative Note (optional)	

The Procedure Disposition section records the status and condition of the patient at the completion of the procedure or surgery. It often also states where the patient was transferred to for the next level of care.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8070) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.18.2.12" (CONF:10466).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15413).
 - a. This code **SHALL** contain exactly one [1..1] @code="59775-7" Procedure Disposition (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15414).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8072).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8073).

Figure 134: Procedure disposition section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.18.2.12"/>
  <code code="59775-7" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="PROCEDURE DISPOSITION"/>
  <title>PROCEDURE DISPOSITION</title>
  <text>The patient was taken to the Endoscopy Recovery Unit in stable
        condition.</text>
</section>
```

5.47 Procedure Estimated Blood Loss Section 59770-8

[section: templateId 2.16.840.1.113883.10.20.18.2.9(open)]

Table 93: Procedure Estimated Blood Loss Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	
Operative Note (required)	

The Estimated Blood Loss section may be a subsection of another section such as the Procedure Description section. The Estimated Blood Loss section records the approximate amount of blood that the patient lost during the procedure or

surgery. It may be an accurate quantitative amount, e.g., 250 milliliters, or it may be descriptive, e.g., "minimal" or "none".

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8074) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.18.2.9"` (CONF:10467).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15415).
 - a. This code **SHALL** contain exactly one [1..1] `@code="59770-8"`
Procedure Estimated Blood Loss (CodeSystem: LOINC
2.16.840.1.113883.6.1) (CONF:15416).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8076).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8077).
5. The Estimated Blood Loss section **SHALL** include a statement providing an estimate of the amount of blood lost during the procedure, even if the estimate is text, such as "minimal" or "none" (CONF:8741).

Figure 135: Procedure estimated blood loss section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.18.2.9"/>
  <code code="59770-8" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="PROCEDURE ESTIMATED BLOOD
LOSS"/>
  <title>Procedure Estimated Blood Loss</title>
  <text>Minimal</text>
</section>
```

5.48 Procedure Findings Section 59776-5

[section: templateId 2.16.840.1.113883.10.20.22.2.28 (open)]

Table 94: Procedure Findings Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	Problem Observation
Operative Note (required)	

The Procedure Findings section records clinically significant observations confirmed or discovered during the procedure or surgery.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8078) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.28"` (CONF:10443).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15417).
 - a. This code **SHALL** contain exactly one [1..1] `@code="59776-5"`
Procedure Findings (CodeSystem: LOINC 2.16.840.1.113883.6.1)
(CONF:15418).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8080).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8081).

5. **MAY** contain zero or more [0..*] **entry** (CONF:8090) such that it
 - a. **SHALL** contain exactly one [1..1] [Problem Observation](#) (2.16.840.1.113883.10.20.22.4.4) (CONF:8091).

Figure 136: Procedure findings section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.28" />
  <code code="59776-5"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="PROCEDURE FINDINGS" />
  <title>Procedure Findings</title>
  <text>A 6 mm sessile polyp was found in the ascending colon and
removed by
  snare, no cautery. Bleeding was controlled. Moderate
diverticulosis
  and hemorrhoids were incidentally noted.</text>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
      <!-- Problem Observation -->
      ...
    </observation>
  </entry>
</section>
```

5.49 Procedure Implants Section 59771-6

[section: templateId 2.16.840.1.113883.10.20.22.2.40(open)]

Table 95: Procedure Implants Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	
Operative Note (optional)	

The Procedure Implants section records any materials placed during the procedure including stents, tubes, and drains.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8178) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.40" (CONF:10444).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15373).
 - a. This code **SHALL** contain exactly one [1..1] @code="59771-6" Procedure Implants (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15374).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8180).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8181).
5. The Implants section **SHALL** include a statement providing details of the implants placed, or assert no implants were placed (CONF:8769).

Figure 137: Procedure implants section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.40"/>
  <code code="59771-6" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="PROCEDURE IMPLANTS"/>
  <title>Procedure Implants</title>
  <text>No implants were placed.</text>
</section>
```

5.50 Procedure Indications Section 59768-2

[section: templateId 2.16.840.1.113883.10.20.22.2.29 (open)]

Table 96: Procedure Indications Section Contexts

Used By:	Contains Entries:
Procedure Note (required)	Indication
Operative Note (optional)	

The Procedure Indications section records details about the reason for the procedure or surgery. This section may include the pre-procedure diagnosis or diagnoses as well as one or more symptoms that contribute to the reason the procedure is being performed.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8058) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.29"` (CONF:10445).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15419).
 - a. This code **SHALL** contain exactly one [1..1] `@code="59768-2"`
Procedure Indications (CodeSystem: LOINC
2.16.840.1.113883.6.1) (CONF:15420).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8060).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8061).
5. **MAY** contain zero or more [0..*] **entry** (CONF:8743) such that it
 - a. **SHALL** contain exactly one [1..1] [Indication](#)
(2.16.840.1.113883.10.20.22.4.19) (CONF:8765).

Figure 138: Procedure indications section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.29"/>
  <code code="59768-2" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="PROCEDURE INDICATIONS"/>
  <title>Procedure Indications</title>
  <text>The procedure is performed for screening in a low risk
individual.
  </text>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <!-- Indication Entry -->
      <templateId root="2.16.840.1.113883.10.20.22.4.19"/>
      ...
    </observation>
  </entry>
</section>
```

5.51 Procedure Specimens Taken Section 59773-2

[section: templateId 2.16.840.1.113883.10.20.22.2.31(open)]

Table 97: Procedure Specimens Taken Section Contexts

Used By:	Contains Entries:
Procedure Note (optional)	
Operative Note (required)	

The Procedure Specimens Taken section records the tissues, objects, or samples taken from the patient during the procedure including biopsies, aspiration fluid, or other samples sent for pathological analysis. The narrative may include a description of the specimens.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8086) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.2.31" (CONF:10446).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15421).
 - a. This code **SHALL** contain exactly one [1..1] @code="59773-2"
Procedure Specimens Taken (CodeSystem: LOINC
2.16.840.1.113883.6.1) (CONF:15422).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8088).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8089).
5. The Procedure Specimens Taken section **SHALL** list all specimens removed or **SHALL** explicitly state that no specimens were taken (CONF:8742).

Figure 139: Procedure specimens taken section example

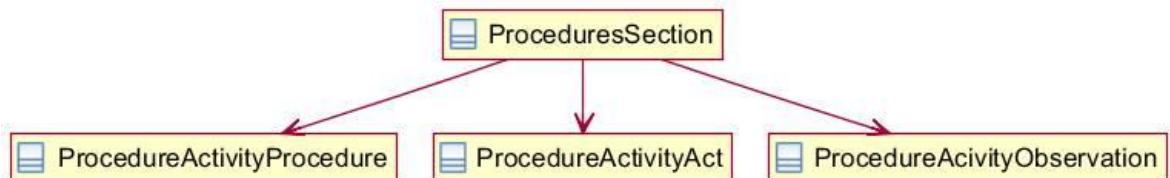
```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.31"/>
  <code code="59773-2"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="PROCEDURE SPECIMENS TAKEN"/>
  <title>Procedure Specimens Taken</title>
  <text>Ascending colon polyp</text>
</section>
```

5.52 Procedures Section 47519-4

Table 98: Procedures Section Contexts

Used By:	Contains Entries:
Entries optional: Consultation Note (optional) Discharge Summary (optional) Procedure Note (optional) History and Physical (optional)	Procedure Activity Act Procedure Activity Observation Procedure Activity Procedure

Figure 140: Procedures section UML diagram



This section defines all interventional, surgical, diagnostic, or therapeutic procedures or treatments pertinent to the patient historically at the time the document is generated. The section is intended to include notable procedures, but can contain all procedures for the period of time being summarized. The common notion of "procedure" is broader than that specified by the HL7 Version 3 Reference Information Model (RIM). Therefore this section contains procedure templates represented with three RIM classes: Act, Observation, and Procedure. Procedure act is for procedures that alter the physical condition of a patient (Splenectomy). Observation act is for procedures that result in new information about a patient but do not cause physical alteration (EEG). Act is for all other types of procedures (dressing change).

The length of an encounter is documented in the documentationOf/encompassingEncounter/effectiveTime and length of service in documentationOf/ServiceEvent/effectiveTime.

Procedures Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.7 (open)]

The following constraints apply to a Procedures section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:6270) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.7"` (CONF:6271).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15423).
 - a. This code **SHALL** contain exactly one [1..1] `@code="47519-4"` History of Procedures (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15424).
3. **SHALL** contain exactly one [1..1] **title** (CONF:17184).
4. **SHALL** contain exactly one [1..1] **text** (CONF:6273).
5. **MAY** contain zero or more [0..*] **entry** (CONF:6274) such that it
 - a. **SHALL** contain exactly one [1..1] [Procedure Activity Procedure](#) (templateId:2.16.840.1.113883.10.20.22.4.14) (CONF:15509).
6. **MAY** contain zero or one [0..1] **entry** (CONF:6278) such that it
 - a. **SHALL** contain exactly one [1..1] [Procedure Activity Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.13) (CONF:15510).
7. **MAY** contain zero or one [0..1] **entry** (CONF:8533) such that it
 - a. **SHALL** contain exactly one [1..1] [Procedure Activity Act](#) (templateId:2.16.840.1.113883.10.20.22.4.12) (CONF:15511).

Procedures Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.7.1 (open)]

The following constraints apply to a Procedures section in which entries are required.

1. Conforms to [Procedures Section \(entries optional\)](#) template (2.16.840.1.113883.10.20.22.2.7)
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7891) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.2.7.1"` ([CONF:10447](#)).
3. **SHALL** contain exactly one [1..1] **code** (CONF:15425).
 - a. This code **SHALL** contain exactly one [1..1] `@code="47519-4"` History of Procedures (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15426).
4. **SHALL** contain exactly one [1..1] **title** (CONF:7893).
5. **SHALL** contain exactly one [1..1] **text** (CONF:7894).
6. **MAY** contain zero or more [0..*] **entry** (CONF:7895) such that it
 - a. **SHALL** contain exactly one [1..1] [Procedure Activity Procedure](#) (2.16.840.1.113883.10.20.22.4.14) (CONF:7896).

7. **MAY** contain zero or more [0..*] **entry** (CONF:8017) such that it
 - a. **SHALL** contain exactly one [1..1] [Procedure Activity Observation](#) (2.16.840.1.113883.10.20.22.4.13) (CONF:8018).
8. **MAY** contain zero or more [0..*] **entry** (CONF:8019) such that it
 - a. **SHALL** contain exactly one [1..1] [Procedure Activity Act](#) (2.16.840.1.113883.10.20.22.4.12) (CONF:8020).
9. There **SHALL** be at least one procedure, observation or act entry conformant to Procedure Activity Procedure template, Procedure Activity Observation template or Procedure Activity Act template in the Procedure Section (CONF:8021).

Figure 141: Procedures section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.7"/>
  <!-- Procedures section template -->
  <code code="47519-4"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="PROCEDURES" />
  <title>Procedures</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <procedure classCode="PROC" moodCode="EVN">
      <!-- Procedure Activity Procedure template -->
      <templateId root="2.16.840.1.113883.10.20.22.4.14"/>
      ...
    </procedure>
  </entry>
  <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.13"/>
      <!-- Procedure Activity Observation template -->
      ...
    </observation>
  </entry>
  <entry>
    <act classCode="ACT" moodCode="INT">
      <templateId root="2.16.840.1.113883.10.20.22.4.12"/>
      <!-- Procedure Activity Act template -->
      ...
    </act>
  </entry>
</section>

```

5.53 Reason for Referral Section 42349-1

[section: templateId 1.3.6.1.4.1.19376.1.5.3.1.3.1(open)]

Table 99: Reason for Referral Section Contexts

Used By:	Contains Entries:
Consultation Note (optional)	

A Reason for Referral section records the reason the patient is being referred for a consultation by a provider. An optional Chief Complaint section may capture the patient's description of the reason for the consultation.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7844) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"` (CONF:10468).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15427).
 - a. This code **SHALL** contain exactly one [1..1] `@code="42349-1"` Reason for Referral (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15428).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7846).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7847).

Figure 142: Reason for referral section example

```
<section>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.3.1"/>
  <!-- ** Reason for Referral Section Template ** -->
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC" code="42349-1"
        displayName="REASON FOR REFERRAL"/>
  <title>REASON FOR REFERRAL</title>
  <text>
    <paragraph>Lumbar spinal stenosis with radiculopathy.</paragraph>
  </text>
</section>
```

5.54 Reason for Visit Section 29299-5

[section: templateId 2.16.840.1.113883.10.20.22.2.12 (open)]

Table 100: Reason for Visit Section Contexts

Used By:	Contains Entries:
Consultation Note (optional) Discharge Summary (optional) History and Physical (required) Procedure Note (optional)	

This section records the patient's reason for the patient's visit (as documented by the provider). Local policy determines whether Reason for Visit and Chief Complaint are in separate or combined sections.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7836) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.2.12" (CONF:10448).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15429).
 - a. This code **SHALL** contain exactly one [1..1] @code="29299-5" Reason for Visit (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15430).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7838).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7839).

Figure 143: Reason for visit section example

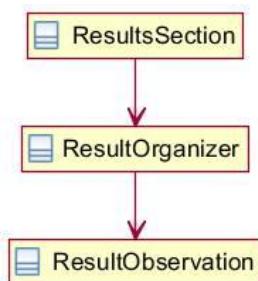
```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.12"/>
  <code code="29299-5"
        codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="REASON FOR VISIT"/>
  <title>REASON FOR VISIT</title>
  <text>
    <paragraph>Dark stools.</paragraph>
  </text>
</section>
```

5.55 Results Section 30954-2

Table 101: Results Section Contexts

Used by:	Contains entries:
Coded entries optional: History and Physical (required) Consultation Note (optional) Progress Note (optional)	Results Organizer
Coded entries required: CCD (required)	

Figure 144: Results section UML diagram



The Results section contains the results of observations generated by laboratories, imaging procedures, and other procedures. The scope includes observations such as hematology, chemistry, serology, virology, toxicology, microbiology, plain x-ray, ultrasound, CT, MRI, angiography, echocardiography, nuclear medicine, pathology, and procedure observations. The section often includes notable results such as abnormal values or relevant trends, and could contain all results for the period of time being documented.

Laboratory results are typically generated by laboratories providing analytic services in areas such as chemistry, hematology, serology, histology, cytology, anatomic pathology, microbiology, and/or virology. These observations are based on analysis of specimens obtained from the patient and submitted to the laboratory.

Imaging results are typically generated by a clinician reviewing the output of an imaging procedure, such as where a cardiologist reports the left ventricular ejection fraction based on the review of a cardiac echocardiogram.

Procedure results are typically generated by a clinician to provide more granular information about component observations made during a procedure, such as where a gastroenterologist reports the size of a polyp observed during a colonoscopy.

Results Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.3 (open)]

The following constraints apply to a Results section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7116) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.2.3" (CONF:9136).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15431).
 - a. This code **SHALL** contain exactly one [1..1] @code="30954-2" Relevant diagnostic tests and/or laboratory data (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15432).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8891).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7118).
5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7119) such that it
 - a. **SHALL** contain exactly one [1..1] Result Organizer (2.16.840.1.113883.10.20.22.4.1) (CONF:7120).

Results Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.3.1 (open)]

The following constraints apply to a Results section in which entries are required.

1. Conforms to Results Section (entries optional) template (2.16.840.1.113883.10.20.22.2.3)
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7108) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.2.3.1" (CONF:9137).
3. **SHALL** contain exactly one [1..1] **code** (CONF:15433).
 - a. This code **SHALL** contain exactly one [1..1] @code="30954-2" Relevant diagnostic tests and/or laboratory data (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15434).
4. **SHALL** contain exactly one [1..1] **title** (CONF:8892).
5. **SHALL** contain exactly one [1..1] **text** (CONF:7111).
6. **SHALL** contain at least one [1..*] **entry** (CONF:7112) such that it
 - a. **SHALL** contain exactly one [1..1] Result Organizer (2.16.840.1.113883.10.20.22.4.1) (CONF:7113).

Figure 145: Results section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.3.1"/>
  <code code="30954-2"
    codeSystem="2.16.840.1.113883.6.1"/>
    codeSystemName="LOINC"
    displayName="RESULTS" />
  <title>Results</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <organizer classCode="BATTERY" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.1"/>
      ...
    </organizer>
  </entry>
</section>
```

5.56 Review of Systems Section 10187-3

[section: templateId 1.3.6.1.4.1.19376.1.5.3.1.3.18 (open)]

Table 102: Review of Systems Section Contexts

Used By:	Contains Entries:
Progress Note (optional) Consultation Note (optional) Discharge Summary (optional) History and Physical (required) Procedure Note (optional)	

The Review of Systems section contains a relevant collection of symptoms and functions systematically gathered by a clinician. It includes symptoms the patient is currently experiencing, some of which were not elicited during the history of present illness, as well as a potentially large number of pertinent negatives, for example, symptoms that the patient denied experiencing.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7812) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="1.3.6.1.4.1.19376.1.5.3.1.3.18" (CONF:10469).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15435).
 - a. This code **SHALL** contain exactly one [1..1] @code="10187-3" Review of Systems (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15436).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7814).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7815).

Figure 146: Review of systems section example

```

<section>
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.3.18"/>
  <code code="10187-3" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="REVIEW OF SYSTEMS"/>
  <title>REVIEW OF SYSTEMS</title>
  <text>
    <paragraph>
      Patient denies recent history of fever or malaise. Positive
      For weakness and shortness of breath. One episode of melena. No
      recent
      headaches. Positive for osteoarthritis in hips, knees and hands.
    </paragraph>
  </text>
</section>

```

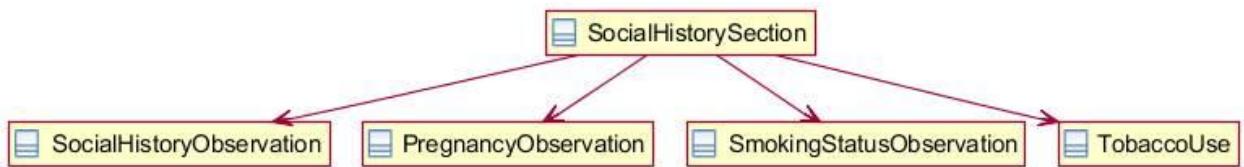
5.57 Social History Section 29762-2

[section: templateId 2.16.840.1.113883.10.20.22.2.17 (open)]

Table 103: Social History Section Contexts

Used By:	Contains Entries:
Consultation Note (optional) Discharge Summary (optional) History and Physical (required) Procedure Note (optional) Continuity of Care Document (CCD) (optional)	Pregnancy Observation Smoking Status Observation Social History Observation Tobacco Use

Figure 147: Social history section UML diagram



This section contains data defining the patient's occupational, personal (e.g. lifestyle), social, and environmental history and health risk factors, as well as administrative data such as marital status, race, ethnicity and religious affiliation. Social history can have significant influence on a patient's physical, psychological and emotional health and wellbeing so should be considered in the development of a complete record.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7936) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.2.17" (CONF:10449).

2. **SHALL** contain exactly one [1..1] **code** (CONF:14819).
 - a. This code **SHALL** contain exactly one [1..1] @code="29762-2" Social History (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:14820).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7938).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7939).
5. **MAY** contain zero or more [0..*] **entry** (CONF:7953) such that it
 - a. **SHALL** contain at least one [1..*] Social History Observation (2.16.840.1.113883.10.20.22.4.38) (CONF:7954).
6. **MAY** contain zero or more [0..*] **entry** (CONF:9132) such that it
 - a. **SHALL** contain exactly one [1..1] Pregnancy Observation (2.16.840.1.113883.10.20.15.3.8) (CONF:9133).
7. **SHOULD** contain zero or more [0..*] **entry** (CONF:14823) such that it
 - a. **SHALL** contain exactly one [1..1] Smoking Status Observation (templateId:2.16.840.1.113883.10.22.4.78) (CONF:14824).
8. **MAY** contain zero or more [0..*] **entry** (CONF:16816) such that it
 - a. **SHALL** contain exactly one [1..1] Tobacco Use (templateId:2.16.840.1.113883.10.20.22.4.85) (CONF:16817).

Figure 148: Social history section example

```

<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.17"/>
  <!-- ** Social history section template ** -->
  <code code="29762-2" codeSystem="2.16.840.1.113883.6.1">
    displayName="Social History"/>
  <title>Social History</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.38"/>
      <!-- ** Social history observation template ** -->
      ...
    </observation>
  </entry>
  <entry typeCode="DRIV">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.38"/>
      <!-- ** Social history observation template ** -->
      ...
    </observation>
  </entry>
</section>
```

5.58 Subjective Section 61150-9

[section: templateId 2.16.840.1.113883.10.20.21.2.2 (open)]

Table 104: Subjective Section Contexts

Used By:	Contains Entries:
Progress Note (optional)	

The Subjective section describes in a narrative format the patient's current condition and/or interval changes as reported by the patient or by the patient's guardian or another informant.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7873) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.21.2.2"` (CONF:10470).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15437).
 - a. This code **SHALL** contain exactly one [1..1] `@code="61150-9"`
Subjective (CodeSystem: LOINC 2.16.840.1.113883.6.1)
(CONF:15438).
3. **SHALL** contain exactly one [1..1] **title** (CONF:7875).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7876).

Figure 149: Subjective section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.21.2.2"/>
  <code code="61150-9" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="SUBJECTIVE"/>
  <title>SUBJECTIVE DATA</title>
  <text>
    <paragraph>
      I have used the peripheral nerve stimulator in my back for five
      days.
      While using it I found that I was able to do physical activity
      without pain. However, afterwards for one day, I would feel pain
      but
      then it would go away. I also noticed that I didn't have to take
      the
      Vicodin as much. I took 2 less Vicodin per day and 2 less
      tramadol
      everyday. I have not lain in my bed in a year and a half. I sleep
      in
      a recliner.
    </paragraph>
  </text>
</section>
```

5.59 Surgical Drains Section 11537-8

[section: templateId 2.16.840.1.113883.10.20.7.13 (open)]

Table 105: Surgical Drains Section Contexts

Used By:	Contains Entries:
Operative Note (optional)	

The Surgical Drains section may be used to record drains placed during the surgical procedure. Optionally, surgical drain placement may be represented with a text element in the Procedure Description Section.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:8038) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.7.13"` (CONF:10473).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15441).
 - a. This code **SHALL** contain exactly one [1..1] `@code="11537-8"` Surgical Drains (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15442).
3. **SHALL** contain exactly one [1..1] **title** (CONF:8040).
4. **SHALL** contain exactly one [1..1] **text** (CONF:8041).
5. If the Surgical Drains section is present, there **SHALL** be a statement providing details of the drains placed or **SHALL** explicitly state there were no drains placed (CONF:8056).

Figure 150: Surgical drains section example

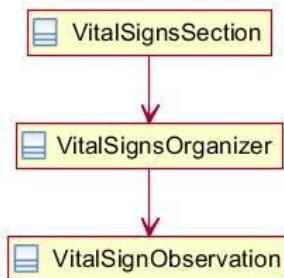
```
<section>
  <templateId root="2.16.840.1.113883.10.20.7.13"/>
  <code code="11537-8"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="SURGICAL DRAINS"/>
  <title>Surgical Drains</title>
  <text>Penrose drain placed</text>
</section>
```

5.60 Vital Signs Section 8716-3

Table 106: Vital Signs Section Contexts

Used By:	Contains Entries:
Entries optional: Progress Note (optional) Consultation Note (optional) Discharge Summary (optional) History and Physical (required) Continuity of Care Document (CCD) (optional)	Vital Signs Organizer

Figure 151: Vital signs section UML diagram



The Vital Signs section contains relevant vital signs for the context and use case of the document type, such as blood pressure, heart rate, respiratory rate, height, weight, body mass index, head circumference, and pulse oximetry. The section should include notable vital signs such as the most recent, maximum and/or minimum, baseline, or relevant trends.

Vital signs are represented in the same way as other results, but are aggregated into their own section to follow clinical conventions.

Vital Signs Section with Coded Entries Optional

[section: templateId 2.16.840.1.113883.10.20.22.2.4 (open)]

The following constraints apply to a Vital Signs section in which entries are not required.

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7268) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.2.4"** (CONF:10451).
2. **SHALL** contain exactly one [1..1] **code** (CONF:15242).
 - a. This code **SHALL** contain exactly one [1..1] **@code="8716-3"** Vital Signs (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15243).
3. **SHALL** contain exactly one [1..1] **title** (CONF:9966).
4. **SHALL** contain exactly one [1..1] **text** (CONF:7270).

5. **SHOULD** contain zero or more [0..*] **entry** (CONF:7271) such that it
 - a. **SHALL** contain exactly one [1..1] [Vital Signs Organizer](#) (2.16.840.1.113883.10.20.22.4.26) (CONF:7272).

Vital Signs Section with Coded Entries Required

[section: templateId 2.16.840.1.113883.10.20.22.2.4.1 (open)]

The following constraints apply to a Vital Signs section in which entries are required.

1. Conforms to [Vital Signs Section \(entries optional\)](#) template (2.16.840.1.113883.10.20.22.2.4)
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7273) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.2.4.1" (CONF:10452).
3. **SHALL** contain exactly one [1..1] **code** (CONF:15962).
 - a. This code **SHALL** contain exactly one [1..1] @code="8716-3" Vital Signs (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15963).
4. **SHALL** contain exactly one [1..1] **title** (CONF:9967).
5. **SHALL** contain exactly one [1..1] **text** (CONF:7275).
6. **SHALL** contain at least one [1..*] **entry** (CONF:7276) such that it
 - a. **SHALL** contain exactly one [1..1] [Vital Signs Organizer](#) (2.16.840.1.113883.10.20.22.4.26) (CONF:7277).

Figure 152: Vital signs section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.22.2.4.1"/>
  <code code="8716-3"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="VITAL SIGNS" />
  <title>Vital Signs</title>
  <text>
    ...
  </text>
  <entry typeCode="DRIV">
    <organizer classCode="CLUSTER" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.26"/>
      <!-- Vital Signs Organizer template -->
      ...
    </organizer>
  </entry>
</section>
```

6 ENTRY-LEVEL TEMPLATES

This part of the guide describes the clinical statement entry templates used within the sections of the consolidated documents. Entry templates contain constraints that are required for conformance. Note that the clinical statement templates are presented in alphabetical order; templates are not grouped by possible containing templates.

Entry-level templates are always allowed in sections.

Each entry-level template description contains the following information:

- Key template metadata (e.g., templateId, etc.)
- Description and explanatory narrative.
- Required CDA acts, participants and vocabularies.
- Optional CDA acts, participants and vocabularies.

Several entry-level templates require an effectiveTime:

The effectiveTime of an observation is the time interval over which the observation is known to be true. The low and high values should be as precise as possible, but no more precise than known. While CDA has multiple mechanisms to record this time interval (e.g., by low and high values, low and width, high and width, or center point and width), we constrain most to use only the low/high form. The low value is the earliest point for which the condition is known to have existed. The high value, when present, indicates the time at which the observation was no longer known to be true. The full description of effectiveTime and time intervals is contained in the CDA R2 normative edition³².

Entry-level templates may also describe an id element, which is an identifier for that entry. This id may be referenced within the document, or by the system receiving the document. The id assigned must be globally unique.

6.1 Admission Medication

[act: templateId 2.16.840.1.113883.10.20.22.4.36 (open)]

Table 107: Admission Medication Contexts

Used By:	Contains Entries:
Hospital Admission Medications Section (entries optional) (optional)	Medication Activity

The Admission Medications entry codes medications that the patient took prior to admission.

³² HL7 Clinical Document Architecture (CDA Release 2).
<http://www.hl7.org/implement/standards/cda.cfm>

Table 108: Admission Medication Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.36']					
	@classCode	1..1	SHALL		7698	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		7699	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16758	
	@root	1..1	SHALL		16759	2.16.840.1.113883.10.20.2 2.4.36
	code	1..1	SHALL		15518	
	@code	0..1	MAY		15519	2.16.840.1.113883.6.1 (LOINC) = 42346-7
	entryRelationship	1..*	SHALL		7701	
	@typeCode	1..1	SHALL		7702	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	substanceAdministration	1..1	SHALL		15520	

1. **SHALL** contain exactly one [1..1] **@classCode="ACT"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7698).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7699).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:16758) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.36"** (CONF:16759).
4. **SHALL** contain exactly one [1..1] **code** (CONF:15518).
 - a. This code **MAY** contain zero or one [0..1] **@code="42346-7"** Medications on Admission (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:15519).
5. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:7701) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7702).
 - b. **SHALL** contain exactly one [1..1] **Medication Activity** (templateId:2.16.840.1.113883.10.20.22.4.16) (CONF:15520).

Figure 153: Admission medication entry example

```
<entry>
  <act classCode="ACT" moodCode="EVN">
    <!-- Admission Medication Entry -->
    <templateId root="2.16.840.1.113883.10.20.22.4.36"/>
    <id root="5a784260-6856-4f38-9638-80c751aff2fb"/>
    <code code="42346-7"
      codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"
      displayName="Admission medication"/>
    <statusCode code="active"/>
    <effectiveTime>
      <low value="20903003"/>
    </effectiveTime>
    <entryRelationship typeCode="SUBJ">
      <substanceAdministration moodCode="" classCode="SBADM">
        <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
        <!-- Medication Activity -->
        ...
      </substanceAdministration>
    </entryRelationship>
  </act>
</entry>
```

6.2 Advance Directive Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.48 (open)]

Table 109: Advance Directive Observation Contexts

Used By:	Contains Entries:
Advance Directives Section (entries optional)	
Advance Directives Section (entries required)	

Advance Directives Observations assert findings (e.g., “resuscitation status is Full Code”) rather than orders, and should not be considered legal documents. A legal document can be referenced using the reference/externalReference construct.

Table 110: Advance Directive Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.48']					
	@classCode	1..1	SHALL		8648	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		8649	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	8655	
	@root	1..1	SHALL		10485	2.16.840.1.113883.10.20.2 2.4.48
	id	1..*	SHALL	II	8654	
Advance Directive Type	code	1..1	SHALL	CD	8651	2.16.840.1.113883.1.11.20. 2 (AdvanceDirectiveTypeCode)
	statusCode	1..1	SHALL	CS	8652	2.16.840.1.113883.5.14 (ActStatus) = completed
effective Date	effectiveTime	1..1	SHALL	TS or IVL<TS>	8656	
	low	1..1	SHALL	TS	8657	
	high	1..1	SHALL	TS	8659	
	participant	1..*	SHOULD		8662	
	@typeCode	1..1	SHALL		8663	2.16.840.1.113883.5.90 (HL7ParticipationType) = VRF
	templateId	1..1	SHALL	SET<II>	8664	
	@root	1..1	SHALL		10486	2.16.840.1.113883.10.20.1. 58
	time	0..1	SHOULD	IVL<TS>	8665	
	participant Role	1..1	SHALL		8825	
custodian of the Document	participant	1..1	SHOULD		8667	
	@typeCode	1..1	SHALL		8668	2.16.840.1.113883.5.90 (HL7ParticipationType) = CST
	participant Role	1..1	SHALL		8669	
	@classCode	1..1	SHALL		8670	2.16.840.1.113883.5.110 (RoleClass) = AGNT
	addr	0..1	SHOULD	SET<AD>	8671	
	telecom	0..1	SHOULD	SET<TEL>	8672	
	playingEntity	1..1	SHALL		8824	
	name	1..1	SHALL	PN	8673	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	reference	1..*	SHOULD		8692	
	@typeCode	1..1	SHALL		8694	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	external Document	1..1	SHALL		8693	
	id	1..*	SHALL	II	8695	
	text	0..1	MAY	ED	8696	
	@mediaType	0..1	MAY		8703	
	reference	0..1	MAY		8697	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8648).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8649).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8655) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.48" (CONF:10485).
4. **SHALL** contain at least one [1..*] **id** (CONF:8654).
5. **SHALL** contain exactly one [1..1] **code**, where the **@code** **SHOULD** be selected from ValueSet AdvanceDirectiveTypeCode 2.16.840.1.113883.1.11.20.2 **STATIC** 2006-10-17 (CONF:8651).
6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8652).
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:8656).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:8657).
 - i. If the starting time is unknown, the <low> element **SHALL** have the nullFlavor attribute set to UNK (CONF:8658).
 - b. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:8659).
 - i. If the ending time is unknown, the <high> element **SHALL** have the nullFlavor attribute set to UNK (CONF:8660).
 - ii. If the Advance Directive does not have a specified ending time, the <high> element **SHALL** have the nullFlavor attribute set to NA (CONF:8661).
8. **SHOULD** contain at least one [1..*] **participant** (CONF:8662) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="VRF"** Verifier (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8663).
 - b. **SHALL** contain exactly one [1..1] **templateId** (CONF:8664) such that it
 - i. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.1.58" (CONF:10486).

- c. **SHOULD** contain zero or one [0..1] **time** (CONF:8665).
 - i. The data type of Observation/participant/time in a verification **SHALL** be TS (time stamp) (CONF:8666).
 - d. **SHALL** contain exactly one [1..1] **participantRole** (CONF:8825).
9. **SHOULD** contain exactly one [1..1] **participant** (CONF:8667) such that it
- a. **SHALL** contain exactly one [1..1] @**typeCode**="CST" Custodian (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8668).
 - b. **SHALL** contain exactly one [1..1] **participantRole** (CONF:8669).
 - i. This participantRole **SHALL** contain exactly one [1..1] @**classCode**="AGNT" Agent (CodeSystem: RoleClass 2.16.840.1.113883.5.110) (CONF:8670).
 - ii. This participantRole **SHOULD** contain zero or one [0..1] **addr** (CONF:8671).
 - iii. This participantRole **SHOULD** contain zero or one [0..1] **telecom** (CONF:8672).
 - iv. This participantRole **SHALL** contain exactly one [1..1] **playingEntity** (CONF:8824).
 - 1. This playingEntity **SHALL** contain exactly one [1..1] **name** (CONF:8673).
 - a. The name of the agent who can provide a copy of the Advance Directive **SHALL** be recorded in the <name> element inside the <playingEntity> element (CONF:8674).
10. **SHOULD** contain at least one [1..*] **reference** (CONF:8692) such that it
- a. **SHALL** contain exactly one [1..1] @**typeCode**="REFR" Refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:8694).
 - b. **SHALL** contain exactly one [1..1] **externalDocument** (CONF:8693).
 - i. This externalDocument **SHALL** contain at least one [1..*] **id** (CONF:8695).
 - ii. This externalDocument **MAY** contain zero or one [0..1] **text** (CONF:8696).
 - 1. The text, if present, **MAY** contain zero or one [0..1] @**mediaType** (CONF:8703).
 - 2. The text, if present, **MAY** contain zero or one [0..1] **reference** (CONF:8697).
 - a. The URL of a referenced advance directive document **MAY** be present, and **SHALL** be represented in Observation/reference/ExternalDocument/text /reference (CONF:8698).
 - b. If a URL is referenced, then it **SHOULD** have a corresponding linkHTML element in narrative block (CONF:8699).

Table 111: Advance Directive Type Code Value Set

Value Set: AdvanceDirectiveTypeCode 2.16.840.1.113883.1.11.20.2 STATIC 2006-10-17		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Print Name
52765003	SNOMED CT	Intubation
61420007	SNOMED CT	Tube Feedings
71388002	SNOMED CT	Other Directive
78823007	SNOMED CT	Life Support
89666000	SNOMED CT	CPR
225204009	SNOMED CT	IV Fluid and Support
281789004	SNOMED CT	Antibiotics
304251008	SNOMED CT	Resuscitation

Figure 154: Advance directive observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.48"/>
  <id root="9b54c3c9-1673-49c7-aef9-b037ed72ed27"/>
  <code code="304251008"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Resuscitation"/>
  <statusCode code="completed"/>
  <effectiveTime>
    <low value="20110213"/>
    <high nullFlavor="NA"/>
  </effectiveTime>
  <value xsi:type="CD" code="304253006"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Do not resuscitate">
    <originalText>
      <reference value="#AD1"/>
    </originalText>
  </value>
  <participant typeCode="VRF">
    <templateId root="2.16.840.1.113883.10.20.1.58"/>
    <time value="201102013"/>
    <participantRole>
      <id root="20cf14fb-b65c-4c8c-a54d-b0cca834c18c"/>
      <playingEntity>
        <name>
          <prefix>Dr.</prefix>
          <family>Dolin</family>
          <given>Robert</given>
        </name>
      </playingEntity>
    </participantRole>
  </participant>
```

```

<participant typeCode="CST">
  <participantRole classCode="AGNT">
    <addr>
      <streetAddressLine>21 North Ave.</streetAddressLine>
      <city>Burlington</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom value="tel: (555) 555-1003"/>
    <playingEntity>
      <name>
        <prefix>Dr.</prefix>
        <family>Dolin</family>
        <given>Robert</given>
      </name>
    </playingEntity>
  </participantRole>
</participant>
<reference typeCode="REFR">
  <seperatableInd value="false"/>
  <externalDocument>
    <id root="b50b7910-7ffb-4f4c-bbe4-177ed68cbbf3"/>
    <text mediaType="application/pdf">
      <reference
        value="AdvanceDirective.b50b7910-7ffb-4f4c-bbe4-
177ed68cbbf3.pdf"/>
    </text>
  </externalDocument>
</reference>
</observation>

```

6.3 Age Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.31 (open)]

Table 112: Age Observation Contexts

Used By:	Contains Entries:
Family History Observation Problem Observation	

This Age Observation represents the subject's age at onset of an event or observation. The age of a relative in a Family History Observation at the time of that observation could also be inferred by comparing RelatedSubject/subject/birthTime with Observation/effectiveTime. However, a common scenario is that a patient will know the age of a relative when the relative had a certain condition or when the relative died, but will not know the actual year (e.g., "grandpa died of a heart attack at the age of 50"). Often times, neither precise dates nor ages are known (e.g. "cousin died of congenital heart disease as an infant").

Table 113: Age Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.31']					
	@classCode	1..1	SHALL		7613	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7614	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7899	
	@root	1..1	SHALL		10487	2.16.840.1.113883.10.20.22.4.31
	code	1..1	SHALL		7615	
	@code	1..1	SHALL		16776	2.16.840.1.113883.6.96 (SNOMED-CT) = 445518008
	statusCode	1..1	SHALL		15965	
	@code	1..1	SHALL		15966	2.16.840.1.113883.5.14 (ActStatus) = completed
	value	1..1	SHALL	PQ	7617	
	@unit	1..1	SHALL		7618	2.16.840.1.113883.11.20.9.21 (AgePQ_UCUM) = 1

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7613).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7614).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7899) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.31"** (CONF:10487).
4. **SHALL** contain exactly one [1..1] **code** (CONF:7615).
 - a. This code **SHALL** contain exactly one [1..1] **@code="445518008"** Age At Onset (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:16776).
5. **SHALL** contain exactly one [1..1] **statusCode** (CONF:15965).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:15966).
6. **SHALL** contain exactly one [1..1] **value** with @xsi:type="PQ" (CONF:7617).
 - a. This value **SHALL** contain exactly one [1..1] **@unit="1"**, which **SHALL** be selected from ValueSet AgePQ_UCUM 2.16.840.1.113883.11.20.9.21 **DYNAMIC** (CONF:7618).

Table 114: AgePQ_UCUM Value Set

Value Set: AgePQ_UCUM 2.16.840.1.113883.11.20.9.21 DYNAMIC		
Code System(s): Unified Code for Units of Measure (UCUM) 2.16.840.1.113883.6.8		
Description: A valueSet of UCUM codes for representing age value units		
Code	Code System	Print Name
min	UCUM	Minute
h	UCUM	Hour
d	UCUM	Day
wk	UCUM	Week
mo	UCUM	Month
a	UCUM	Year

Figure 155: Age observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.31"/>
  <!-- Age observation template -->
  <code code="397659008"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Age"
    codeSystemName="SNOMED CT"/>
  <statusCode code="completed"/>
  <value xsi:type="PQ" value="57" unit="a"/>
</observation>
```

6.4 Allergy - Intolerance Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.7 (open)]

Table 115: Allergy - Intolerance Observation Contexts

Used By:	Contains Entries:
Allergy Problem Act (required)	Allergy Status Observation Reaction Observation Severity Observation

This clinical statement represents that an allergy or adverse reaction exists or does not exist. The agent that is the cause of the allergy or adverse reaction is represented as a manufactured material participant playing entity in the allergy - intolerance observation. While the agent is often implicit in the alert observation (e.g. "allergy to penicillin"), it should also be asserted explicitly as an entity. The manufactured material participant is used to represent natural and non-natural occurring substances.

NOTE: The agent responsible for an allergy or adverse reaction is not always a manufactured material (for example, food allergies), nor is it necessarily

consumed. The following constraints reflect limitations in the base CDA R2 specification, and should be used to represent any type of responsible agent.

Table 116: Allergy - Intolerance Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Allergy – Intolerance Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.7']					
	@classCode	1..1	SHALL		7379	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7380	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<I I>	7381	
	@root	1..1	SHALL		10488	2.16.840.1.113883.10.20.22.4. 7
	id	1..*	SHALL		7382	
	code	1..1	SHALL		15947	
	@code	1..1	SHALL		15948	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	statusCode	1..1	SHALL		7386	2.16.840.1.113883.5.14 (ActStatus) = completed
adverseEvent Date	effectiveTime	1..1	SHALL	TS or IVL<TS>	7387	
	value	1..1	SHALL	CD	7390	
adverseEvent Type	@code	1..1	SHALL		9139	2.16.840.1.113883.3.88.12.32 21.6.2 (Allergy/Adverse Event Type)
	originalText	0..1	SHOULD		7422	
	reference	0..1	MAY		15949	
	@value	0..1	SHOULD		15950	
product	participant	0..1	SHOULD		7402	
	@typeCode	1..1	SHALL		7403	2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
productDetail	participantRole	1..1	SHALL		7404	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	@classCode	1..1	SHALL		7405	2.16.840.1.113883.5.110 (RoleClass) = MANU
	playingEntity	1..1	SHALL		7406	
	@classCode	1..1	SHALL		7407	2.16.840.1.113883.5.41 (EntityClass) = MMAT
product Coded	code	1..1	SHALL		7419	
productFree Text	originalText	0..1	SHOULD		7424	
	reference	0..1	SHOULD		7425	
	@value	0..1	SHOULD		15952	
	translation	0..*	MAY	SET<P QR>	7431	
	entryRelations hip	0..1	MAY		7440	
	@typeCode	1..1	SHALL		7906	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		7446	true
	observation	1..1	SHALL		15954	
reaction	entryRelations hip	0..*	SHOULD		7447	
	@typeCode	1..1	SHALL		7907	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = MFST
	@inversionInd	1..1	SHALL		7449	true
	observation	1..1	SHALL		15955	
severity	entryRelations hip	0..1	SHOULD		9961	
	@typeCode	1..1	SHALL		9962	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		9964	true
	observation	1..1	SHALL		15956	

1. Conforms to [Substance or Device Allergy - Intolerance Observation](#) template (2.16.840.1.113883.10.20.24.3.90).
2. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7379).

3. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7380).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:7381) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.7" (CONF:10488).
5. **SHALL** contain at least one [1..*] **id** (CONF:7382).
6. **SHALL** contain exactly one [1..1] **code** (CONF:15947).
 - a. This code **SHALL** contain exactly one [1..1] @code="ASSERTION" Assertion (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:15948).
7. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:7386).
8. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:7387).
 - a. If it is unknown when the allergy began, this effectiveTime **SHALL** contain low/@nullFlavor="UNK" (CONF:9103).
 - b. If the allergy is no longer a concern, this effectiveTime **MAY** contain zero or one [0..1] high (CONF:10082).
9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:7390).
 - a. This value **SHALL** contain exactly one [1..1] @code, which **SHALL** be selected from ValueSet Allergy/Adverse Event Type 2.16.840.1.113883.3.88.12.3221.6.2 **DYNAMIC** (CONF:9139).
 - b. This value **SHOULD** contain zero or one [0..1] **originalText** (CONF:7422).
 - i. The originalText, if present, **MAY** contain zero or one [0..1] **reference** (CONF:15949).
 1. The reference, if present, **SHOULD** contain zero or one [0..1] @value (CONF:15950).
 - a. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15951).
 10. **SHOULD** contain zero or one [0..1] **participant** (CONF:7402) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="CSM" Consumable (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90 **STATIC**) (CONF:7403).
 - b. **SHALL** contain exactly one [1..1] **participantRole** (CONF:7404).
 - i. This participantRole **SHALL** contain exactly one [1..1] @classCode="MANU" Manufactured Product (CodeSystem: RoleClass 2.16.840.1.113883.5.110 **STATIC**) (CONF:7405).
 - ii. This participantRole **SHALL** contain exactly one [1..1] **playingEntity** (CONF:7406).
 1. This playingEntity **SHALL** contain exactly one [1..1] @classCode="MMAT" Manufactured Material (CodeSystem: EntityClass 2.16.840.1.113883.5.41 **STATIC**) (CONF:7407).

2. This playingEntity **SHALL** contain exactly one [1..1] **code** (CONF:7419).
 - a. This code **SHOULD** contain zero or one [0..1] **originalText** (CONF:7424).
 - i. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:7425).
 1. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15952).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15953).
 - b. This code **MAY** contain zero or more [0..*] **translation** (CONF:7431).
 - c. In an allergy to a specific medication the code **SHALL** be selected from the ValueSet 2.16.840.1.113883.3.88.12.80.16 Medication Brand Name **DYNAMIC** or the ValueSet 2.16.840.1.113883.3.88.12.80.17 Medication Clinical Drug **DYNAMIC** (CONF:7421).
 - d. In an allergy to a class of medications the code **SHALL** be selected from the ValueSet 2.16.840.1.113883.3.88.12.80.18 Medication Drug Class **DYNAMIC** (CONF:10083).
 - e. In an allergy to a food or other substance the code **SHALL** be selected from the ValueSet 2.16.840.1.113883.3.88.12.80.20 Ingredient Name **DYNAMIC** (CONF:10084).
 11. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7440) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7906).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** True (CONF:7446).
 - c. **SHALL** contain exactly one [1..1] **Allergy Status Observation** (templateId:2.16.840.1.113883.10.20.22.4.28) (CONF:15954).
 12. **SHOULD** contain zero or more [0..*] **entryRelationship** (CONF:7447) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="MFST"** Is Manifestation of (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7907).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** True (CONF:7449).

- c. **SHALL** contain exactly one [1..1] [Reaction Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.9) (CONF:15955).

13. **SHOULD** contain zero or one [0..1] **entryRelationship** (CONF:9961) such that it

 - a. **SHALL** contain exactly one [1..1] @**typeCode**="SUBJ" Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:9962).
 - b. **SHALL** contain exactly one [1..1] @**inversionInd**="true" True (CONF:9964).
 - c. **SHALL** contain exactly one [1..1] [Severity Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.8) (CONF:15956).

Table 117: Allergy/Adverse Event Type Value Set

Value Set: Allergy/Adverse Event Type 2.16.840.1.113883.3.88.12.3221.6.2 DYNAMIC		
Code System(s):	SNOMED CT 2.16.840.1.113883.6.96	
Description:	This describes the type of product and intolerance suffered by the patient http://phinvads.cdc.gov/vads/ViewValueSet.action?id=7AFDBFB5-A277-DE11-9B52-0015173D1785	
Code	Code System	Print Name
420134006	SNOMED CT	Propensity to adverse reactions (disorder)
418038007	SNOMED CT	Propensity to adverse reactions to substance (disorder)
419511003	SNOMED CT	Propensity to adverse reactions to drug (disorder)
418471000	SNOMED CT	Propensity to adverse reactions to food (disorder)
419199007	SNOMED CT	Allergy to substance (disorder)
416098002	SNOMED CT	Drug allergy (disorder)
414285001	SNOMED CT	Food allergy (disorder)
59037007	SNOMED CT	Drug intolerance (disorder)
235719002	SNOMED CT	Food intolerance (disorder)

Table 118: Medication Brand Name Value Set (excerpt)

Value Set: Medication Brand Name 2.16.840.1.113883.3.88.12.80.16 DYNAMIC		
Code System(s):	RxNorm 2.16.840.1.113883.6.88	
Description:	Brand names http://phinvads.cdc.gov/vads/ViewValueSet.action?id=229BEF3E-971C-DF11-B334-0015173D1785	
Code	Code System	Print Name
205734	RxNorm	Amoxicillin 25 MG/ML Oral Suspension [Amoxil]
856537	RxNorm	24 HR Propranolol Hydrochloride 60 MG Extended Release Capsule [Inderal]
104700	RxNorm	Diazepam 5 MG Oral Tablet [Valium]
...		

Table 119: Medication Clinical Drug Value Set (excerpt)

Value Set: Medication Clinical Drug 2.16.840.1.113883.3.88.12.80.17 DYNAMIC		
Code System(s):	RxNorm 2.16.840.1.113883.6.88	
Description:	Clinical drug names http://phinvads.cdc.gov/vads/ViewValueSet.action?id=239BEF3E-971C-DF11-B334-0015173D1785	
Code	Code System	Print Name
313850	RxNorm	Amoxicillin 40 MG/ML Oral Suspension
856448	RxNorm	Propranolol Hydrochloride 10 MG Oral Tablet
197589	RxNorm	Diazepam 10 MG Oral Tablet
...		

Table 120: Medication Drug Class Value Set (excerpt)

Value Set: Medication Drug Class 2.16.840.1.113883.3.88.12.80.18 DYNAMIC		
Code System(s):	NDF-RT 2.16.840.1.113883.3.26.1.5	
Description:	This identifies the pharmacological drug class, such as Cephalosporins. Shall contain a value descending from the NDF-RT concept types of "Mechanism of Action - N0000000223", "Physiologic Effect - N0000009802" or "Chemical Structure - N0000000002". NUI will be used as the concept code. http://phinvads.cdc.gov/vads/ViewValueSet.action?id=77FDBFB5-A277-DE11-9B52-0015173D1785	
Code	Code System	Print Name
N0000011161	NDF-RT	Cephalosporins
N0000005909	NDF-RT	2-Propanol
N0000006629	NDF-RT	Filgrastim
...		

Table 121: Ingredient Name Value Set (excerpt)

Value Set: Ingredient Name 2.16.840.1.113883.3.88.12.80.20 DYNAMIC		
Code System(s):	Unique Ingredient Identifier (UNII) 2.16.840.1.113883.4.9	
Description:	Unique ingredient identifiers (UNIIs) for substances in drugs, biologics, foods, and devices. http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/ucm162523.htm	
Code	Code System	Print Name
OLT4M28U3Z	UNII	((3-TRIFLUOROMETHYL)PHENYL)METHYL-PHOSPHONIC ACID
L0VRY82PKO	UNII	CYCLOHEXENE, 4-[(1Z)-1,5-DIMETHYL-1,4-HEXADIEN-1-YL]-1-METHYL-
62H4W26906	UNII	BISNAFIDE
QE1QX6B99R	UNII	PEANUT
...		

Figure 156: Allergy - intolerance observation example

```
<observation classCode="OBS" moodCode="EVN">
    <!-- allergy - intolerance observation template -->
    <templateId root="2.16.840.1.113883.10.20.22.4.7"/>
    <id root="4adc1020-7b14-11db-9fe1-0800200c9a66"/>
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
    <statusCode code="completed"/>

    <effectiveTime>
        <low value="20110215"/>
    </effectiveTime>

    <value xsi:type="CD" code="282100009"
        displayName="Adverse reaction to substance"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT">
        <originalText>
            <reference value=""/>
        </originalText>
    </value>
```

```

<participant typeCode="CSM">
  <participantRole classCode="MANU">
    <playingEntity classCode="MMAT">
      <code code="QE1QX6B99R" displayName="PEANUT"
            codeSystem="2.16.840.1.113883.4.9" codeSystemName=" UNII">
        <originalText>
          <reference value="" />
        </originalText>
      </code>
      <name>Penicillin</name>
    </playingEntity>
  </participantRole>
</participant>

</observation>

```

6.5 Allergy Problem Act

[act: templateId 2.16.840.1.113883.10.20.22.4.30(open)]

Table 122: Allergy Problem Act Contexts

Used By:	Contains Entries:
Allergies Section (entries required)	Allergy - Intolerance Observation
Allergies Section (entries optional)	

This clinical statement act represents a concern relating to a patient's allergies or adverse events. A concern is a term used when referring to patient's problems that are related to one another. Observations of problems or other clinical statements captured at a point in time are wrapped in a Allergy Problem Act, or "Concern" act, which represents the ongoing process tracked over time. This outer Allergy Problem Act (representing the "Concern") can contain nested problem observations or other nested clinical statements relevant to the allergy concern.

Table 123: Allergy Problem Act Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.30']					
	@classCode	1..1	SHALL		7469	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		7470	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7471	
	@root	1..1	SHALL		10489	2.16.840.1.113883.10.20.22.4.30
	id	1..*	SHALL	II	7472	
	code	1..1	SHALL	CD	7477	2.16.840.1.113883.6.1 (LOINC) = 48765-2
	statusCode	1..1	SHALL	CS	7485	2.16.840.1.113883.11.20.9.19 (ProblemAct statusCode)
	effectiveTime	1..1	SHALL	TS or IVL<TS>	7498	
	Entry Relationship	1..*	SHALL		7509	
	@typeCode	1..1	SHALL		7915	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ

1. **SHALL** contain exactly one [1..1] **@classCode="ACT"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7469).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7470).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7471) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.30"** (CONF:10489).
4. **SHALL** contain at least one [1..*] **id** (CONF:7472).
5. **SHALL** contain exactly one [1..1] **code="48765-2"** Allergies, adverse reactions, alerts (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:7477).
6. **SHALL** contain exactly one [1..1] **statusCode**, which **SHALL** be selected from ValueSet ProblemAct statusCode 2.16.840.1.113883.11.20.9.19 **STATIC** 2011-09-09 (CONF:7485).
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:7498).
 - a. If statusCode="active" Active, then effectiveTime **SHALL** contain [1..1] low (CONF:7504).
 - b. If statusCode="completed" Completed, then effectiveTime **SHALL** contain [1..1] high (CONF:10085).
8. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:7509) such that it

- a. **SHALL** contain exactly one [1..1] @**typeCode**="SUBJ" Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7915).
- b. **SHALL** contain exactly one [1..1] **Allergy - Intolerance Observation** (templateId:2.16.840.1.113883.10.20.22.4.7) (CONF:14925).

Table 124: ProblemAct statusCode Value Set

Value Set: ProblemAct statusCode 2.16.840.1.113883.11.20.9.19 STATIC 2011-09-09		
Code System(s):	ActStatus 2.16.840.1.113883.5.14	
Description:	This value set indicates the status of the problem concern act	
Code	Code System	Print Name
active	ActStatus	active
suspended	ActStatus	suspended
aborted	ActStatus	aborted
completed	ActStatus	completed

Figure 157: Allergy problem act example

```

<entry typeCode="DRIV">
  <act classCode="ACT" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.30"/>
    <id root="36e3e930-7b14-11db-9fe1-0800200c9a66"/>
    <code code="48765-2"
          codeSystem="2.16.840.1.113883.6.1"
          codeSystemName="LOINC"
          displayName="Allergies, adverse reactions, alerts"/>
    <statusCode code="active"/>
    <effectiveTime>
      <low value="20090902"/>
      <high value="20100103"/>
    </effectiveTime>
    <entryRelationship typeCode="SUBJ">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.7"/>
        <!-- Allergy - intolerance observation template -->
        ...
      </observation>
    </entryRelationship>
  </act>
</entry>
```

6.6 Allergy Status Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.28 (open)]

Table 125: Allergy Status Observation Contexts

Used By:	Contains Entries:
Allergy - Intolerance Observation	

This template represents the status of the allergy indicating whether it is active, no longer active, or is an historic allergy. There can be only one allergy status observation per alert observation.

Table 126: Allergy Status Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.28']					
	@classCode	1..1	SHALL		7318	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7319	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7317	
	@root	1..1	SHALL		10490	2.16.840.1.113883.10.20.22.4.28
	code	1..1	SHALL		7320	2.16.840.1.113883.6.1 (LOINC) = 33999-4
	statusCode	1..1	SHALL		7321	2.16.840.1.113883.5.14 (ActStatus) = completed
	value	1..1	SHALL	CE	7322	2.16.840.1.113883.3.88.12.80.68 (HITSPProblemStatus)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:7318).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:7319).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7317) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.28"** (CONF:10490).
4. **SHALL** contain exactly one [1..1] **code="33999-4"** Status (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**) (CONF:7320).
5. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:7321).
6. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CE", where the **@code** **SHALL** be selected from ValueSet [HITSPProblemStatus 2.16.840.1.113883.3.88.12.80.68 DYNAMIC](#) (CONF:7322).

Table 127: HITSP Problem Status Value Set

Value Set: HITSPProblemStatus 2.16.840.1.113883.3.88.12.80.68 DYNAMIC Code System: SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Display Name
55561003	SNOMED CT	Active
73425007	SNOMED CT	Inactive*
413322009	SNOMED CT	Resolved**

* An inactive problem refers to one that is quiescent, and may appear again in future.

** A resolved problem refers to one that used to affect a patient, but does not any more.

Figure 158: Allergy status observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.28"/>
  <!-- Allergy status observation template -->
  <code code="33999-4"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="Status"/>
  <statusCode code="completed"/>
  <value xsi:type="CE" code="55561003"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Active"/>
</observation>
```

6.7 Assessment Scale Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.69 (open)]

Table 128: Assessment Scale Observation Contexts

Used By:	Contains Entries:
Functional Status Problem Observation (optional) Functional Status Result Observation (optional) Cognitive Status Problem Observation (optional) Cognitive Status Result Observation (optional) Functional Status Section (optional)	Assessment Scale Supporting Observation

An assessment scale is a collection of observations that together yield a summary evaluation of a particular condition. Examples include the Braden Scale (assesses pressure ulcer risk), APACHE Score (estimates mortality in critically ill patients), Mini-Mental Status Exam (assesses cognitive function), APGAR Score (assesses the health of a newborn), and Glasgow Coma Scale (assesses coma and impaired consciousness.)

Table 129: Assessment Scale Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.69']					
	@classCode	1..1	SHALL		14434	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14435	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		14436	
	@root	1..1	SHALL		14437	2.16.840.1.113883.10.20.22.4.69
	id	1..*	SHALL		14438	
	code	1..1	SHALL		14439	
	derivationExpr	0..1	MAY		14637	
	statusCode	1..1	SHALL		14444	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL		14445	
	value	1..1	SHALL		14450	
	interpretationCode	0..*	MAY		14459	
	translation	0..*	MAY		14888	
	author	0..*	MAY		14460	
	entryRelationship	0..*	SHOULD		14451	
	@typeCode	1..1	SHALL		16741	COMP
	observation	1..1	SHALL		16742	
	referenceRange	0..*	MAY		16799	
	observationRange	1..1	SHALL		16800	
	text	0..1	SHOULD		16801	
	reference	0..1	SHOULD		16802	
	@value	0..1	MAY		16803	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14434).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14435).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:14436) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.69"** (CONF:14437).
4. **SHALL** contain at least one [1..*] **id** (CONF:14438).
5. **SHALL** contain exactly one [1..1] **code** (CONF:14439).
 - a. **SHOULD** be from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96) identifying the assessment scale (CONF:14440).

Such derivation expression can contain a text calculation of how the components total up to the summed score

6. **MAY** contain zero or one [0..1] **derivationExpr** (CONF:14637).
7. **SHALL** contain exactly one [1..1] **statusCode**=`"completed"` (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14444).

Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards)

8. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:14445).
9. **SHALL** contain exactly one [1..1] **value** (CONF:14450).
10. **MAY** contain zero or more [0..*] **interpretationCode** (CONF:14459).
 - a. The interpretationCode, if present, **MAY** contain zero or more [0..*] **translation** (CONF:14888).
11. **MAY** contain zero or more [0..*] **author** (CONF:14460).
12. **SHOULD** contain zero or more [0..*] **entryRelationship** (CONF:14451) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**=`"COMP"` has component (CONF:16741).
 - b. **SHALL** contain exactly one [1..1] **Assessment Scale Supporting Observation** (templateId:2.16.840.1.113883.10.20.22.4.86) (CONF:16742).

The referenceRange/observationRange/text, if present, MAY contain a description of the scale (e.g. for a Pain Scale 1 to 10: 1 to 3 = little pain, 4 to 7= moderate pain, 8 to 10 = severe pain)

13. **MAY** contain zero or more [0..*] **referenceRange** (CONF:16799).
 - a. The referenceRange, if present, **SHALL** contain exactly one [1..1] **observationRange** (CONF:16800).
 - i. This observationRange **SHOULD** contain zero or one [0..1] **text** (CONF:16801).
 1. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:16802).
 - a. The reference, if present, **MAY** contain zero or one [0..1] **@value** (CONF:16803).
 - i. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:16804).

Figure 159: Assessment scale observation example

```
<section>
  ...
<entry typeCode="DRIV">
  <observation classCode="OBS" moodCode="EVN">
    <!--Assessment Scale Observation -->
    <templateId root="2.16.840.1.113883.10.20.22.4.69"/>
    <code code="248241002" displayName="Brief Interview for Mental
      Status"
      codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"/>
    <derivationExpr>Text description of the
      calculation</derivationExpr>
    <statusCode code="completed"/>
    <effectiveTime value="20120214"/>
    <!-- Summed score of the component values -->
    <value xsi:type="INT" value="7"/>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.86"/>
        <id root="f4dce790-8328-11db-9fe1-0800200c9a33"/>
        <code code="52731-7" displayName="Repetition of Three Words"
          codeSystem="2.16.840.1.113883.6.1"
          codeSystemName="LOINC"/>
        <statusCode code="completed"/>
        <value xsi:type="CD" code="LA6395-3" displayName="Three"
          codeSystem="2.16.840.1.113883.6.1"/>
      </observation>
    </entryRelationship>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.86"/>
        <id root="f4dce790-8328-11db-9fe1-0800200c9a22"/>
        <code code="52732-5"
          displayName="Temporal orientation - current year"
          codeSystem="2.16.840.1.113883.6.1"
          codeSystemName="LOINC"/>
        <statusCode code="completed"/>
        <value xsi:type="CD" code="LA10966-2"
          displayName="Missed by 2-5 years"
          codeSystem="2.16.840.1.113883.6.1"/>
      </observation>
    </entryRelationship>
```

```

<entryRelationship typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.86"/>
    <id root="f4dce790-8328-11db-9fe1-0800200c9a44"/>
    <code code="248240001" displayName="motor response"
          codeSystem="2.16.840.1.113883.6.96"
          codeSystemName="SNOMED"/>
    <statusCode code="completed"/>
    <value xsi:type="INT" value="3"/>
  </observation>
</entryRelationship>
</observation>
</entry>
...

```

6.8 Assessment Scale Supporting Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.86 (open)]

Table 130: Assessment Scale Supporting Observation Contexts

Used By:	Contains Entries:
Assessment Scale Observation (required)	

An Assessment Scale Supporting observation represents the components of a scale used in an Assessment Scale Observation. The individual parts that make up the component may be a group of cognitive or functional status observations.

Table 131: Assessment Scale Supporting Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.86']						
	@classCode	1..1	SHALL		16715	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		16716	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	16722	
	@root	1..1	SHALL		16723	2.16.840.1.113883.10.20.22.4.86
	id	1..*	SHALL		16724	
	code	1..1	SHALL	CE	16717	
	@code	1..1	SHALL		16738	
	statusCode	1..1	SHALL		16720	2.16.840.1.113883.5.14 (ActStatus) = completed
	value	1..*	SHALL		16754	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:16715).

2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:16716).
3. **SHALL** contain exactly one [1..1] templateId (CONF:16722) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.86" (CONF:16723).
4. **SHALL** contain at least one [1..*] id (CONF:16724).
5. **SHALL** contain exactly one [1..1] code with @xsi:type="CE" (CONF:16717).
 - a. This code **SHALL** contain exactly one [1..1] @code (CONF:16738).
 - i. Such that observation/code **SHALL** be from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96) and represents components of the scale (CONF:14458) (CONF:16739).
6. **SHALL** contain exactly one [1..1] statusCode="completed" (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:16720).
7. **SHALL** contain at least one [1..*] value (CONF:16754).
 - a. If xsi:type="CD" , **MAY** have a translation code to further specify the source if the instrument has an applicable code system and valueSet for the integer (CONF:14639) (CONF:16755).

Figure 160: Assessment scale supporting observation example

```
<entryRelationship typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.86"/>
    <id root="f4dce790-8328-11db-9fe1-0800200c9a44"/>
    <code code="248240001" displayName="motor response"
          codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED"/>
    <statusCode code="completed"/>
    <value xsi:type="INT" value="3"/>
  </observation>
</entryRelationship>
```

6.9 Authorization Activity

[act: templateId 2.16.840.1.113883.10.20.1.19 (open)]

Table 132: Authorization Activity Contexts

Used By:	Contains Entries:
Policy Activity (optional)	

An Authorization Activity represents authorizations or pre-authorizations currently active for the patient for the particular payer.

Authorizations are represented using an act subordinate to the policy or program that provided it. The authorization refers to the policy or program. Authorized treatments can be grouped into an organizer class, where common properties, such as the reason for the authorization, can be expressed. Subordinate acts represent what was authorized.

Table 133: Authorization Activity Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.1.19']					
	@classCode	1..1	SHALL		8944	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		8945	2.16.840.1.113883.5.6 (HL7ActClass) = EVN
	templateId	1..1	SHALL	SET<II>	8946	
	@root	1..1	SHALL		10529	2.16.840.1.113883.10.20.1.19
	id	1..1	SHALL	II	8947	
	entry Relationship	1..*	SHALL		8948	
	@typeCode	1..1	SHALL		8949	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ

1. **SHALL** contain exactly one [1..1] @classCode="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8944).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8945).
3. **SHALL** contain exactly one [1..1] templateId (CONF:8946) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.1.19" (CONF:10529).
4. **SHALL** contain exactly one [1..1] id (CONF:8947).
5. **SHALL** contain at least one [1..*] entryRelationship (CONF:8948) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="SUBJ" Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:8949).
 - b. The target of an authorization activity with act/entryRelationship/@typeCode="SUBJ" **SHALL** be a clinical statement with moodCode="PRMS" Promise (CONF:8951).
 - c. The target of an authorization activity **MAY** contain one or more performer, to indicate the providers that have been authorized to provide treatment (CONF:8952).

Figure 161: Authorization activity example

```

<act classCode="ACT" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.1.19"/>
  <!-- **** Authorization activity template **** -->
  <id root="f4dce790-8328-11db-9fe1-0800200c9a66"/>
  <code nullFlavor="NA"/>
  <entryRelationship typeCode="SUBJ">
    <procedure classCode="PROC" moodCode="PRMS">
      <code code="73761001"
            codeSystem="2.16.840.1.113883.6.96"
            displayName="Colonoscopy"/>
    </procedure>
  </entryRelationship>
</act>

```

6.10 Boundary Observation

[observation: templateId 2.16.840.1.113883.10.20.6.2.11 (open)]

Table 134: Boundary Observation Contexts

Used By:	Contains Entries:
Referenced Frames Observation	

A Boundary Observation contains a list of integer values for the referenced frames of a DICOM multiframe image SOP instance. It identifies the frame numbers within the referenced SOP instance to which the reference applies. The CDA Boundary Observation numbers frames using the same convention as DICOM, with the first frame in the referenced object being Frame 1. A Boundary Observation must be used if a referenced DICOM SOP instance is a multiframe image and the reference does not apply to all frames.

Table 135: Boundary Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.6.2.11']						
	@classCode	1..1	SHALL		9282	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		9283	2.16.840.1.113883.5.6 (HL7ActClass) = EVN
	code	1..1	SHALL	CD	9284	1.2.840.10008.2.16.4 (DCM) = 113036
	value	1..*	SHALL		9285	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9282).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9283).

3. **SHALL** contain exactly one [1..1] **code**="113036" Frames for Display (CodeSystem: DCM 1.2.840.10008.2.16.4) (CONF:9284).
Each number represents a frame for display.
4. **SHALL** contain at least one [1..*] **value** with @xsi:type="INT" (CONF:9285).

Figure 162: Boundary observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.11"/>
  <code code="113036"
    codeSystem="1.2.840.10008.2.16.4"
    displayName="Frames for Display"/>
  <value xsi:type="INT" value="1"/>
</observation>
```

6.11 Caregiver Characteristics

[observation: templateId 2.16.840.1.113883.10.20.22.4.72 (open)]

Table 136: Caregiver Characteristics Contexts

Used By:	Contains Entries:
Functional Status Result Observation (optional) Cognitive Status Result Observation (optional) Functional Status Problem Observation (optional) Cognitive Status Problem Observation (required) Functional Status Section (optional)	

This clinical statement represents a caregiver's willingness to provide care and the abilities of that caregiver to provide assistance to a patient in relation to a specific need.

Table 137: Caregiver Characteristics Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.72']					
	@classCode	1..1	SHALL		14219	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14220	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		14221	
	@root	1..1	SHALL		14222	2.16.840.1.113883.10.20.22.4.72
	id	1..*	SHALL		14223	
	code	1..1	SHALL		14230	
	statusCode	1..1	SHALL		14233	2.16.840.1.113883.5.14 (ActStatus) = Completed
	value	1..1	SHALL		14599	
	participant	0..*	SHALL		14227	
	time	0..1	MAY		14830	
	low	1..1	SHALL		14831	
	high	0..1	MAY		14832	
	participantRole	1..1	SHALL		14228	
	@classCode	1..1	SHALL		14229	IND

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14219).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14220).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:14221) such that it
 - a. This templateId **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.72"** (CONF:14222).
4. **SHALL** contain at least one [1..*] **id** (CONF:14223).
5. **SHALL** contain exactly one [1..1] **code** (CONF:14230).
6. **SHALL** contain exactly one [1..1] **statusCode="Completed"** (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14233).
7. **SHALL** contain exactly one [1..1] **value** (CONF:14599).
 - a. Where the **@code** **SHALL** be selected from LOINC (codeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96 (CONF:14600).
8. **SHALL** contain at least one [1..*] **participant** (CONF:14227).
 - a. Such participants **MAY** contain zero or one [0..1] **time** (CONF:14830).
 - i. The time, if present, **SHALL** contain exactly one [1..1] **low** (CONF:14831).
 - ii. The time, if present, **MAY** contain zero or one [0..1] **high** (CONF:14832).

- b. Such participants **SHALL** contain exactly one [1..1] **participantRole** (CONF:14228).
 - i. This participantRole **SHALL** contain exactly one [1..1] **@classCode="IND"** (CONF:14229).

Figure 163: Caregiver characteristics example with assertion

```
<section>
  ...
  <entry typeCode="DRIV">
    <observation classCode="OBS" moodCode="EVN">
      <!-- Functional Status Result Observation -->
      <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
      ...
      <entryRelationship typeCode="REFR">
        <observation classCode="OBS" moodCode="EVN">
          <!-- Caregiver Characteristics -->
          <templateId root="2.16.840.1.113883.10.20.22.4.72"/>
          <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
          <statusCode code="completed"/>
          <value xsi:type="CD" code="422615001"
            codeSystem="2.16.840.1.113883.6.96"
            displayName="caregiver difficulty providing physical
            care"/>
          <participant typeCode="IND">
            <participantRole classCode="CAREGIVER">
              <code code="MTH" codeSystem="2.16.840.1.113883.5.111"
                displayName="Mother"/>
            </participantRole>
          </participant>
        </observation>
      </entryRelationship>
    </observation>
  </entry>
  ...
</section>
```

Figure 164: Caregiver characteristics example without assertion

```
<entryRelationship typeCode="SUBJ">
  <observation classCode="OBS" moodCode="EVN">
    <!-- Functional Status Problem observation template -->
    <templateId root="2.16.840.1.113883.10.20.22.4.67"/>
    <id root="08edb7c0-2111-43f2-a784-9a5fdcaa67f0"/>
    <code code="404684003"
      codeSystem="2.16.840.1.113883.6.96"
      displayName="Finding of Functional Performance and activity"/>
    <statusCode code="completed"/>
    <effectiveTime>
      <low value="200702"/>
    </effectiveTime>
    <value xsi:type="CD" code=" 424445006"
      codeSystem="2.16.840.1.113883.6.96"
      displayName="difficulty with dressing upper body"/>
```

```

<entryRelationship typeCode="REFR">
  <observation classCode="OBS" moodCode="EVN">
    <!-- Caregiver Characteristics -->
    <templateId root="2.16.840.1.113883.10.20.22.4.9999999"/>
    <code code=" 5267-7" codeSystem="2.16.840.1.113883.6.1"
          displayName=" ADL or IADL assistance from any caregiver"
    <statusCode code="completed"/>
    <value xsi:type="CD" code=" 422615001"
          codeSystem="2.16.840.1.113883.6.96"
          displayName="caregiver difficulty providing physical care"/>
    <participant typeCode="IND">
      <participantRole classCode="CAREGIVER">
        <code code="MTH" codeSystem="2.16.840.1.113883.5.111"
              displayName="Mother"/>
      </participantRole>
    </participant>
  </observation>
</entryRelationship>
</observation>
</entryRelationship>

```

6.12 Code Observations

[observation: templateId 2.16.840.1.113883.10.20.6.2.13(open)]

Table 138: Code Observations Contexts

Used By:	Contains Entries:
	Quantity Measurement Observation SOP Instance Observation

DICOM Template 2000 specifies that Imaging Report Elements of Value Type Code are contained in sections. The Imaging Report Elements are inferred from Basic Diagnostic Imaging Report Observations that consist of image references and measurements (linear, area, volume, and numeric). Coded DICOM Imaging Report Elements in this context are mapped to CDA-coded observations that are section components and are related to the [SOP Instance Observations](#) (templateId 2.16.840.1.113883.10.20.6.2.8) or [Quantity Measurement Observations](#) (templateId 2.16.840.1.113883.10.20.6.2.14) by the SPRT (Support) act relationship.

Table 139: Code Observations Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.6.2.13']					
	@classCode	1..1	SHALL		9304	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		9305	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		15523	
	@root	1..1	SHALL		15524	2.16.840.1.113883.10.20.6.2.13
	code	1..1	SHALL	CD	9307	
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	9309	
	value	1..1	SHALL		9308	
	entryRelationship	0..*	MAY		9311	
	@typeCode	1..1	SHALL		9312	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SPRT
	entryRelationship	0..*	MAY		9314	
	@typeCode	1..1	SHALL		9315	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SPRT

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9304).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem:
ActMood 2.16.840.1.113883.5.1001) (CONF:9305).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:15523).
 - a. This templateId **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.6.2.13" (CONF:15524).
4. **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE" (CONF:9307).
5. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9309).
6. **SHALL** contain exactly one [1..1] **value** (CONF:9308).
7. Code Observations **SHALL** be rendered into section/text in separate
paragraphs (CONF:9310).
8. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9311) such that
it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SPRT"** Has Support
(CodeSystem: HL7ActRelationshipType
2.16.840.1.113883.5.1002) (CONF:9312).
 - b. **SHALL** contain exactly one [1..1] **SOP Instance Observation**
(2.16.840.1.113883.10.20.6.2.8) (CONF:9313).
9. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9314) such that
it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SPRT"** Has Support
(CodeSystem: HL7ActRelationshipType
2.16.840.1.113883.5.1002) (CONF:9315).

- b. **SHALL** contain exactly one [1..1] [Quantity Measurement Observation](#) (2.16.840.1.113883.10.20.6.2.14) (CONF:9316).

Figure 165: Code observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.13"/>
  <code code="18782-3" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="Study observation"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" code="309530007"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Hilar mass"/>
  <!-- entryRelationship elements referring to SOP Instance Observations
       or Quantity Measurement Observations may appear here -->
</observation>
```

6.13 Cognitive Status Problem Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.73 (open)]

Table 140: Cognitive Status Problem Observation Contexts

Used By:	Contains Entries:
<u>Functional Status Section</u> (optional)	<u>Assessment Scale Observation</u> <u>Caregiver Characteristics</u> <u>Non-Medicinal Supply Activity</u>

A cognitive status problem observation is a clinical statement that describes a patient's cognitive condition, findings, or symptoms. Examples of cognitive problem observations are inability to recall, amnesia, dementia, and aggressive behavior.

A cognitive problem observation is a finding or medical condition. This is different from a cognitive result observation, which is a response to a question that provides insight into the patient's cognitive status, judgement, comprehension ability, or response speed.

Table 141: Cognitive Status Problem Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.73']					
	@classCode	1..1	SHALL		14319	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@mood Code	1..1	SHALL		14320	2.16.840.1.113883.5.1001 (ActMood) = EVN
	@negation Ind	0..1	MAY		14344	
	templateId	1..1	SHALL		14346	
	@root	1..1	SHALL		14347	2.16.840.1.113883.10.20.22.4.73
	id	1..1	SHALL		14321	
	code	1..1	SHALL		14804	
	@code	0..1	SHOULD		14805	2.16.840.1.113883.6.96 (SNOMED-CT) = 373930000
	text	0..1	SHOULD		14341	
	reference/ @value	0..1	SHOULD		14342	
	statusCode	1..1	SHALL		14323	2.16.840.1.113883.5.14 (ActStatus) = completed
	effective Time	0..1	SHOULD	TS or IVL<TS>	14324	
	value	1..1	SHALL	CD	14349	2.16.840.1.113883.3.88.12.3221.7. 4 (Problem)
	Method Code	0..*	MAY		14693	
	entry Relationship	0..*	MAY		14331	
	@typeCode	1..1	SHALL		14588	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		14351	
	entry Relationship	0..*	SHALL		14335	
	@typeCode	1..1	SHALL		14589	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	observation	1..1	SHALL		14352	
	entry Relationship	0..*	SHALL		14467	
	@typeCode	1..1	SHALL		14590	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	observation	1..1	SHALL		14468	

1. Conforms to [Problem Observation](#) template (2.16.840.1.113883.10.20.22.4.4).
 2. **SHALL** contain exactly one [1..1] `@classCode="OBS"` Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14319).
 3. **SHALL** contain exactly one [1..1] `@moodCode="EVN"` Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14320).
- Use negationInd="true" to indicate that the problem was not observed.
4. **MAY** contain zero or one [0..1] `@negationInd` (CONF:14344).
 5. **SHALL** contain exactly one [1..1] `templateId` (CONF:14346) such that it
 - a. **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.22.4.73"` (CONF:14347).
 6. **SHALL** contain exactly one [1..1] `id` (CONF:14321).
 7. **SHALL** contain exactly one [1..1] `code` (CONF:14804).
 - a. This code **SHOULD** contain zero or one [0..1] `@code="373930000"` Cognitive function finding (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14805).
 8. **SHOULD** contain zero or one [0..1] `text` (CONF:14341).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] `reference/@value` (CONF:14342).
 - i. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:14343).
 9. **SHALL** contain exactly one [1..1] `statusCode="completed"` Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14323).
 10. **SHOULD** contain zero or one [0..1] `effectiveTime` (CONF:14324).
 - a. The onset date **SHALL** be recorded in the low element of the effectiveTime element when known (CONF:14325).
 - b. The resolution date **SHALL** be recorded in the high element of the effectiveTime element when known (CONF:14326).
 - c. If the problem is known to be resolved, but the date of resolution is not known, then the high element **SHALL** be present, and the nullFlavor attribute **SHALL** be set to 'UNK'. Therefore, the existence of a high element within a problem does indicate that the problem has been resolved (CONF:14327).
 11. **SHALL** contain exactly one [1..1] `value` with `@xsi:type="CD"`, where the `@code` **SHOULD** be selected from ValueSet [Problem 2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC](#) (CONF:14349).
 12. **MAY** contain zero or more [0..*] `methodCode` (CONF:14693).
 13. **MAY** contain zero or more [0..*] `entryRelationship` (CONF:14331) such that it
 - a. **SHALL** contain exactly one [1..1] `@typeCode="REFR"` refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14588).
 - b. **SHALL** contain exactly one [1..1] [Non-Medicinal Supply Activity](#) (`templateId:2.16.840.1.113883.10.20.22.4.50`) (CONF:14351).

14. **SHALL** contain zero or more [0..*] **entryRelationship** (CONF:14335) such that it
- SHALL** contain exactly one [1..1] @typeCode="REFR" refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14589).
 - SHALL** contain exactly one [1..1] Caregiver Characteristics (templateId:2.16.840.1.113883.10.20.22.4.72) (CONF:14352).
15. **SHALL** contain zero or more [0..*] **entryRelationship** (CONF:14467) such that it
- SHALL** contain exactly one [1..1] @typeCode="COMP" has component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14590).
 - SHALL** contain exactly one [1..1] Assessment Scale Observation (templateId:2.16.840.1.113883.10.20.22.4.69) (CONF:14468).

Table 142: Problem type value set

Value Set: Problem Type 2.16.840.1.113883.3.88.12.3221.7.2 STATIC 2012-06-01		
Code System(s):	SNOMED CT 2.16.840.1.113883.6.96	
Description:	This value set indicates the level of medical judgment used to determine the existence of a problem.	
Code	Code System	Print Name
404684003	SNOMED CT	Finding
409586006	SNOMED CT	Complaint
282291009	SNOMED CT	Diagnosis
64572001	SNOMED CT	Condition
248536006	SNOMED CT	Finding of functional performance and activity
418799008	SNOMED CT	Symptom
55607006	SNOMED CT	Problem
373930000	SNOMED CT	Cognitive function finding

Table 143: Problem Value Set (excerpt)

Value Set: Problem 2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC		
Code System(s):	SNOMED CT 2.16.840.1.113883.6.96	
Description:	Problems and diagnoses. Limited to terms descending from the Clinical Findings (404684003) or Situation with Explicit Context (243796009) hierarchies. http://phinvads.cdc.gov/vads/ViewValueSet.action?id=70FDBFB5-A277-DE11-9B52-0015173D1785	
Code	Code System	Print Name
46635009	SNOMED CT	Diabetes mellitus type 1
234422006	SNOMED CT	Acute porphyria
31712002	SNOMED CT	Primary biliary cirrhosis
302002000	SNOMED CT	Difficulty moving

Value Set: Problem 2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC		
Code System(s):	SNOMED CT 2.16.840.1.113883.6.96	
Description:	Problems and diagnoses. Limited to terms descending from the Clinical Findings (404684003) or Situation with Explicit Context (243796009) hierarchies. http://phinvads.cdc.gov/vads/ViewValueSet.action?id=70FDBFB5-A277-DE11-9B52-0015173D1785	
Code	Code System	Print Name
15188001	SNOMED CT	Hearing loss
48167000	SNOMED CT	Amnesia
...		

Figure 166:Cognitive status problem observation example

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.68"/>
  <!-- Cognitive Status Problem observation template -->
  <id root="08edb7c0-2111-43f2-a784-9a5fdfaa67f0"/>
  <code code="373930000"
        codeSystem="2.16.840.1.113883.6.96"
        displayName="Cognitive Function Finding"/>
  <text>
    ...
  </text>
  <statusCode code="completed"/>
  <effectiveTime>
    <low value="200704"/>
  </effectiveTime>
  <value xsi:type="CD" code=" 371632003"
        codeSystem="2.16.840.1.113883.6.96" displayName=" Comatose"/>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.72"/>
      <!--Caregiver Characteristics -->
      ...
    </observation>
  </entryRelationship>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.69"/>
      <!--Assessment Scale Observation -->
      ...
    </observation>
  </entryRelationship>
</observation>

```

6.14 Cognitive Status Result Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.74 (open)]

Table 144: Cognitive Status Result Observation Contexts

Used By:	Contains Entries:
Cognitive Status Result Organizer (required) Functional Status Section (optional)	Assessment Scale Observation Caregiver Characteristics Non-Medicinal Supply Activity

This clinical statement contains details of an evaluation or assessment of a patient's cognitive status. The evaluation may include assessment of a patient's mood, memory, and ability to make decisions. The statement, if present, will include supporting caregivers, non-medical devices, and the time period for which the evaluation and assessment were performed.

This is different from a cognitive status problem observation, which is a clinical statement that describes a patient's cognitive condition, findings, or symptoms. Examples of cognitive problem observations are inability to recall, amnesia, dementia, and aggressive behavior.

Table 145: Cognitive Status Result Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.74']						
	@classCode	1..1	SHALL		14249	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14250	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	14255	
	@root	1..1	SHALL		14256	2.16.840.1.113883.10.20.22.4.74
	id	1..*	SHALL		14257	
	code	1..1	SHALL		14591	
	@code	0..1	SHOULD		14592	2.16.840.1.113883.6.96 (SNOMED-CT) = 373930000
	text	0..1	SHOULD		14258	
	reference/ @value	0..1	SHOULD		14259	
	statusCode	1..1	SHALL		14254	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL	TS or IVL<TS>	14261	
	value	1..1	SHALL		14263	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	interpretationCode	0..*	SHOULD		14264	
	methodCode	0..1	MAY	SET<CE>	14265	
	targetSiteCode	0..1	MAY	SET<CD>	14270	
	author	0..1	MAY		14266	
	entryRelationship	0..*	MAY		14272	
	@typeCode	1..1	SHALL		14593	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		14273	
	entryRelationship	0..*	MAY		14276	
	@typeCode	1..1	SHALL		14594	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	observation	1..1	SHALL		14277	
	entryRelationship	0..*	MAY		14469	
	@typeCode	1..1	SHALL		14595	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	observation	1..1	SHALL		14470	
	referenceRange	0..*	SHOULD		14267	
	observationRange	1..1	SHALL		14268	
	code	0..0	SHALL NOT		14269	

1. Conforms to [Result Observation](#) template (2.16.840.1.113883.10.20.22.4.2).
2. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14249).
3. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14250).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:14255) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.74"** (CONF:14256).
5. **SHALL** contain at least one [1..*] **id** (CONF:14257).
6. **SHALL** contain exactly one [1..1] **code** (CONF:14591).
 - a. This code **SHOULD** contain zero or one [0..1] **@code="373930000"** Cognitive function finding (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14592).
7. **SHOULD** contain zero or one [0..1] **text** (CONF:14258).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference/@value** (CONF:14259).
 - i. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:14260).

8. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:14254).
Represents clinically effective time of the measurement, which may be the time the measurement was performed (e.g., a BP measurement), or may be the time the sample was taken (and measured some time afterwards).
9. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:14261).
10. **SHALL** contain exactly one [1..1] **value** (CONF:14263).
 - a. If xsi:type="CD", **SHOULD** contain a code from SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96) (CONF:14271).
11. **SHOULD** contain zero or more [0..*] **interpretationCode** (CONF:14264).
12. **MAY** contain zero or one [0..1] **methodCode** (CONF:14265).
13. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:14270).
14. **MAY** contain zero or one [0..1] **author** (CONF:14266).
15. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:14272) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14593).
 - b. **SHALL** contain exactly one [1..1] [Non-Medicinal Supply Activity](#) (templateId:2.16.840.1.113883.10.20.22.4.50) (CONF:14273).
16. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:14276) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14594).
 - b. **SHALL** contain exactly one [1..1] [Caregiver Characteristics](#) (templateId:2.16.840.1.113883.10.20.22.4.72) (CONF:14277).
17. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:14469) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="COMP" has component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14595).
 - b. **SHALL** contain exactly one [1..1] [Assessment Scale Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.69) (CONF:14470).
18. **SHOULD** contain zero or more [0..*] **referenceRange** (CONF:14267).
 - a. The referenceRange, if present, **SHALL** contain exactly one [1..1] **observationRange** (CONF:14268).
 - i. This observationRange **SHALL NOT** contain [0..0] **code** (CONF:14269).

Figure 167: Cognitive status result observation example

```
<observation classCode="OBS" moodCode="EVN">
  <!--Cognitive Status Result Oservation template -->
  <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
  <id root=" c6b5a04b-2bf4-49d1-8336-636a3813df0a"/>
  <code code="5249-2"
    displayName="Observational Assessment of Cognitive Status
    at 2D Assessment"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"/>
  <statusCode code="completed"/>
  <effectiveTime value="200903111230"/>
  <value xsi:type="CD"/>
  <code code="61372001" displayName="Aggressive behavior"
    codeSystem="2.16.840.1.113883.5.83"
    codeSystemName="SNOMED CT"/>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.69"/>
      <!-- Assessment Scale Observation -->
      ...
    </observation>
  </entryRelationship>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.72"/>
      <!--Caregiver Support and Ability -->
      ...
    </observation>
  </entryRelationship>
</observation>
```

6.15 Cognitive Status Result Organizer

[organizer: templateId 2.16.840.1.113883.10.20.22.4.75 (open)]

Table 146: Cognitive Status Result Organizer Contexts

Used By:	Contains Entries:
Functional Status Section (optional)	Cognitive Status Result Observation

This clinical statement identifies a set of cognitive status result observations. It contains information applicable to all of the contained cognitive status result observations. A result organizer may be used to group questions in a Patient Health Questionnaire (PHQ).

An appropriate nullFlavor can be used when the organizer/code or organizer/id is unknown.

Table 147: Cognitive Status Result Organizer Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	organizer[templateId/@root = '2.16.840.1.113883.10.20.22.4.75']					
	@classCode	1..1	SHALL		14369	2.16.840.1.113883.5.6 (HL7ActClass) = CLUSTER
	@moodCode	1..1	SHALL		14371	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	14375	
	@root	1..1	SHALL		14376	2.16.840.1.113883.10.20.22.4.75
	id	1..*	SHALL		14377	
	code	1..1	SHALL		14378	
	@code	0..1	SHOULD		14697	
	statusCode	1..1	SHALL		14372	2.16.840.1.113883.5.14 (ActStatus) = completed
	component	1..*	SHALL		14373	
	observation	1..1	SHALL		14381	

1. Conforms to [Result Organizer](#) template (2.16.840.1.113883.10.20.22.4.1).
2. **SHALL** contain exactly one [1..1] @classCode, which **SHALL** be selected from CodeSystem HL7ActClass (2.16.840.1.113883.5.6)="CLUSTER" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14369).
3. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14371).
4. **SHALL** contain exactly one [1..1] templateId (CONF:14375) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.75" (CONF:14376).
5. **SHALL** contain at least one [1..*] id (CONF:14377).
6. **SHALL** contain exactly one [1..1] code (CONF:14378).
 - a. This code **SHOULD** contain zero or one [0..1] @code (CONF:14697).
 - i. Should be selected from ICF (codeSystem 2.16.840.1.113883.6.254) or SNOMED CT (codeSystem 2.16.840.1.113883.6.96) (CONF:14698).
7. **SHALL** contain exactly one [1..1] statusCode="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14372).
8. **SHALL** contain at least one [1..*] component (CONF:14373) such that it
 - a. **SHALL** contain exactly one [1..1] [Cognitive Status Result Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.74) (CONF:14381).

Figure 168 Cognitive status result organizer example

```
<organizer classCode="CLUSTER" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.75"/>
  <!-- Cognitive Status Result Organizer template -->
  <id root="9295dba4-df05-46bb-b94e-f2c4e4b156f8"/>
  <code code="d3" displayName="Communication"
    codeSystem="2.16.840.1.113883.6.254" codeSystemName="ICF"/>
  <statusCode code="completed"/>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <!-- Cognitive Status Result observation
          (Understanding Verbal Content) -->
      <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
      ...
    </observation>
  </component>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <!-- Cognitive Status Result observation(Expression of Ideas) -->
      <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
      ...
    </observation>
  </component>
</organizer>
```

6.16 Comment Activity

[act: templateId 2.16.840.1.113883.10.20.22.4.64 (open)]

Table 148: Comment Activity Contexts

Used By:	Contains Entries:
Any document	

Comments are free text data that cannot otherwise be recorded using data elements already defined by this specification. They are not to be used to record information that can be recorded elsewhere. For example, a free text description of the severity of an allergic reaction would not be recorded in a comment.

Table 149: Comment Activity Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.64']					
	@classCode	1..1	SHALL		9425	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		9426	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	9427	
	@root	1..1	SHALL		10491	2.16.840.1.113883.10.20.22.4 .64
	code	1..1	SHALL	CD	9428	2.16.840.1.113883.6.1 (LOINC) = 48767-8
	text	1..1	SHALL	ED	9430	
free Text Comment	reference/@value	1..1	SHALL		9431	
author	author	0..1	MAY		9433	
	time	1..1	SHALL	IVL<TS>	9434	
	assignedAuthor	1..1	SHALL		9435	
	id	1..1	SHALL	II	9436	
	addr	1..1	SHALL	SET<AD>	9437	

1. Data elements defined elsewhere in the specification **SHALL NOT** be recorded using the Comment Activity (CONF:9429).
2. **SHALL** contain exactly one [1..1] **@classCode="ACT"** Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9425).
3. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9426).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:9427) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.64"** (CONF:10491).
5. **SHALL** contain exactly one [1..1] **code="48767-8"** Annotation Comment (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:9428).
 - a. This text **SHALL** contain exactly one [1..1] **reference** (CONF:15967).
 - i. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:15968).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15969).
6. **MAY** contain zero or one [0..1] **author** (CONF:9433).
 - a. The author, if present, **SHALL** contain exactly one [1..1] **time** (CONF:9434).

- b. The author, if present, **SHALL** contain exactly one [1..1] **assignedAuthor** (CONF:9435).
 - i. This assignedAuthor **SHALL** contain exactly one [1..1] **id** (CONF:9436).
 - ii. This assignedAuthor **SHALL** contain exactly one [1..1] **addr** (CONF:9437).
 - 1. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10480).
 - iii. **SHALL** include assignedPerson/name or representedOrganization/name (CONF:9438).
 - iv. An assignedPerson/name **SHALL** be a conformant [US Realm Person Name \(PN.US.FIELDDED\)](#) (2.16.840.1.113883.10.20.22.5.1.1) (CONF:9439).

Figure 169: Comment act example

```

<act classCode="ACT" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.64"/>
  <!-- Comment template -->
  <code code="48767-8" displayName="comment"
    codeSystemName="LOINC"
    codeSystem="2.16.840.1.113883.6.1"/>
  <text>The patient stated that he was looking forward to an upcoming
    vacation to New York with his family. He was concerned that he may
    not have enough medication for the trip. An additional prescription
    was provided to cover that period of time.
    <reference value="#PntrtoSectionText"/>
  </text>
  <author>
    <time value="20050329224411+0500"/>
    <assignedAuthor>
      <id extension="KP00017" root="2.16.840.1.113883.19.5"/>
      <addr>
        <streetAddressLine>21 North Ave.</streetAddressLine>
        <city>Burlington</city>
        <state>MA</state>
        <postalCode>02368</postalCode>
        <country>US</country>
      </addr>
      <telecom use="WP" value="tel:(555) 555-1003"/>
      <assignedPerson>
        <name>
          <given>Henry</given>
          <family>Seven</family>
        </name>
      </assignedPerson>
    </assignedAuthor>
  </author>
</act>

```

6.17 Coverage Activity

[act: templateId 2.16.840.1.113883.10.20.22.4.60 (open)]

Table 150: Coverage Activity Contexts

Used By:	Contains Entries:
Payers Section (optional)	Policy Activity

A Coverage Activity groups the policy and authorization acts within a Payers Section to order the payment sources. A Coverage Activity contains one or more policy activities, each of which contains zero or more authorization activities. The Coverage Activity id is the Id from the patient's insurance card. The sequenceNumber/@value shows the policy order of preference.

Table 151: Coverage Activity Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.60']					
	@classCode	1..1	SHALL		8872	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		8873	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	8897	
	@root	1..1	SHALL		10492	2.16.840.1.113883.10.20.22.4.60
	id	1..*	SHALL		8874	
	code	1..1	SHALL	CE	8876	2.16.840.1.113883.6.1 (LOINC) = 48768-6
	statusCode	1..1	SHALL		8875	2.16.840.1.113883.5.14 (ActStatus) = completed
	entryRelationship	1..*	SHALL		8878	
	@typeCode	1..1	SHALL		8879	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	act	1..1	SHALL		15528	

1. **SHALL** contain exactly one [1..1] @classCode="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8872).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8873).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8897) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.60" (CONF:10492).
4. **SHALL** contain at least one [1..*] **id** (CONF:8874).
5. **SHALL** contain exactly one [1..1] **code**="48768-6" Payment Sources with @xsi:type="CE" (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:8876).

6. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8875).
7. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:8878) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="COMP" has component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:8879).
 - b. **SHALL** contain exactly one [1..1] **Policy Activity** (templateId:2.16.840.1.113883.10.20.22.4.61) (CONF:15528).

Figure 170: Coverage activity example

```
<act classCode="ACT" moodCode="DEF">
  <templateId root="2.16.840.1.113883.10.20.22.4.60"/>
  <!-- **** Coverage activity template **** -->
  <id root="1fe2cdd0-7aad-11db-9fe1-0800200c9a66"/>
  <code code="48768-6" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC" displayName="Payment sources"/>
  <statusCode code="completed"/>
  <entryRelationship typeCode="COMP">
    <act classCode="ACT" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.61"/>
      <!-- **** Policy Activity template **** -->
      ...
    </act>
  </entryRelationship>
</act>
```

6.18 Deceased Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.79 (open)]

Table 152: Deceased Observation Contexts

Used By:	Contains Entries:
	Problem Observation

This clinical statement represents the observation that a patient has expired. It also represents the cause of death, indicated by an entryRelationship type of “CAUS”.

Table 153: Deceased Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.79']					
	@classCode	1..1	SHALL		14851	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14852	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		14871	
	@root	1..1	SHALL		14872	2.16.840.1.113883.10.20.22.4 .79
	id	1..*	SHALL		14873	
	code	1..1	SHALL		14853	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	statusCode	1..1	SHALL		14854	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL		14855	
	low	1..1	SHALL		14874	
	value	1..1	SHALL	CD	14857	
	@code	1..1	SHALL		15142	2.16.840.1.113883.6.96 (SNOMED-CT) = 419099009
	entryRelationship	0..1	SHOULD		14868	
	@typeCode	1..1	SHALL		14875	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = CAUS
	observation	1..1	SHALL		14870	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:14851).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:14852).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:14871) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.79"** (CONF:14872).
4. **SHALL** contain at least one [1..*] **id** (CONF:14873).
5. **SHALL** contain exactly one [1..1] **code="ASSERTION"** Assertion (CodeSystem: ActCode 2.16.840.1.113883.5.4 **STATIC**) (CONF:14853).
6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:14854).
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:14855).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:14874).
8. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:14857).
 - a. This value **SHALL** contain exactly one [1..1] **@code="419099009"** Dead (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:15142).

9. **SHOULD** contain zero or one [0..1] **entryRelationship** (CONF:14868) such that it
- SHALL** contain exactly one [1..1] @typeCode="CAUS" Is etiology for (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14875).
 - SHALL** contain exactly one [1..1] **Problem Observation** (templateId:2.16.840.1.113883.10.20.22.4.4) (CONF:14870).

Figure 171: Deceased observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.79"/>
  <!-- Deceased observation template -->
  <id root="6898fae0-5c8a-11db-b0de-0800200c9a77"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <effectiveTime>
    <low value="20100303"/>
  </effectiveTime>
  <value xsi:type="CD" code="419099009"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Dead"/>
</observation>
```

6.19 Discharge Medication

[act: templateId 2.16.840.1.113883.10.20.22.4.35 (open)]

Table 154: Discharge Medication Contexts

Used By:	Contains Entries:
Hospital Discharge Medications Section (entries required)	Medication Activity
Hospital Discharge Medications Section (entries optional)	

The Discharge Medications entry codes medications that the patient is intended to take (or stop) after discharge.

Table 155: Discharge Medication Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.35']					
	@classCode	1..1	SHALL		7689	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		7690	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16760	
	@root	1..1	SHALL		16761	2.16.840.1.113883.10.20.22.4.35
	code	1..1	SHALL	CD	7691	2.16.840.1.113883.6.1 (LOINC) = 10183-2
	entryRelationship	1..1	SHALL		7692	
	@typeCode	1..1	SHALL		7693	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	substanceAdministration	1..1	SHALL		15525	

1. **SHALL** contain exactly one [1..1] **@classCode="ACT"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7689).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7690).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:16760) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.35"** (CONF:16761).
4. **SHALL** contain exactly one [1..1] **code="10183-2"** Discharge medication (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:7691).
5. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:7692) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7693).
 - b. **SHALL** contain exactly one [1..1] **Medication Activity** (templateId:2.16.840.1.113883.10.20.22.4.16) (CONF:15525).

Figure 172: Discharge medication entry example

```
<entry>
  <act classCode="ACT" moodCode="EVN">
    <!-- Discharge Medication Entry -->
    <templateId root="2.16.840.1.113883.10.20.22.4.35"/>
    <id root="5a784260-6856-4f38-9638-80c751aff2fb"/>
    <code code="10183-2"
      codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"
      displayName="Discharge medication"/>
    <statusCode code="active"/>
    <effectiveTime>
      <low value="20030303"/>
    </effectiveTime>
    <entryRelationship typeCode="SUBJ">
      <substanceAdministration moodCode="" classCode="SBADM">
        <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
        <!-- Medication Activity -->
        ...
      </substanceAdministration>
    </entryRelationship>
  </act>
</entry>
```

6.20 Drug Vehicle

[participantRole: templateId 2.16.840.1.113883.10.20.22.4.24(open)]

Table 156: Drug Vehicle Contexts

Used By:	Contains Entries:
Medication Activity Immunization Activity	

This template represents the vehicle (e.g., saline, dextrose) for administering a medication.

Table 157: Drug Vehicle Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	participantRole[templateId/@root = '2.16.840.1.113883.10.20.22.4.24']					
	@classCode	1..1	SHALL		7490	2.16.840.1.113883.5.110 (RoleClass) = MANU
	templateId	1..1	SHALL	SET<II>	7495	
	@root	1..1	SHALL		10493	2.16.840.1.113883.10.20.22.4.24
	code	1..1	SHALL		7491	2.16.840.1.113883.6.96 (SNOMED-CT) = 412307009
	playingEntity	1..1	SHALL		7492	
	code	1..1	SHALL		7493	
	name	0..1	MAY		7494	

1. **SHALL** contain exactly one [1..1] @classCode="MANU" (CodeSystem: RoleClass 2.16.840.1.113883.5.110) (CONF:7490).
2. **SHALL** contain exactly one [1..1] templateId (CONF:7495) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.24" (CONF:10493).
3. **SHALL** contain exactly one [1..1] code="412307009" Drug Vehicle (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:7491).
4. **SHALL** contain exactly one [1..1] playingEntity (CONF:7492).

This playingEntity/code is used to supply a coded term for the drug vehicle.

- a. This playingEntity **SHALL** contain exactly one [1..1] code (CONF:7493).
- b. This playingEntity **MAY** contain zero or one [0..1] name (CONF:7494).
 - i. This playingEntity/name **MAY** be used for the vehicle name in text, such as Normal Saline (CONF:10087).

Figure 173: Drug vehicle entry example

```
<participantRole classCode="MANU">
  <templateId root="2.16.840.1.113883.10.20.22.4.24"/>
  <code code="412307009"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="drug vehicle" />
  <playingEntity classCode="MMAT">
    <code code="125464" displayName="Normal Saline"
      codeSystem="2.16.840.1.113883.6.88"
      codeSystemName="RxNorm"/>
    <name>Normal Saline</name>
  </playingEntity>
</participantRole>
```

6.21 Encounter Activities

[encounter: templateId 2.16.840.1.113883.10.20.22.4.49 (open)]

Table 158: Encounter Activities Contexts

Used By:	Contains Entries:
Encounters Section (entries optional) (optional) Encounters Section (entries required) (required)	Encounter Diagnosis Indication Service Delivery Location

This clinical statement describes the interactions between the patient and clinicians. Interactions include in-person encounters, telephone conversations, and email exchanges.

Table 159: Encounter Activities Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
Green Encounter Activities	encounter[templateId/@root = '2.16.840.1.113883.10.20.22.4.49']					
	@classCode	1..1	SHALL		8710	2.16.840.1.113883.5.6 (HL7ActClass) = ENC
	@moodCode	1..1	SHALL		8711	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET< II>	8712	
encounter ID	id	1..*	SHALL		8713	
encounter Type	code	0..1	SHOULD		8714	2.16.840.1.113883.3.88.1 2.80.32 (EncounterTypeCode)
	originalText	0..1	SHOULD		8719	
	reference	0..1	SHOULD		15970	
	@value	0..1	SHOULD		15971	
encounter FreeText Type	reference/@value	0..1	SHOULD		8720	
encounter DateTime	effectiveTime	1..1	SHALL	TS or IVL< TS>	8715	
	performer	0..*	MAY		8725	
encounter Provider	assignedEntity	1..1	SHALL		8726	
	code	0..1	MAY		8727	
facility Location	participant	0..*	MAY		8738	
	@typeCode	1..1	SHALL		8740	2.16.840.1.113883.5.1002 (HL7ActRelationshipType)

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
						= LOC
	participantRole	1..1	SHALL		14903	
reasonFor Visit	entryRelationship	0..*	MAY		8722	
	@typeCode	1..1	SHALL		8723	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		14899	
	entryRelationship	0..*	MAY		15492	
	act	1..1	SHALL		15973	

1. **SHALL** contain exactly one [1..1] **@classCode="ENC"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8710).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8711).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8712) such that it
4. **SHALL** contain at least one [1..*] **id** (CONF:8713).
5. **SHOULD** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet EncounterTypeCode 2.16.840.1.113883.3.88.12.80.32 **DYNAMIC** (CONF:8714).
 - a. The code, if present, **SHOULD** contain zero or one [0..1] **originalText** (CONF:8719).
 - i. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15970).
 1. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15971).
 - a. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15972).
 - ii. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference/@value** (CONF:8720).
 6. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:8715).
 7. **MAY** contain zero or more [0..*] **performer** (CONF:8725).
 - a. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:8726).
 - i. This assignedEntity **MAY** contain zero or one [0..1] **code** (CONF:8727).
 8. **MAY** contain zero or more [0..*] **participant** (CONF:8738) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="LOC"** Location (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8740).

- b. **SHALL** contain exactly one [1..1] [Service Delivery Location](#) (templateId:2.16.840.1.113883.10.20.22.4.32) (CONF:14903).
9. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:8722) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:8723).
 - b. **SHALL** contain exactly one [1..1] [Indication](#) (templateId:2.16.840.1.113883.10.20.22.4.19) (CONF:14899).
10. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:15492) such that it
- a. **SHALL** contain exactly one [1..1] [Encounter Diagnosis](#) (templateId:2.16.840.1.113883.10.20.22.4.80) (CONF:15973).
11. **MAY** contain zero or one [0..1] [sdtc:dischargeDispositionCode](#), which **SHALL** be selected from ValueSet 2.16.840.1.113883.3.88.12.80.33 NUBC UB-04 FL17-Patient Status **DYNAMIC** or, if access to NUBC is unavailable, from CodeSystem 2.16.840.1.113883.12.112 HL7 Discharge Disposition. The prefix **sdtc:** **SHALL** be bound to the namespace “urn:hl7-org:sdtc”. The use of the namespace provides a necessary extension to CDA R2 for the use of the dischargeDispositionCode element (CONF:9929).

Table 160: Encounter Type Value Set

Value Set: EncounterTypeCode 2.16.840.1.113883.3.88.12.80.32 DYNAMIC Code System: CPT-4 2.16.840.1.113883.6.12 This value set includes only the codes of the Current Procedure and Terminology designated for Evaluation and Management (99200 – 99607) (subscription to AMA Required http://www.amacodingonline.com/)		
Code	Code System	Print Name
99201	CPT-4	Office or other outpatient visit (problem focused)
99202	CPT-4	Office or other outpatient visit (expanded problem (expanded))
99203	CPT-4	Office or other outpatient visit (detailed)
99204	CPT-4	Office or other outpatient visit (comprehensive, (comprehensive - moderate))
99205	CPT-4	Office or other outpatient visit (comprehensive, comprehensive-high)
...	CPT-4	...

Figure 174: Encounter activities example

```
<entry typeCode="DRIV">
    <encounter classCode="ENC" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.49"/>
        <!-- Encounter Activities -->
        <id root="2a620155-9d11-439e-92b3-5d9815ff4de8"/>
        <code code="99241"
            displayName="Office consultation - 15 minutes"
            codeSystemName="CPT-4"
            codeSystem="2.16.840.1.113883.6.12"
            codeSystemVersion="4">
            <originalText>Checkup Examination<reference
            value="#Encounter1"/>
        </originalText>
        <translation code="AMB"
            codeSystem="2.16.840.1.113883.5.4"
            displayName="Ambulatory"
            codeSystemName="HL7ActEncounterCode"/>
    </code>
    <effectiveTime value="20000407"/>
    <performer>
        <assignedEntity>
            <code code="59058001"
                codeSystem="2.16.840.1.113883.6.96"
                codeSystemName="SNOMED CT"
                displayName="General Physician"/>
        </assignedEntity>
    </performer>
    <participant typeCode="LOC">
        <participantRole classCode="SDLOC">
            <templateId root="2.16.840.1.113883.10.20.22.4.32"/>
            ...
        </participantRole>
    </participant>
    <entryRelationship typeCode="RSON">
        <observation classCode="OBS" moodCode="EVN">
            <!-- Indication -->
            <templateId root="2.16.840.1.113883.10.20.22.4.19"/>
            ...
        </observation>
    </entryRelationship>
    </encounter>
</entry>
```

6.22 Encounter Diagnosis

[act: templateId 2.16.840.1.113883.10.20.22.4.80 (open)]

Table 161: Encounter Diagnosis Contexts

Used By:	Contains Entries:
Encounter Activities (optional)	Problem Observation

This template wraps relevant problems or diagnoses at the close of a visit or that need to be followed after the visit. If the encounter is associated with a Hospital Discharge, the [Hospital Discharge Diagnosis](#) must be used. This entry requires at least one [Problem Observation](#) entry.

Table 162: Encounter Diagnosis Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
act[templateId/@root = '2.16.840.1.113883.10.20.22.4.80 ']						
	@classCode	1..1	SHALL		14889	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		14890	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		14895	
	@root	1..1	SHALL		14896	2.16.840.1.113883.10.20.22.4.80
	code	1..1	SHALL	CE	14891	
	@code	1..1	SHALL		14897	2.16.840.1.113883.6.1 (LOINC) = 29308-4
	entry Relationship	1..*	SHALL		14892	
	@typeCode	1..1	SHALL		14893	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	observation	1..1	SHALL		14898	

1. **SHALL** contain exactly one [1..1] **@classCode="ACT"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14889).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14890).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:14895) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.80"** (CONF:14896).
4. **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE" (CONF:14891).
 - a. This code **SHALL** contain exactly one [1..1] **@code="29308-4"** Diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:14897).
5. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:14892) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14893).
 - b. **SHALL** contain exactly one [1..1] [Problem Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.4) (CONF:14898).

Figure 175: Encounter diagnosis act example

```

<act classCode="ACT" moodCode="EVN">
    <!--Encounter diagnosis act -->
    <templateId root="2.16.840.1.113883.10.20.22.4.80"/>
    <id root="5a784260-6856-4f38-9638-80c751aff2fb"/>
    <code code="29038-4"
        codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="ENCOUNTER DIAGNOSIS"/>
    <statusCode code="active"/>
    <effectiveTime>
        <low value="20903003"/>
    </effectiveTime>
    <entryRelationship typeCode="SUBJ" inversionInd="false">
        <observation classCode="OBS" moodCode="EVN" negationInd="false">
            <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
            <!-- Problem Observation -->
            ...
        </observation>
    </entryRelationship>
</act>

```

6.23 Estimated Date of Delivery

[observation: templateId 2.16.840.1.113883.10.20.15.3.1(closed)]

Table 163: Estimated Date of Delivery Contexts

Used By:	Contains Entries:
Pregnancy Observation	

This clinical statement represents the anticipated date when a woman will give birth.

Table 164: Estimated Date of Delivery Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.15.3.1']					
	@classCode	1..1	SHALL		444	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		445	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16762	
	@root	1..1	SHALL		16763	2.16.840.1.113883.10.20.15.3.1
	code	1..1	SHALL	CE	446	2.16.840.1.113883.6.1 (LOINC) = 11778-8
	statusCode	1..1	SHALL		448	2.16.840.1.113883.5.14 (ActStatus) = completed
	value	1..1	SHALL	TS	450	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:444).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:445).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:16762) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.15.3.1"** (CONF:16763).
4. **SHALL** contain exactly one [1..1] **code="11778-8"** Estimated date of delivery (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:446).
5. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:448).
6. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="TS"** (CONF:450).

Figure 176: Estimated date of delivery example

```
<observation classCode="OBS" moodCode="EVN">
  <!-- Estimated Date of Delivery observation template -->
  <templateId root="2.16.840.1.113883.10.20.15.3.1"/>
  <id extension="123456789" root="2.16.840.1.113883.19"/>
  <code code="11778-8" codeSystem="2.16.840.1.113883.6.1"
        displayName="Estimated date of delivery"/>
  <statusCode code="completed"/>
  <value xsi:type="TS">20110919</value>
</observation>
```

6.24 Family History Death Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.47(open)]

Table 165: Family History Death Observation Contexts

Used By:	Contains Entries:
Family History Observation	

This clinical statement records whether the family member is deceased.

Table 166: Family History Death Observation Constraints Overview

Name	XPath	Card .	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.47']					
	@classCode	1..1	SHALL		8621	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		8622	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<I I>	8623	
	@root	1..1	SHALL		10495	2.16.840.1.113883.10.20.22.4.47
	code	1..1	SHALL		16889	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	statusCode	1..1	SHALL		8625	2.16.840.1.113883.5.14 (ActStatus) = completed
	value	1..1	SHALL	CD	8626	2.16.840.1.113883.6.96 (SNOMED-CT) = 419099009

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8621).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8622).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8623) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.47"** (CONF:10495).
4. **SHALL** contain exactly one [1..1] **code="ASSERTION"** Assertion (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:16889).
5. **SHALL** contain exactly one [1..1] **statusCode="completed"** (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8625).
6. **SHALL** contain exactly one [1..1] **value="419099009"** Dead with **@xsi:type="CD"** (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:8626).

Figure 177: Family history death observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.47"/>
  <!-- Family history death observation template -->
  <id root="6898fae0-5c8a-11db-b0de-0800200c9a66"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" code="419099009"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Dead"/>
</observation>
```

6.25 Family History Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.46 (open)]

Table 167: Family History Observation Contexts

Used By:	Contains Entries:
Family History Organizer (optional)	Age Observation Family History Death Observation

Family History Observations related to a particular family member are contained within a Family History Organizer. The effectiveTime in the Family History Observation is the biologically or clinically relevant time of the observation. The biologically or clinically relevant time is the time at which the observation holds (is effective) for the family member (the subject of the observation).

Table 168: Family History Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Family History Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.46']					
	@classCode	1..1	SHALL		8586	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		8587	2.16.840.1.113883.5.100 1 (ActMood) = EVN
	templateId	1..1	SHALL	SET< II>	8599	
	@root	1..1	SHALL		10496	2.16.840.1.113883.10.20. 22.4.46
	id	1..*	SHALL		8592	
	code	1..1	SHALL		8589	2.16.840.1.113883.3.88.1 2.3221.7.2 (Problem Type)
	statusCode	1..1	SHALL		8590	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	0..1	SHOULD	TS or IVL< TS>	8593	
	value	1..1	SHALL	CD	8591	2.16.840.1.113883.3.88.1 2.3221.7.4 (Problem)
	entryRelationship	0..1	MAY		8675	
	@typeCode	1..1	SHALL		8676	2.16.840.1.113883.5.90 (HL7ParticipationType) = SUBJ
	@inversionInd	1..1	SHALL		8677	true
	observation	1..1	SHALL		15526	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	entryRelationship	0..1	MAY		8678	
	@typeCode	1..1	SHALL		8679	2.16.840.1.113883.5.90 (HL7ParticipationType) = CAUS
	observation	1..1	SHALL		15527	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8586).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8587).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8599) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.46" (CONF:10496).
4. **SHALL** contain at least one [1..*] **id** (CONF:8592).
5. **SHALL** contain exactly one [1..1] **code**, which **SHOULD** be selected from ValueSet Problem Type 2.16.840.1.113883.3.88.12.3221.7.2 **STATIC** 2012-06-01 (CONF:8589).
6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8590).
7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:8593).
8. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the @code **SHALL** be selected from [ValueSet Problem 2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC](#) (CONF:8591).
9. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8675) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Subject (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8676).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** True (CONF:8677).
 - c. **SHALL** contain exactly one [1..1] [Age Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.31) (CONF:15526).
10. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8678) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CAUS"** Causal or Contributory (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8679).
 - b. **SHALL** contain exactly one [1..1] [Family History Death Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.47) (CONF:15527).

Figure 178: Family history observation scenario

SCENARIO

A patient's father was diagnosed with diabetes at the age of 40. He died of Myocardial Infarction at the age of 57. If the patient's father was born in 1910, the family history organizer for the father would contain the following items:

The Date of Birth

RelatedSubject/subject/birthTime => 1910

The Date of Death

RelatedSubject/subject/sdtc:deceasedInd => true

RelatedSubject/subject/sdtc:deceasedTime => 1967

The Diabetes Diagnosis

component/observation/effectiveTime => 1950

component/observation/value => contains the code and displayName for diabetes

component/observation/entryRelationship/observation/value/@value => 40
with the unit set to "a" to indicate years

The Myocardial Infarction Diagnosis and Cause of Death

component/observation/effectiveTime => 1967

component/observation/value => contains the code and displayName for MI

component/observation/entryRelationship/observation/value/@value => 57
with the unit set to "a" to indicate years

component/observation/entryRelationship/@typeCode => "CAUS". This second entryRelationship shows that the MI was the cause of death.

The next example uses the above scenario .

Figure 179: Family history observation example

```
<section>
    <templateId root="2.16.840.1.113883.10.20.22.2.15"/>
    <!-- ***** Family history section template ***** -->
    <code code="10157-6" codeSystem="2.16.840.1.113883.6.1"/>
    <title>FAMILY HISTORY</title>
    <text>
        <paragraph>Father (deceased)</paragraph>
        <table border="1" width="100%">
            <thead>
                <tr>
                    <th>Diagnosis</th>
                    <th>Age At Onset</th>
                </tr>
            </thead>
            <tbody>
                <tr>
                    <td>Myocardial Infarction (cause of death)</td>
                    <td>57</td>
                </tr>
                <tr>
                    <td>Diabetes</td>
                    <td>40</td>
                </tr>
            </tbody>
        </table>
    </text>
    <entry typeCode="DRIV">
        <organizer moodCode="EVN" classCode="CLUSTER">
            <templateId root="2.16.840.1.113883.10.20.22.4.45"/>
        <!-- ***** Family history organizer template ***** -->
        <statusCode code="completed"/>
        <subject>
            <relatedSubject classCode="PRS">
                <code code="FTH" displayName="Father"
                    codeSystemName="HL7 FamilyMember"
                    codeSystem="2.16.840.1.113883.5.111">
                    <translation code="9947008"
                        displayName="Biological father"
                        codeSystemName="SNOMED"
                        codeSystem="2.16.840.1.113883.6.96"/>
                </code>
                <subject>
                    <administrativeGenderCode code="M"
                        codeSystem="2.16.840.1.113883.5.1"
                        displayName="Male"/>
                    <birthTime value="1910"/>
                    <ssdtc:deceasedInd value="true"/>
                    <ssdtc:deceasedTime value="1967"/>
                </subject>
            </relatedSubject>
        </subject>
    </entry>

```

```

<component>
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.46"/>
    <!-- Family History Observation template -->
    <id root="d42ebf70-5c89-11db-b0de-0800200c9a66"/>
    <code code="55561003" displayName="Active"
      codeSystemName="SNOMED CT"
      codeSystem="2.16.840.1.113883.6.96"/>
    <statusCode code="completed"/>
    <effectiveTime value="1967"/>
    <value xsi:type="CD" code="22298006"
      codeSystem="2.16.840.1.113883.6.96"
      displayName="Myocardial infarction"/>
    <entryRelationship typeCode="CAUS">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.47"/>
      <!-- ***** Family history death observation template ***** -->
    >
      <id root="6898fae0-5c8a-11db-b0de-0800200c9a66"/>
      <code code="ASSERTION"
        codeSystem="2.16.840.1.113883.5.4"/>
      <statusCode code="completed"/>
      <value xsi:type="CD" code="419099009"
        codeSystem="2.16.840.1.113883.6.96"
        displayName="Dead"/>
      </observation>
    </entryRelationship>
    <entryRelationship typeCode="SUBJ" inversionInd="true">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.31"/>
      <!-- ***** Age observation template ***** -->
      <code code="397659008"
        codeSystem="2.16.840.1.113883.6.96"
        displayName="Age"/>
      <statusCode code="completed"/>
      <value xsi:type="PQ" value="57" unit="a"/>
      </observation>
    </entryRelationship>
    </observation>
  </component>
  <component>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.46"/>
    <!-- ***** Family history observation template ***** -->
    <id root="5bfe3ec0-5c8b-11db-b0de-0800200c9a66"/>
    <code code="7087005" displayName="Intermittent"
      codeSystemName="SNOMED CT"
      codeSystem="2.16.840.1.113883.6.96"/>
    <statusCode code="completed"/>
    <effectiveTime value="1950"/>
    <value xsi:type="CD" code="46635009"
      codeSystem="2.16.840.1.113883.6.96"
      displayName="Diabetes mellitus type 1"/>

```

```

<entryRelationship typeCode="SUBJ" inversionInd="true">
    <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.31"/>
        <!-- ***** Age observation template ***** -->
        <code code="397659008" codeSystem="2.16.840.1.113883.6.96" displayName="Age"/>
        <statusCode code="completed"/>
        <value xsi:type="PQ" value="40" unit="a"/>
    </observation>
</entryRelationship>
</observation>
</component>
</organizer>
</entry>
</section>

```

6.26 Family History Organizer

[organizer: templateId 2.16.840.1.113883.10.20.22.4.45 (open)]

Table 169: Family History Organizer Contexts

Used By:	Contains Entries:
Family History Section	Family History Observation

The Family History Organizer associates a set of observations with a family member. For example, the Family History Organizer can group a set of observations about the patient's father.

Table 170: Family History Organizer Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Family History Organizer	organizer[templateId/@root = '2.16.840.1.113883.10.20.22.4.45']					
	@classCode	1..1	SHALL		8600	2.16.840.1.113883.5.6 (HL7ActClass) = CLUSTER
	@moodCode	1..1	SHALL		8601	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET< II>	8604	
	@root	1..1	SHALL		10497	2.16.840.1.113883.10.20.2 2.4.45
	statusCode	1..1	SHALL		8602	2.16.840.1.113883.5.14 (ActStatus) = completed
familyMember Demographics	subject	1..1	SHALL		8609	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	relatedSubject	1..1	SHALL		15244	
	@classCode	1..1	SHALL		15245	2.16.840.1.113883.5.41 (EntityClass) = PRS
	code	1..1	SHALL		15246	
	@code	0..1	SHALL		15247	2.16.840.1.113883.1.11.19 579 (FamilyHistoryRelatedSubje ctCode)
	subject	0..1	SHOULD		15248	
	administrative GenderCode	1..1	SHALL		15974	
	@code	1..1	SHALL		15975	2.16.840.1.113883.1.11.1 (Administrative Gender (HL7 V3))
	birthTime	0..1	SHOULD		15976	
	relatedSubject /@classCode	1..1	SHALL		8610	2.16.840.1.113883.5.41 (EntityClass) = PRS
familyMember Relationship ToPatient	code	1..1	SHALL	CE	8611	
familyMember Person Information	subject	0..1	SHOULD		8613	
familyMember Administrative Gender	administrative GenderCode	1..1	SHALL	CE	8614	2.16.840.1.113883.1.11.1 (Administrative Gender (HL7 V3))
familyMember DateOfBirth	birthTime	0..1	SHOULD	TS	8615	
familyMember MedicalHistory	component	1..*	SHALL		8607	
	observation	1..1	SHOULD		16888	

1. **SHALL** contain exactly one [1..1] **@classCode="CLUSTER"** Cluster
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8600).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem:
ActMood 2.16.840.1.113883.5.1001) (CONF:8601).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8604) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.45" (CONF:10497).
4. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed
(CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8602).
5. **SHALL** contain exactly one [1..1] **subject** (CONF:8609).

- a. This subject **SHALL** contain exactly one [1..1] **relatedSubject** (CONF:15244).
 - i. This relatedSubject **SHALL** contain exactly one [1..1] **@classCode="PRS"** Person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) (CONF:15245).
 - ii. This relatedSubject **SHALL** contain exactly one [1..1] **code** (CONF:15246).
 - 1. This code **SHALL** contain zero or one [0..1] **@code**, which **SHOULD** be selected from ValueSet FamilyHistoryRelatedSubjectCode 2.16.840.1.113883.1.11.19579 **DYNAMIC** (CONF:15247).
 - iii. This relatedSubject **SHOULD** contain zero or one [0..1] **subject** (CONF:15248).
 - 1. The subject, if present, **SHALL** contain exactly one [1..1] **administrativeGenderCode** (CONF:15974).
 - a. This administrativeGenderCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Administrative Gender (HL7 V3) 2.16.840.1.113883.1.11.1 (CONF:15975).
 - 2. The subject, if present, **SHOULD** contain zero or one [0..1] **birthTime** (CONF:15976).
 - 3. The subject **SHOULD** contain zero or more [0..*] sdtc:id. The prefix sdtc: **SHALL** be bound to the namespace “urn:hl7-org:sdtc”. The use of the namespace provides a necessary extension to CDA R2 for the use of the id element (CONF:15249).
 - 4. The subject **MAY** contain zero or one sdtc:deceasedInd. The prefix sdtc: **SHALL** be bound to the namespace “urn:hl7-org:sdtc”. The use of the namespace provides a necessary extension to CDA R2 for the use of the deceasedInd element (CONF:15981).
 - 5. The subject **MAY** contain zero or one sdtc:deceasedTime. The prefix sdtc: **SHALL** be bound to the namespace “urn:hl7-org:sdtc”. The use of the namespace provides a necessary extension to CDA R2 for the use of the deceasedTime element (CONF:15982).
 - 6. The age of a relative at the time of a family history observation **SHOULD** be inferred by comparing RelatedSubject/subject/birthTime with Observation/effectiveTime (CONF:15983).
 - 6. **SHALL** contain at least one [1..*] **component** (CONF:8607).
 - a. Such components **SHALL** contain exactly one [1..1] **Family History Observation** (templateId:2.16.840.1.113883.10.20.22.4.46) (CONF:16888).

Table 171: Family History Related Subject Value Set (excerpt)

Value Set: FamilyHistoryRelatedSubjectCode 2.16.840.1.113883.1.11.19579 DYNAMIC Code System: RoleCode 2.16.840.1.113883.5.111 (any subtype of RoleCode: FAMMEMB) See HL7 Vocabulary Domains included in the CDA R2 Normative Web Edition http://www.hl7.org/documentcenter/private/standards/cda/r2/cda_r2_normativewebedition2010.zip		
Code	Code System	Print Name
CHILD	RoleCode	Child
CHLDADOPT	RoleCode	Adopted Child
DAUADOPT	RoleCode	Adopted Daughter
SONADOPT	RoleCode	Adopted Son
CHLDINLAW	RoleCode	Child in-law
...		

Figure 180: Family history organizer example

```

<entry typeCode="DRI">
  <organizer moodCode="EVN" classCode="CLUSTER">
    <templateId root="2.16.840.1.113883.10.20.22.4.45"/>
    <!-- Family history organizer template -->
    <statusCode code="completed"/>
    <subject>
      <relatedSubject classCode="PRS">
        <code code="FTH" displayName="Father"
          codeSystemName="HL7RoleCode"
          codeSystem="2.16.840.1.113883.5.111">
          <translation code="9947008"
            displayName="Biological father"
            codeSystemName="SNOMED CT"
            codeSystem="2.16.840.1.113883.6.96"/>
        </code>
        <subject>
          <administrativeGenderCode
            code="M" codeSystem="2.16.840.1.113883.5.1"
            codeSystemName="HL7AdministrativeGender"
            displayName="Male"/>
          <birthTime value="1912"/>
        </subject>
      </relatedSubject>
    </subject>
    <component>
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.46"/>
        <!-- Family history observation template -->
        ...
      </observation>
    </component>
  </organizer>
</entry>

```

6.27 Functional Status Problem Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.68 (open)]

Table 172: Functional Status Problem Observation Contexts

Used By:	Contains Entries:
Functional Status Section (optional)	Assessment Scale Observation Caregiver Characteristics Non-Medicinal Supply Activity

A functional status problem observation is a clinical statement that represents a patient's functional performance and ability.

Table 173: Functional Status Problem Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.68']						
	@classCode	1..1	SHALL		14282	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14283	2.16.840.1.113883.5.1001 (ActMood) = EVN
	@negationInd	0..1	MAY		14307	
	templateId	1..1	SHALL		14312	
	@root	1..1	SHALL		14313	2.16.840.1.113883.10.20.22.4.68
	id	1..*	SHALL		14284	
	code	1..1	SHALL		14314	
	@code	0..1	SHOULD		14315	2.16.840.1.113883.6.96 (SNOMED-CT) = 248536006
	text	0..1	SHOULD		14304	
	reference	1..1	SHOULD		15552	
	@value	0..1	SHOULD		15553	
	statusCode	1..1	SHALL		14286	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	0..1	SHOULD	TS or IVL<T S>	14287	
	value	1..1	SHALL	CD	14291	2.16.840.1.113883.3.88.12.3221.7 .4 (Problem)
	@nullFlavor	0..1	MAY		14292	
	methodCode	0..1	MAY		14316	
	entryRelationship	0..*	MAY		14294	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	@typeCode	1..1	SHALL		14584	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		14317	
	entryRelationship	0..*	MAY		14298	
	@typeCode	1..1	SHALL		14586	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	observation	1..1	SHALL		14318	
	entryRelationship	0..*	MAY		14463	
	@typeCode	1..1	SHALL		14587	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	observation	1..1	SHALL		14464	

1. Conforms to [Problem Observation](#) template (2.16.840.1.113883.10.20.22.4.4).
 2. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14282).
 3. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:14283).
- Use negationInd="true" to indicate that the problem was not observed.
4. **MAY** contain zero or one [0..1] **@negationInd** (CONF:14307).
 5. **SHALL** contain exactly one [1..1] **templateId** (CONF:14312) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.68"** (CONF:14313).
 6. **SHALL** contain at least one [1..*] **id** (CONF:14284).
 7. **SHALL** contain exactly one [1..1] **code** (CONF:14314).
 - a. This code **SHOULD** contain zero or one [0..1] **@code="248536006"** finding of functional performance and activity (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14315).
 8. **SHOULD** contain zero or one [0..1] **text** (CONF:14304).
 - a. The text, if present, **SHOULD** contain exactly one [1..1] **reference** (CONF:15552).
 - i. This reference **SHOULD** contain zero or one [0..1] **@value** (CONF:15553).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15554).
 9. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:14286).
 10. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:14287).
 - a. The onset date **SHALL** be recorded in the low element of the effectiveTime element when known (CONF:14288).

- b. The resolution date **SHALL** be recorded in the high element of the effectiveTime element when known (CONF:14289).
 - c. If the problem is known to be resolved, but the date of resolution is not known, then the high element **SHALL** be present, and the nullFlavor attribute **SHALL** be set to 'UNK'. Therefore, the existence of an high element within a problem does indicate that the problem has been resolved (CONF:14290).
11. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the @code **SHOULD** be selected from ValueSet [Problem](#)
[2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC](#) (CONF:14291).
- a. This value **MAY** contain zero or one [0..1] @nullFlavor (CONF:14292).
 - i. If the diagnosis is unknown or the SNOMED code is unknown, @nullFlavor **SHOULD** be "UNK". If the code is something other than SNOMED, @nullFlavor **SHOULD** be "OTH" and the other code **SHOULD** be placed in the translation element (CONF:14293).
12. **MAY** contain zero or one [0..1] **methodCode** (CONF:14316).
13. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:14294) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" refers to (CodeSystem: HL7ActRelationshipType
[2.16.840.1.113883.5.1002](#)) (CONF:14584).
 - b. **SHALL** contain exactly one [1..1] [Non-Medicinal Supply Activity](#) (templateId:2.16.840.1.113883.10.20.22.4.50) (CONF:14317).
14. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:14298) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" refers to (CodeSystem: HL7ActRelationshipType
[2.16.840.1.113883.5.1002](#)) (CONF:14586).
 - b. **SHALL** contain exactly one [1..1] [Caregiver Characteristics](#) (templateId:2.16.840.1.113883.10.20.22.4.72) (CONF:14318).
15. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:14463) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="COMP" has component (CodeSystem: HL7ActRelationshipType
[2.16.840.1.113883.5.1002](#)) (CONF:14587).
 - b. **SHALL** contain exactly one [1..1] [Assessment Scale Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.69) (CONF:14464).

Figure 181: Functional status problem observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.68"/>
  <!-- Functional Status Problem observation template -->
  <id root="08edb7c0-2111-43f2-a784-9a5fdfaa67f0"/>
  <code code="404684003"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Finding of Functional Performance and activity"/>
  <text>
    ...
  </text>
  <statusCode code="completed"/>
  <effectiveTime>
    <low value="200702"/>
  </effectiveTime>
  <value xsi:type="CD" code=" 162891007"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="dyspnea"/>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.72"/>
      <!--Caregiver Characteristics -->
      ...
    </observation>
  </entryRelationship>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.69"/>
      <!-- Assessment Scale Observation -->
      ...
    </observation>
  </entryRelationship>
</observation>
```

6.28 Functional Status Result Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.67 (open)]

Table 174: Functional Status Result Observation Contexts

Used By:	Contains Entries:
Functional Status Result Organizer (required) Functional Status Section (optional)	Assessment Scale Observation Caregiver Characteristics Non-Medicinal Supply Activity

This clinical statement represents details of an evaluation or assessment of a patient's functional status. The evaluation may include assessment of a patient's language, vision, hearing, activities of daily living, behavior, general function, mobility, and self-care status. The statement, if present, will include supporting caregivers, non-medical devices, and the time period for which the evaluation and assessment were performed.

Table 175: Functional Status Result Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.67']					
	@classCode	1..1	SHALL		13905	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		13906	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		13889	
	@root	1..1	SHALL		13890	2.16.840.1.113883.10.20.22. 4.67
	id	1..*	SHALL		13907	
	code	1..1	SHALL	CE	13908	2.16.840.1.113883.6.1 (LOINC)
	text	0..1	SHOULD		13926	
	reference	0..1	SHOULD		13927	
	statusCode	1..1	SHALL		13929	Completed
	effectiveTime	1..1	SHALL		13930	
	value	1..1	SHALL		13932	
	interpretationCode	0..*	SHOULD		13933	
	methodCode	0..1	MAY		13934	
	targetSiteCode	0..1	MAY		13935	
	author	0..1	MAY		13936	
	entryRelationship	0..1	MAY		13892	
	@typeCode	1..1	SHALL		14596	REFR
	supply	1..1	SHALL		14218	
	entryRelationship	0..1	MAY		13895	
	@typeCode	1..1	SHALL		14597	REFR
	observation	1..1	SHALL		13897	
	entryRelationship	0..1	MAY		14465	
	@typeCode	1..1	SHALL		14598	COMP
	observation	1..1	SHALL		14466	
	referenceRange	0..*	SHOULD		13937	
	observationRange	1..1	SHALL		13938	

1. Conforms to [Result Observation](#) template (2.16.840.1.113883.10.20.22.4.2).
2. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:13905).
3. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:13906).
4. **SHALL** contain exactly one [1..1] templateId (CONF:13889) such that it

- a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.4.67"` (CONF:13890).
 - 5. **SHALL** contain at least one [1..*] **id** (CONF:13907).
 - 6. **SHALL** contain exactly one [1..1] **code** with `@xsi:type="CE"`, where the `@code` **SHOULD** be selected from CodeSystem LOINC (2.16.840.1.113883.6.1) (CONF:13908).
 - 7. **SHOULD** contain zero or one [0..1] **text** (CONF:13926).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:13927).
 - i. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:13928).
 - 8. **SHALL** contain exactly one [1..1] **statusCode**=`"Completed"` (CONF:13929).
- Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards)
- 9. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:13930).
 - 10. **SHALL** contain exactly one [1..1] **value** (CONF:13932).
 - a. If `xsi:type="CD"`, **SHOULD** contain a code from SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96) (CONF:14234).
 - 11. **SHOULD** contain zero or more [0..*] **interpretationCode** (CONF:13933).
 - 12. **MAY** contain zero or one [0..1] **methodCode** (CONF:13934).
 - 13. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:13935).
 - 14. **MAY** contain zero or one [0..1] **author** (CONF:13936).
 - 15. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:13892) such that it
 - a. **SHALL** contain exactly one [1..1] `@typeCode="REFR"` refers to (CONF:14596).
 - b. **SHALL** contain exactly one [1..1] [Non-Medicinal Supply Activity](#) (`templateId:2.16.840.1.113883.10.20.22.4.50`) (CONF:14218).
 - 16. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:13895) such that it
 - a. **SHALL** contain exactly one [1..1] `@typeCode="REFR"` refers to (CONF:14597).
 - b. **SHALL** contain exactly one [1..1] [Caregiver Characteristics](#) (`templateId:2.16.840.1.113883.10.20.22.4.72`) (CONF:13897).
 - 17. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:14465) such that it
 - a. **SHALL** contain exactly one [1..1] `@typeCode="COMP"` has component (CONF:14598).
 - b. **SHALL** contain exactly one [1..1] [Assessment Scale Observation](#) (`templateId:2.16.840.1.113883.10.20.22.4.69`) (CONF:14466).
 - 18. **SHOULD** contain zero or more [0..*] **referenceRange** (CONF:13937).
 - a. The referenceRange, if present, **SHALL** contain exactly one [1..1] **observationRange** (CONF:13938).

- i. This observationRange **SHALL NOT** contain [0..0] code (CONF:13939).

Figure 182: Functional status result observation example

```

<observation classCode="OBS" moodCode="EVN">
  <!--Cognitive Status Result Oservation template -->
  <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
  <id root="c6b5a04b-2bf4-49d1-8336-636a3813df0a"/>
  <code code="54744-8"
    displayName="Dressing upper body in last 7D(MDSv3)"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"/>
  <statusCode code="completed"/>
  <effectiveTime value="200903111230"/>
  <value xsi:type="CD"/>
  <code code="371153006" displayName=" Independently able"
    codeSystem="2.16.840.1.113883.5.83"
    codeSystemName="SNOMED CT"/>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.69"/>
      <!-- Assessment Scale Observation -->
      ...
      </observation>
    </entryRelationship>
    <entryRelationship typeCode="SUBJ">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.72"/>
        <!--Caregiver Support and Ability -->
        ...
      </observation>
    </entryRelationship>
  </observation>

```

6.29 Functional Status Result Organizer

[organizer: templateId 2.16.840.1.113883.10.20.22.4.66 (open)]

Table 176: Functional Status Result Organizer Contexts

Used By:	Contains Entries:
Functional Status Section (optional)	Functional Status Result Observation

This clinical statement identifies a set of functional status result observations. It contains information applicable to all of the contained functional status result observations. A functional status organizer may group self-care observations related to a patient's ability to feed, bathe, and dress.

An appropriate nullFlavor can be used when the organizer/code or organizer/id is unknown.

Table 177: Functional Status Result Organizer Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	organizer[templateId/@root = '2.16.840.1.113883.10.20.22.4.66']					
	@classCode	1..1	SHALL		14355	2.16.840.1.113883.5.6 (HL7ActClass) = CLUSTER
	@mood Code	1..1	SHALL		14357	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	14361	
	@root	1..1	SHALL		14362	2.16.840.1.113883.10.20.22.4.66
	id	1..*	SHALL		14363	
	code	1..1	SHALL		14364	
	@code	0..1	SHOULD		14747	
	statusCode	1..1	SHALL		14358	2.16.840.1.113883.5.14 (ActStatus) = completed
	component	1..*	SHALL		14359	
	observation	1..1	SHALL		14368	

1. Conforms to [Result Organizer](#) template (2.16.840.1.113883.10.20.22.4.1).
2. **SHALL** contain exactly one [1..1] @classCode, which **SHALL** be selected from CodeSystem HL7ActClass (2.16.840.1.113883.5.6) ="CLUSTER" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14355).
3. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14357).
4. **SHALL** contain exactly one [1..1] templateId (CONF:14361) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.66" (CONF:14362).
5. **SHALL** contain at least one [1..*] id (CONF:14363).
6. **SHALL** contain exactly one [1..1] code (CONF:14364).
 - a. This code **SHOULD** contain zero or one [0..1] @code (CONF:14747).
 - i. **SHOULD** be selected from ICF (codeSystem 2.16.840.1.113883.6.254) or SNOMED CT (codeSystem 2.16.840.1.113883.6.96) (CONF:14748).
7. **SHALL** contain exactly one [1..1] statusCode="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14358).
8. **SHALL** contain at least one [1..*] component (CONF:14359) such that it
 - a. **SHALL** contain exactly one [1..1] [Functional Status Result Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.67) (CONF:14368).

Figure 183: Functional status result organizer example

```
<organizer classCode="CLUSTER" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.75"/>
  <!-- Cognitive Status Result Organizer template -->
  <id root="9295dba4-df05-46bb-b94e-f2c4e4b156f8"/>
  <code code="d5" displayName="Self-Care"
    codeSystem="2.16.840.1.113883.6.254"
    codeSystemName="ICF"/>
  <statusCode code="completed"/>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <!-- Functional Status Result observation(such as toileting) -->
      <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
      ...
    </observation>
  </component>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <!-- Functional Status Result observation(such as eating) -->
      <templateId root="2.16.840.1.113883.10.20.22.4.74"/>
      ...
    </observation>
  </component>
</organizer>
```

6.30 Health Status Observation

[Observation: templateId 2.16.840.1.113883.10.20.22.4.5 (open)]

Table 178: Health Status Observation Contexts

Used By:	Contains Entries:
Problem Observation	

The Health Status Observation records information about the current health status of the patient.

Table 179: Health Status Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.5']					
	@classCode	1..1	SHALL		9057	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		9072	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16756	
	@root	1..1	SHALL		16757	2.16.840.1.113883.10.20.22.4.5
	code	1..1	SHALL	CE	9073	2.16.840.1.113883.6.1 (LOINC) = 11323-3
	text	0..1	SHOULD		9270	
	reference	0..1	SHOULD		15529	
	@value	0..1	SHOULD		15530	
	statusCode	1..1	SHALL		9074	2.16.840.1.113883.5.14 (ActStatus) = completed
	value	1..1	SHALL	CD	9075	2.16.840.1.113883.1.11.20.12 (HealthStatus)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9057).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9072).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:16756) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.5"** (CONF:16757).
4. **SHALL** contain exactly one [1..1] **code="11323-3"** Health status with **@xsi:type="CE"** (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**) (CONF:9073).
5. **SHOULD** contain zero or one [0..1] **text** (CONF:9270).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15529).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15530).
 1. **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15531).
 6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:9074).
 7. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"**, where the **@code** **SHALL** be selected from ValueSet HealthStatus 2.16.840.1.113883.1.11.20.12 **DYNAMIC** (CONF:9075).

Table 180: HealthStatus Value Set

Value Set: HealthStatus 2.16.840.1.113883.1.11.20.12 DYNAMIC		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Description: Represents the general health status of the patient.		
Code	Code System	Print Name
81323004	SNOMED CT	Alive and well
313386006	SNOMED CT	In remission
162467007	SNOMED CT	Symptom free
161901003	SNOMED CT	Chronically ill
271593001	SNOMED CT	Severely ill
21134002	SNOMED CT	Disabled
161045001	SNOMED CT	Severely disabled

Figure 184: Health status observation example

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.5"/>
  <!-- Health status observation template -->
  <code code="11323-3"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="Health status"/>
  <statusCode code="completed"/>
  <value xsi:type="CE" code="313386006"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="In Remission"/>
</observation>

```

6.31 Highest Pressure Ulcer Stage

[observation: templateId 2.16.840.1.113883.10.20.22.4.77 (open)]

Table 181: Highest Pressure Ulcer Stage Contexts

Used By:	Contains Entries:
Functional Status Section (optional)	
Physical Exam Section (optional)	

This observation contains a description of the wound tissue of the most severe or highest staged pressure ulcer observed on a patient.

Table 182: Highest Pressure Ulcer Stage Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.77']					
	@classCode	1..1	SHALL		14726	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14727	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		14728	
	@root	1..1	SHALL		14729	2.16.840.1.113883.10.20.22.4.77
	id	1..*	SHALL		14730	
	code	1..1	SHALL		14731	
	@code	1..1	SHALL		14732	2.16.840.1.113883.6.96 (SNOMED-CT) = 420905001
	value	1..1	SHALL		14733	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14726).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14727).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:14728) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.77"** (CONF:14729).
4. **SHALL** contain at least one [1..*] **id** (CONF:14730).
5. **SHALL** contain exactly one [1..1] **code** (CONF:14731).
 - a. This code **SHALL** contain exactly one [1..1] **@code="420905001"** Highest Pressure Ulcer Stage (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14732).
6. **SHALL** contain exactly one [1..1] **value** (CONF:14733).

```

<entry typeCode="DRIV">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.77"/>
    <id root="08edb7c0-2111-43f2-a784-9a5fdfaa67f0"/>
    <code code="420905001" codeSystem="2.16.840.1.113883.6.96"
      displayName=" Highest Pressure Ulcer Stage"/>
    <statusCode code="completed"/>
    <value xsi:type="CD" code="421306004"
      codeSystem="2.16.840.1.113883.6.96"
      displayName="necrotic eschar"/>
  </observation>
</entry>

```

6.32 Hospital Admission Diagnosis

[act: templateId 2.16.840.1.113883.10.20.22.4.34 (open)]

Table 183: Hospital Admission Diagnosis Contexts

Used By:	Contains Entries:
Hospital Admission Diagnosis Section	Problem Observation

The Hospital Admission Diagnosis entry describes the relevant problems or diagnoses at the time of admission.

Table 184: Hospital Admission Diagnosis Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
act[templateId/@root = '2.16.840.1.113883.10.20.22.4.34']						
	@classCode	1..1	SHALL		7671	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		7672	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16747	
	@root	1..1	SHALL		16748	2.16.840.1.113883.10.20.22.4.34
	code	1..1	SHALL	CE	7673	2.16.840.1.113883.6.1 (LOINC) = 46241-6
	entryRelationship	1..*	SHALL		7674	
	@typeCode	1..1	SHALL		7675	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	observation	1..1	SHALL		15535	

1. **SHALL** contain exactly one [1..1] @classCode="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7671).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7672).
3. **SHALL** contain exactly one [1..1] templateId (CONF:16747) such that it

- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.34" (CONF:16748).
- 4. **SHALL** contain exactly one [1..1] **code**="46241-6" Admission diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:7673).
- 5. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:7674) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="SUBJ" Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7675).
 - b. **SHALL** contain exactly one [1..1] **Problem Observation** (templateId:2.16.840.1.113883.10.20.22.4.4) (CONF:15535).

Figure 185: Hospital admission diagnosis example

```
<act classCode="ACT" moodCode="EVN">
  <!-- Admission Diagnosis template -->
  <templateId root="2.16.840.1.113883.10.20.22.4.34"/>
  <id root="5a784260-6856-4f38-9638-80c751aff2fb"/>
  <code code="46241-6"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="Hospital Admission Diagnosis"/>
  <statusCode code="active"/>
  <effectiveTime>
    <low value="20090303"/>
  </effectiveTime>
  <entryRelationship typeCode="SUBJ" inversionInd="false">
    <observation classCode="OBS" moodCode="EVN" negationInd="false">
      <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
      <!-- Problem Observation -->
      ...
    </observation>
  </entryRelationship>
</act>
```

6.33 Hospital Discharge Diagnosis

[act: templateId 2.16.840.1.113883.10.20.22.4.33 (open)]

Table 185: Hospital Discharge Diagnosis Contexts

Used By:	Contains Entries:
<u>Hospital Discharge Diagnosis Section</u>	<u>Problem Observation</u>

The Hospital Discharge Diagnosis act wraps relevant problems or diagnoses at the time of discharge that occurred during the hospitalization or that need to be followed after hospitalization. This entry requires at least one Problem Observation entry.

Table 186: Hospital Discharge Diagnosis Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.33']					
	@classCode	1..1	SHALL		7663	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		7664	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16764	
	@root	1..1	SHALL		16765	2.16.840.1.113883.10.20.22.4.33
	code	1..1	SHALL	CE	7665	2.16.840.1.113883.6.1 (LOINC) = 11535-2
	entryRelationship	1..*	SHALL		7666	
	@typeCode	1..1	SHALL		7667	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	observation	1..1	SHALL		15536	

1. **SHALL** contain exactly one [1..1] @classCode="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7663).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7664).
3. **SHALL** contain exactly one [1..1] templateId (CONF:16764) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.33" (CONF:16765).
4. **SHALL** contain exactly one [1..1] code="11535-2" Hospital discharge diagnosis (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:7665).
5. **SHALL** contain at least one [1..*] entryRelationship (CONF:7666) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="SUBJ" Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7667).
 - b. **SHALL** contain exactly one [1..1] [Problem Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.4) (CONF:15536).

Figure 186: Hospital discharge diagnosis act example

```
<act classCode="ACT" moodCode="EVN">
  <!--Hospital discharge diagnosis act -->
  <templateId root="2.16.840.1.113883.10.20.22.4.33"/>
  <id root="5a784260-6856-4f38-9638-80c751aff2fb"/>
  <code code="11535-2"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="HOSPITAL DISCHARGE DIAGNOSIS"/>
  <statusCode code="active"/>
  <effectiveTime>
    <low value="20903003"/>
  </effectiveTime>
  <entryRelationship typeCode="SUBJ" inversionInd="false">
    <observation classCode="OBS" moodCode="EVN" negationInd="false">
      <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
      <!-- Problem Observation -->
      ...
    </observation>
  </entryRelationship>
</act>
```

6.34 Immunization Activity

[substanceAdministration: templateId
2.16.840.1.113883.10.20.22.4.52 (open)]

Table 187: Immunization Activity Contexts

Used By:	Contains Entries:
Immunizations Section (entries optional) (optional) Immunizations Section (entries required) (required)	Drug Vehicle Immunization Medication Information Immunization Refusal Reason Indication Instructions Medication Dispense Medication Supply Order Precondition for Substance Administration Reaction Observation

An Immunization Activity describes immunization substance administrations that have actually occurred or are intended to occur. Immunization Activities in "INT" mood are reflections of immunizations a clinician intends a patient to receive. Immunization Activities in "EVN" mood reflect immunizations actually received.

An Immunization Activity is very similar to a Medication Activity with some key differentiators. The drug code system is constrained to CVX codes.

Administration timing is less complex. Patient refusal reasons should be captured. All vaccines administered should be fully documented in the patient's

permanent medical record. Healthcare providers who administer vaccines covered by the National Childhood Vaccine Injury Act are required to ensure that the permanent medical record of the recipient indicates:

- 1) Date of administration
- 2) Vaccine manufacturer
- 3) Vaccine lot number
- 4) Name and title of the person who administered the vaccine and the address of the clinic or facility where the permanent record will reside
- 5) Vaccine information statement (VIS)
 - a. date printed on the VIS
 - b. date VIS given to patient or parent/guardian.

This information should be included in an Immunization Activity when available.

³³

Table 188: Immunization Activity Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Immunization Activity	substanceAdministration[templateId/@root = '2.16.840.1.113883.10.20.22.4.52']					
	@classCode	1..1	SHALL		8826	2.16.840.1.113883.5.6 (HL7ActClass) = SBADM
	@moodCode	1..1	SHALL		8827	2.16.840.1.113883.11.20.9.18 (MoodCodeEvnInt)
refusal	@negationInd	1..1	SHALL		8985	
	templateId	1..1	SHALL	SET< II>	8828	
	@root	1..1	SHALL		10498	2.16.840.1.113883.10.20.2 2.4.52
	id	1..*	SHALL		8829	
	code	0..1	MAY	CE	8830	
	text	0..1	SHOULD		8831	
	reference	0..1	SHOULD		15543	
	@value	0..1	SHOULD		15544	
	statusCode	1..1	SHALL		8833	
administered Date	effectiveTime	1..1	SHALL	TS or IVL< TS>	8834	
medication SeriesNumber	repeatNumber	0..1	MAY	IVL<I NT>	8838	
	routeCode	0..1	MAY		8839	2.16.840.1.113883.3.88.12.3221.8.7 (Medication Route FDA Value Set)
	approachSiteCode	0..1	MAY	SET<	8840	2.16.840.1.113883.3.88.12.3221.8.9 (Body Site Value)

³³ Vaccine Administration Guidelines.

http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/applications/D/vacc_admin.pdf

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
				CD>		Set)
	doseQuantity	0..1	SHOULD	IVL< PQ>	8841	
	@unit	0..1	SHOULD		8842	2.16.840.1.113883.1.11.12 839 (UCUM Units of Measure (case sensitive)) = 1
	administrationUnitCode	0..1	MAY		8846	2.16.840.1.113883.3.88.12. 3221.8.11 (Medication Product Form)
medication Information	consumable	1..1	SHALL		8847	
	manufacturedProduct	1..1	SHALL		15546	
performer	performer	0..1	SHOULD		8849	
	participant	0..*	MAY		8850	
	@typeCode	1..1	SHALL		8851	2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
	participantRole	1..1	SHALL		15547	
	entryRelationship	0..*	MAY		8853	
	@typeCode	1..1	SHALL		8854	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		15537	
	entryRelationship	0..1	MAY		8856	
	@typeCode	1..1	SHALL		8857	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		8858	true
	act	1..1	SHALL		15538	
	entryRelationship	0..1	MAY		8860	
	@typeCode	1..1	SHALL		8861	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		15539	
	entryRelationship	0..1	MAY		8863	
	@typeCode	1..1	SHALL		8864	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		15540	
reaction	entryRelationship	0..1	MAY		8866	
	@typeCode	1..1	SHALL		8867	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = CAUS

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation	1..1	SHALL		15541	
refusal Reason	entryRelationship	0..1	MAY		8988	
	@typeCode	1..1	SHALL		8989	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		15542	
	precondition	0..*	MAY		8869	
	@typeCode	1..1	SHALL		8870	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = PRCN
	criterion	1..1	SHALL		15548	

1. **SHALL** contain exactly one [1..1] **@classCode="SBADM"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:8826).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** (CONF:8827).

Use negationInd="true" to indicate that the immunization was not given.

3. **SHALL** contain exactly one [1..1] **@negationInd** (CONF:8985).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:8828) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.52"** (CONF:10498).
5. **SHALL** contain at least one [1..*] **id** (CONF:8829).
6. **MAY** contain zero or one [0..1] **code** with @xsi:type="CE" (CONF:8830).
7. **SHOULD** contain zero or one [0..1] **text** (CONF:8831).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15543).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15544).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1 (CONF:15545)).
 8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:8833).
 9. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:8834).

In "INT" (intent) mood, the repeatNumber defines the number of allowed administrations. For example, a repeatNumber of "3" means that the substance can be administered up to 3 times. In "EVN" (event) mood, the repeatNumber is the number of occurrences. For example, a repeatNumber of "3" in a dispense act means that the current dispensation is the 3rd. A repeatNumber of "3" in a substance administration event means that the current administration is the 3rd in a series.

10. **MAY** contain zero or one [0..1] **repeatNumber** (CONF:8838).
11. **MAY** contain zero or one [0..1] **routeCode**, which **SHALL** be selected from ValueSet Medication Route FDA Value Set
2.16.840.1.113883.3.88.12.3221.8.7 **DYNAMIC** (CONF:8839).
12. **MAY** contain zero or one [0..1] **approachSiteCode**, where the @code **SHALL** be selected from ValueSet Body Site Value Set
2.16.840.1.113883.3.88.12.3221.8.9 **DYNAMIC** (CONF:8840).
13. **SHOULD** contain zero or one [0..1] **doseQuantity** (CONF:8841).
 - a. The doseQuantity, if present, **SHOULD** contain zero or one [0..1] @unit="1", which **SHALL** be selected from ValueSet UCUM Units of Measure (case sensitive) 2.16.840.1.113883.1.11.12839 **DYNAMIC** (CONF:8842).
14. **MAY** contain zero or one [0..1] **administrationUnitCode**, which **SHALL** be selected from ValueSet Medication Product Form
2.16.840.1.113883.3.88.12.3221.8.11 **DYNAMIC** (CONF:8846).
15. **SHALL** contain exactly one [1..1] **consumable** (CONF:8847).
 - a. This consumable **SHALL** contain exactly one [1..1] [Immunization Medication Information](#) (templateId:2.16.840.1.113883.10.20.22.4.54) (CONF:15546).
16. **SHOULD** contain zero or one [0..1] **performer** (CONF:8849).
17. **MAY** contain zero or more [0..*] **participant** (CONF:8850).
 - a. The participant, if present, **SHALL** contain exactly one [1..1] @typeCode="CSM" (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90 **STATIC**) (CONF:8851).
 - b. The participant, if present, **SHALL** contain exactly one [1..1] [Drug Vehicle](#) (templateId:2.16.840.1.113883.10.20.22.4.24) (CONF:15547).
18. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:8853) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="RSON" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8854).
 - b. **SHALL** contain exactly one [1..1] [Indication](#) (templateId:2.16.840.1.113883.10.20.22.4.19) (CONF:15537).
19. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8856) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="SUBJ" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8857).
 - b. **SHALL** contain exactly one [1..1] @inversionInd="true" True (CONF:8858).
 - c. **SHALL** contain exactly one [1..1] [Instructions](#) (templateId:2.16.840.1.113883.10.20.22.4.20) (CONF:15538).
20. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8860) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8861).

- b. **SHALL** contain exactly one [1..1] [Medication Supply Order](#) (templateId:2.16.840.1.113883.10.20.22.4.17) (CONF:15539).
21. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8863) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8864).
 - b. **SHALL** contain exactly one [1..1] [Medication Dispense](#) (templateId:2.16.840.1.113883.10.20.22.4.18) (CONF:15540).
22. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8866) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="CAUS" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8867).
 - b. **SHALL** contain exactly one [1..1] [Reaction Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.9) (CONF:15541).
23. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8988) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="RSON" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8989).
 - b. **SHALL** contain exactly one [1..1] [Immunization Refusal Reason](#) (templateId:2.16.840.1.113883.10.20.22.4.53) (CONF:15542).
24. **MAY** contain zero or more [0..*] **precondition** (CONF:8869) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="PRCN" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8870).
 - b. **SHALL** contain exactly one [1..1] [Precondition for Substance Administration](#) (templateId:2.16.840.1.113883.10.20.22.4.25) (CONF:15548).

Figure 187: Immunization activity example

```

<substanceAdministration classCode="SBADM" moodCode="EVN"
    negationInd="false">
    <templateId root="2.16.840.1.113883.10.20.22.4.52"/>
    <!-- **** Immunization activity template **** -->
    <id root="e6f1ba43-c0ed-4b9b-9f12-f435d8ad8f92"/>
    <text>
        <reference value="#immun3"/>
    </text>
    <statusCode code="completed"/>
    <effectiveTime xsi:type="IVL_TS" value="19981215"/>
    <routeCode code="IM" codeSystem="2.16.840.1.113883.5.112"
        codeSystemName="RouteOfAdministration"
        displayName="Intramuscular injection"/>
    <doseQuantity nullFlavor="UNK"/>
    <consumable>
        <manufacturedProduct>
            <templateId root="2.16.840.1.113883.10.20.22.4.54"/>
            <!-- **** Immunization Medication Information **** -->
            <manufacturedMaterial>
                ...
                </manufacturedMaterial>
            </manufacturedProduct>
        </consumable>
        <entryRelationship typeCode="SUBJ">
            <act classCode="ACT" moodCode="INT">
                <templateId root="2.16.840.1.113883.10.20.22.4.20"/>
                <!-- ** Instructions Template ** -->
                ...
            </act>
        </entryRelationship>
        <entryRelationship typeCode="RSON">
            <observation classCode="OBS" moodCode="EVN">
                <templateId root="2.16.840.1.113883.10.20.22.4.53"/>
                <!-- Immunization Refusal -->
                ...
            </observation>
        </entryRelationship>
    </substanceAdministration>

```

6.35 Immunization Medication Information

[manufacturedProduct: templateId
2.16.840.1.113883.10.20.22.4.54 (open)]

Table 189: Immunization Medication Information Contexts

Used By:	Contains Entries:
Immunization Activity Medication Dispense Medication Supply Order	

The Immunization Medication Information represents product information about the immunization substance. The vaccine manufacturer and vaccine lot number are typically recorded in the medical record and should be included if known.³⁴

Table 190: Immunization Medication Information Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Immunization Medication Information	manufacturedProduct[templateId/@root = '2.16.840.1.113883.10.20.22.4.54']					
	@classCode	1..1	SHALL		9002	2.16.840.1.113883.5.110 (RoleClass) = MANU
	templateId	1..1	SHALL	SET< II>	9004	
	@root	1..1	SHALL		10499	2.16.840.1.113883.10.20.22.4.54
	id	0..*	MAY		9005	
	manufactured Material	1..1	SHALL		9006	
codedProductName	code	1..1	SHALL		9007	2.16.840.1.113883.3.88.12.80.22 (Vaccine Administered Value Set)
freeText ProductName	originalText	0..1	SHOULD		9008	
	reference	0..1	SHOULD		15555	
	@value	0..1	SHOULD		15556	
	translation	0..*	MAY	SET< PQR >	9011	
lotNumber	lotNumberText	0..1	SHOULD		9014	
drug Manufacturer	manufacturer Organization	0..1	SHOULD		9012	

1. **SHALL** contain exactly one [1..1] **@classCode="MANU"** (CodeSystem: RoleClass 2.16.840.1.113883.5.110 **STATIC**) (CONF:9002).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:9004) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.54"** (CONF:10499).
3. **MAY** contain zero or more [0..*] **id** (CONF:9005).
4. **SHALL** contain exactly one [1..1] **manufacturedMaterial** (CONF:9006).
 - a. This manufacturedMaterial **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet Vaccine Administered

³⁴ Vaccine Administration Guidelines.

http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/applications/D/vacc_admin.pdf

Value Set 2.16.840.1.113883.3.88.12.80.22 **DYNAMIC**
(CONF:9007).

- i. This code **SHOULD** contain zero or one [0..1] **originalText** (CONF:9008).
 1. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15555).
 - a. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15556).
 - i. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15557).

Translations can be used to represent generic product name, packaged product code, etc.

- ii. This code **MAY** contain zero or more [0..*] **translation** (CONF:9011).
 - b. This manufacturedMaterial **SHOULD** contain zero or one [0..1] **lotNumberText** (CONF:9014).
5. **SHOULD** contain zero or one [0..1] **manufacturerOrganization** (CONF:9012).

Table 191: Vaccine Administered (Hepatitis B) Value Set (excerpt)

Value Set: Vaccine Administered Value Set 2.16.840.1.113883.3.88.12.80.22 DYNAMIC		
Code System(s): Vaccines administered (CVX) 2.16.840.1.113883.12.292 http://phinvads.cdc.gov/vads/ViewCodeSystem.action?id=2.16.840.1.113883.12.292		
Code	Code System	Print Name
82	CVX	adenovirus vaccine, NOS
54	CVX	adenovirus vaccine, type 4, live, oral
55	CVX	adenovirus vaccine, type 7, live, oral
24	CVX	anthrax vaccine
...		

Figure 188: Immunization medication information example

```

<manufacturedProduct>
  <templateId root="2.16.840.1.113883.10.20.22.4.54"/>
  <!-- **** Immunization Medication Information **** -->
  <manufacturedMaterial>
    <code code="103"
      codeSystem="2.16.840.1.113883.6.59"
      codeSystemName="CVX"
      displayName="Tetanus and diphtheria toxoids -
      preservative free" codeSystemName="CVX">
      <originalText>Tetanus and diphtheria toxoids - preservative
      free</originalText>
      <translation code="09"
        displayName="Tetanus and diphtheria toxoids - preservative
      free"
        codeSystemName="CVX"
        codeSystem="2.16.840.1.113883.6.59"/>
    </code>
  </manufacturedMaterial>
</manufacturedProduct>

```

6.36 Immunization Refusal Reason

[observation: templateId 2.16.840.1.113883.10.20.22.4.53 (open)]

Table 192: Immunization Refusal Reason Contexts

Used By:	Contains Entries:
Immunization Activity	

The Immunization Refusal Reason Observation documents the rationale for the patient declining an immunization.

Table 193: Immunization Refusal Reason Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.53']						
	@classCode	1..1	SHALL		8991	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		8992	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	8993	
	@root	1..1	SHALL		10500	2.16.840.1.113883.10.20.22.4.53
	id	1..*	SHALL	II	8994	
	code	1..1	SHALL	CD	8995	2.16.840.1.113883.1.11.19717 (No Immunization Reason Value Set)
	statusCode	1..1	SHALL	CS	8996	2.16.840.1.113883.5.14 (ActStatus) = completed

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8991).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8992).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8993) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.53"** (CONF:10500).
4. **SHALL** contain at least one [1..*] **id** (CONF:8994).
5. **SHALL** contain exactly one [1..1] **code**, where the **@code** **SHALL** be selected from ValueSet No Immunization Reason Value Set 2.16.840.1.113883.1.11.19717 **DYNAMIC** (CONF:8995).
6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8996).

Table 194: No Immunization Reason Value Set

Value Set: No Immunization Reason Value Set 2.16.840.1.113883.1.11.19717 DYNAMIC Code System(s): ActReason 2.16.840.1.113883.5.8		
Code	Code System	Print Name
IMMUNE	ActReason	Immunity
MEDPREC	ActReason	Medical precaution
OSTOCK	ActReason	Out of stock
PATOBJ	ActReason	Patient objection
PHILISOP	ActReason	Philosophical objection
RELIG	ActReason	Religious objection
VACEFF	ActReason	Vaccine efficacy concerns
VACSAF	ActReason	Vaccine safety concerns

Figure 189: Immunization refusal reason

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.53"/>
  <!-- Immunization Refusal -->
  <id root="350a25a0-5e69-11e1-b86c-0800200c9a66"/>
  <code displayName="Patient Objection" code="PATOBJ"
    codeSystemName="HL7 ActNoImmunizationReason"
    codeSystem="2.16.840.1.113883.11.19725"/>
  <statusCode code="completed"/>
</observation>
```

6.37 Indication

[observation: templateId 2.16.840.1.113883.10.20.22.4.19 (open)]

Table 195: Indication Contexts

Used By:	Contains Entries:
Encounter Activities (optional) Procedure Indications Section (optional) Immunization Activity (optional) Procedure Activity Act (optional) Procedure Activity Observation (optional) Procedure Activity Procedure (optional) Medication Activity (optional)	

The Indication Observation documents the rationale for an activity. It can do this with the id element to reference a problem recorded elsewhere in the document or with a code and value to record the problem type and problem within the Indication. For example, the indication for a prescription of a painkiller might be a headache that is documented in the Problems Section.

Table 196: Indication Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.19']						
	@classCode	1..1	SHALL		7480	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7481	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7482	
	@root	1..1	SHALL		10502	2.16.840.1.113883.10.20.22.4.19
	id	1..1	SHALL		7483	
	code	1..1	SHALL		16886	2.16.840.1.113883.3.88.12.3221.7.2 (Problem Type)
	statusCode	1..1	SHALL		7487	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	7488	
	value	0..1	SHOULD	CD	7489	
	@nullFlavor	0..1	MAY		15990	
	@code	0..1	SHOULD		15985	2.16.840.1.113883.3.88.12.3221.7.4 (Problem)

1. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7480).

2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7481).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7482) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.19" (CONF:10502).
4. **SHALL** contain exactly one [1..1] **id** (CONF:7483).
 - a. Set the observation/id equal to an ID on the problem list to signify that problem as an indication (CONF:16885).
5. **SHALL** contain exactly one [1..1] **code**, which **SHOULD** be selected from ValueSet Problem Type 2.16.840.1.113883.3.88.12.3221.7.2 **STATIC** 2012-06-01 (CONF:16886).
6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:7487).
7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:7488).
8. **SHOULD** contain zero or one [0..1] **value** with @xsi:type="CD" (CONF:7489).
 - a. The value, if present, **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:15990).
 - i. If the diagnosis is unknown or the SNOMED code is unknown, **@nullFlavor** **SHOULD** be "UNK". If the code is something other than SNOMED, **@nullFlavor** **SHOULD** be "OTH" and the other code **SHOULD** be placed in the translation element (CONF:15991).
 - b. The value, if present, **SHOULD** contain zero or one [0..1] **@code** (ValueSet: [Problem 2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC](#)) (CONF:15985).

Figure 190: Indication entry example

```
<observation classCode="OBS" moodCode="EVN">
  <!-- Indication -->
  <templateId root="2.16.840.1.113883.10.20.22.4.19"/>
  <id extension="123456789" root="2.16.840.1.113883.19"/>
  <code code="409586006"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Complaint"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="195967001"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Asthma"/>
</observation>
```

6.38 Instructions

[act: templateId 2.16.840.1.113883.10.20.22.4.20 (open)]

Table 197: Instructions Contexts

Used By:	Contains Entries:
Medication Supply Order Medication Activity Procedure Activity Procedure Procedure Activity Observation Procedure Activity Act Immunization Activity Instructions Section Plan of Care Section	

The Instructions template can be used in several ways, such as to record patient instructions within a Medication Activity or to record fill instructions within a supply order. The act/code defines the type of instruction. Though not defined in this template, a Vaccine Information Statement (VIS) document could be referenced through act/reference/externalDocument, and patient awareness of the instructions can be represented with the generic participant and the participant/awarenessCode.

Table 198: Instructions Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
act[templateId/@root = '2.16.840.1.113883.10.20.22.4.20']						
	@classCode	1..1	SHALL		7391	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		7392	2.16.840.1.113883.5.1001 (ActMood) = INT
	templateId	1..1	SHALL	SET<II>	7393	
	@root	1..1	SHALL		10503	2.16.840.1.113883.10.20.22.4.20
	code	1..1	SHALL	CE	7394	2.16.840.1.113883.11.20.9.34 (Patient Education)
	text	0..1	SHOULD		7395	
	reference	1..1	SHOULD		15577	
	@value	1..1	SHOULD		15578	
	statusCode	1..1	SHALL		7396	2.16.840.1.113883.5.14 (ActStatus) = completed

1. **SHALL** contain exactly one [1..1] @classCode="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7391).
2. **SHALL** contain exactly one [1..1] @moodCode="INT" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7392).
3. **SHALL** contain exactly one [1..1] templateId (CONF:7393) such that it

- a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.4.20" (CONF:10503).
- 4. **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE", where the @code **SHOULD** be selected from ValueSet Patient Education 2.16.840.1.113883.11.20.9.34 DYNAMIC (CONF:7394).
- 5. **SHOULD** contain zero or one [0..1] **text** (CONF:7395).
 - a. The text, if present, **SHOULD** contain exactly one [1..1] **reference** (CONF:15577).
 - i. This reference **SHOULD** contain exactly one [1..1] @value (CONF:15578).
 - 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15579).
- 6. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:7396).

Figure 191: Instructions entry example

```

<act classCode="ACT" moodCode="INT">
  <templateId root="2.16.840.1.113883.10.20.22.4.20"/>
  <code code="171044003"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Immunization Education"/>
  <text>
    <reference value="#sect1"/>
    Patient may have low grade fever, mild joint pain and injection
    area tenderness .
  </text>
  <statusCode code="completed"/>
</act>

```

Table 199: Patient Education Value Set

Value Set: Patient Education 2.16.840.1.113883.11.20.9.34 DYNAMIC		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Description:	Limited to terms descending from the Education (409073007) hierarchy. Code system browser: https://uts.nlm.nih.gov/snomedctBrowser.html	
Code	Code System	Print Name
311401005	SNOMED CT	Patient Education
171044003	SNOMED CT	Immunization Education
243072006	SNOMED CT	Cancer Education
...		

6.39 Medication Activity

[substanceAdministration: templateId
2.16.840.1.113883.10.20.22.4.16(open)]

Table 200: Medication Activity Contexts

Used By:	Contains Entries:
Reaction Observation	Drug Vehicle
Medications Section (entries required)	Indication
Discharge Medication	Instructions
Admission Medication	Medication Dispense
Medications Section (entries optional)	Medication Information
Procedure Activity Procedure	Medication Supply Order
Anesthesia Section	Precondition for Substance Administration
Medications Administered Section	Reaction Observation
Procedure Activity Observation	
Procedure Activity Act	

A medication activity describes substance administrations that have actually occurred (e.g. pills ingested or injections given) or are intended to occur (e.g. "take 2 tablets twice a day for the next 10 days"). Medication activities in "INT" mood are reflections of what a clinician intends a patient to be taking. Medication activities in "EVN" mood reflect actual use.

Medication timing is complex. This template requires that there be a substanceAdministration/effectiveTime valued with a time interval, representing the start and stop dates. Additional effectiveTime elements are optional, and can be used to represent frequency and other aspects of more detailed dosing regimens.

Table 201: Medication Activity Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
Green Medication Activity	substanceAdministration[templateId/@root = '2.16.840.1.113883.10.20.22.4.16']					
	@classCode	1..1	SHALL		7496	2.16.840.1.113883.5.6 (HL7ActClass) = SBADM
	@moodCode	1..1	SHALL		7497	2.16.840.1.113883.11.20.9.18 (MoodCodeEvnInt)
	templateId	1..1	SHALL	SET< II>	7499	
	@root	1..1	SHALL		10504	2.16.840.1.113883.10.20.22.4.16
	id	1..*	SHALL		7500	
delivery Method	code	0..1	MAY		7506	
freeTextSig	text	0..1	SHOULD		7501	

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
	reference	0..1	SHOULD		15977	
	@value	0..1	SHOULD		15978	
	statusCode	1..1	SHALL		7507	
	effectiveTime	1..1	SHALL	TS or IVL< TS>	7508	
indicate Medication Started	low	1..1	SHALL	TS	7511	
indicate Medication Stopped	high	1..1	SHALL	TS	7512	
administrationTiming	effectiveTime	0..1	SHOULD	TS or IVL< TS>	7513	
	@operator	1..1	SHALL		9106	A
	repeatNumber	0..1	MAY	IVL< INT>	7555	
route	routeCode	0..1	MAY		7514	2.16.840.1.113883.3.88.1 2.3221.8.7 (Medication Route FDA Value Set)
site	approachSiteCode	0..1	MAY	SET< CD>	7515	2.16.840.1.113883.3.88.1 2.3221.8.9 (Body Site Value Set)
dose	doseQuantity	0..1	SHOULD	IVL< PQ>	7516	
	@unit	0..1	SHOULD		7526	2.16.840.1.113883.1.11.1 2839 (UCUM Units of Measure (case sensitive)) = 1
	rateQuantity	0..1	MAY	IVL< PQ>	7517	
	@unit	1..1	SHALL		7525	2.16.840.1.113883.1.11.1 2839 (UCUM Units of Measure (case sensitive)) = 1
dose Restriction	maxDoseQuantity	0..1	MAY	RTO< PQ, PQ>	7518	
product Form	administrationUnitCode	0..1	MAY		7519	2.16.840.1.113883.3.88.1 2.3221.8.11 (Medication Product Form)
medication Information	consumable	1..1	SHALL		7520	
	manufacturedProduct	1..1	SHALL		16085	
	performer	0..1	MAY		7522	

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
vehicle	participant	0..*	MAY		7523	
	@typeCode	1..1	SHALL		7524	2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
	participantRole	1..1	SHALL		16086	
indication	entryRelationship	0..*	MAY		7536	
	@typeCode	1..1	SHALL		7537	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		16087	
patient Instructions	entryRelationship	0..1	MAY		7539	
	@typeCode	1..1	SHALL		7540	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		7542	true
	act	1..1	SHALL		16088	
order Information	entryRelationship	0..1	MAY		7543	
	@typeCode	1..1	SHALL		7547	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		16089	
fulfillment Instructions	entryRelationship	0..*	MAY		7549	
	@typeCode	1..1	SHALL		7553	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		16090	
reaction	entryRelationship	0..1	MAY		7552	
	@typeCode	1..1	SHALL		7544	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = CAUS
	observation	1..1	SHALL		16091	
	precondition	0..*	MAY		7546	
	@typeCode	1..1	SHALL		7550	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = PRCN
	criterion	1..1	SHALL		16092	

1. **SHALL** contain exactly one [1..1] @classCode="SBADM" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7496).
2. **SHALL** contain exactly one [1..1] @moodCode, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03 (CONF:7497).

3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7499) such that it
 - a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.4.16"` (CONF:10504).
4. **SHALL** contain at least one [1..*] **id** (CONF:7500).
5. **MAY** contain zero or one [0..1] **code** (CONF:7506).
6. **SHOULD** contain zero or one [0..1] **text** (CONF:7501).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15977).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15978).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15979).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:7507).
8. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:7508) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:7511).
 - b. **SHALL** contain exactly one [1..1] **high** (CONF:7512).
9. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:7513) such that it
 - a. **SHALL** contain exactly one [1..1] **@operator="A"** (CONF:9106).
 - b. **SHALL** contain exactly one [1..1] **@xsi:type="PIVL_TS" or "EIVL_TS"** (CONF:9105).
10. **MAY** contain zero or one [0..1] **repeatNumber** (CONF:7555).
 - a. In "INT" (intent) mood, the repeatNumber defines the number of allowed administrations. For example, a repeatNumber of "3" means that the substance can be administered up to 3 times. In "EVN" (event) mood, the repeatNumber is the number of occurrences. For example, a repeatNumber of "3" in a substance administration event means that the current administration is the 3rd in a series (CONF:16877).
11. **MAY** contain zero or one [0..1] **routeCode**, which **SHALL** be selected from ValueSet Medication Route FDA Value Set
`2.16.840.1.113883.3.88.12.3221.8.7 DYNAMIC` (CONF:7514).
12. **MAY** contain zero or one [0..1] **approachSiteCode**, where the **@code** **SHALL** be selected from ValueSet Body Site Value Set
`2.16.840.1.113883.3.88.12.3221.8.9 DYNAMIC` (CONF:7515).
13. **SHOULD** contain zero or one [0..1] **doseQuantity** (CONF:7516).
 - a. The doseQuantity, if present, **SHOULD** contain zero or one [0..1] **@unit="1"**, which **SHALL** be selected from ValueSet UCUM Units of Measure (case sensitive)
`2.16.840.1.113883.1.11.12839 DYNAMIC` (CONF:7526).
 - b. Pre-coordinated consumable: If the consumable code is a precoordinated unit dose (e.g. "metoprolol 25mg tablet") then doseQuantity is a unitless number that indicates the number of products given per administration (e.g. "2", meaning 2 x "metoprolol 25mg tablet") (CONF:16878).

- c. Not pre-coordinated consumable: If the consumable code is not pre-coordinated (e.g. is simply "metoprolol"), then doseQuantity must represent a physical quantity with @unit, e.g. "25" and "mg", specifying the amount of product given per administration (CONF:16879).
14. **MAY** contain zero or one [0..1] **rateQuantity** (CONF:7517).
- a. The rateQuantity, if present, **SHALL** contain exactly one [1..1] @unit="1", which **SHALL** be selected from ValueSet UCUM Units of Measure (case sensitive) 2.16.840.1.113883.1.11.12839 **DYNAMIC** (CONF:7525).
15. **MAY** contain zero or one [0..1] **maxDoseQuantity** (CONF:7518).
16. **MAY** contain zero or one [0..1] **administrationUnitCode**, which **SHALL** be selected from ValueSet Medication Product Form 2.16.840.1.113883.3.88.12.3221.8.11 **DYNAMIC** (CONF:7519).
17. **SHALL** contain exactly one [1..1] **consumable** (CONF:7520).
- a. This consumable **SHALL** contain exactly one [1..1] [Medication Information](#) (templateId:2.16.840.1.113883.10.20.22.4.23) (CONF:16085).
18. **MAY** contain zero or one [0..1] **performer** (CONF:7522).
19. **MAY** contain zero or more [0..*] **participant** (CONF:7523) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="CSM" (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:7524).
 - b. **SHALL** contain exactly one [1..1] [Drug Vehicle](#) (templateId:2.16.840.1.113883.10.20.22.4.24) (CONF:16086).
20. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:7536) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="RSON" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7537).
 - b. **SHALL** contain exactly one [1..1] [Indication](#) (templateId:2.16.840.1.113883.10.20.22.4.19) (CONF:16087).
21. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7539) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="SUBJ" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7540).
 - b. **SHALL** contain exactly one [1..1] @inversionInd="true" True (CONF:7542).
 - c. **SHALL** contain exactly one [1..1] [Instructions](#) (templateId:2.16.840.1.113883.10.20.22.4.20) (CONF:16088).
22. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7543) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7547).
 - b. **SHALL** contain exactly one [1..1] [Medication Supply Order](#) (templateId:2.16.840.1.113883.10.20.22.4.17) (CONF:16089).

23. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:7549) such that it
- SHALL** contain exactly one [1..1] @typeCode="REFR" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7553).
 - SHALL** contain exactly one [1..1] Medication Dispense (templateId:2.16.840.1.113883.10.20.22.4.18) (CONF:16090).
24. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7552) such that it
- SHALL** contain exactly one [1..1] @typeCode="CAUS" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7544).
 - SHALL** contain exactly one [1..1] Reaction Observation (templateId:2.16.840.1.113883.10.20.22.4.9) (CONF:16091).
25. **MAY** contain zero or more [0..*] **precondition** (CONF:7546) such that it
- SHALL** contain exactly one [1..1] @typeCode="PRCN" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7550).
 - SHALL** contain exactly one [1..1] Precondition for Substance Administration (templateId:2.16.840.1.113883.10.20.22.4.25) (CONF:16092).
26. Medication Activity **SHOULD** include doseQuantity OR rateQuantity (CONF:7529).

Table 202: MoodCodeEvnInt Value Set

Value Set: MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 STATIC 2011-04-03		
Code System(s): ActMood 2.16.840.1.113883.5.1001		
Description:	Subset of HL7 ActMood codes, constrained to represent event (EVN) and intent (INT) moods	
Code	Code System	Print Name
EVN	ActMood	Event
INT	ActMood	Intent

Table 203: Medication Route FDA Value Set (excerpt)

Value Set: Medication Route FDA Value Set 2.16.840.1.113883.3.88.12.3221.8.7 DYNAMIC		
Code System(s): National Cancer Institute (NCI) Thesaurus 2.16.840.1.113883.3.26.1.1		
Description:	This indicates the method for the medication received by the individual (e.g., by mouth, intravenously, topically, etc.). NCI concept code for route of administration: C38114 http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/ucm162034.htm	
Code	Code System	Print Name
C38229	NCI Thesaurus	INTRACAUDAL
C38276	NCI Thesaurus	INTRAVENOUS
C38288	NCI Thesaurus	ORAL
C38295	NCI Thesaurus	RECTAL
...		

Table 204: Body Site Value Set (excerpt)

Value Set: Body Site Value Set 2.16.840.1.113883.3.88.12.3221.8.9 DYNAMIC		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Description:	Contains values descending from the SNOMED CT® Anatomical Structure (91723000) hierarchy or Acquired body structure (body structure) (280115004) or Anatomical site notations for tumor staging (body structure) (258331007) or Body structure, altered from its original anatomical structure (morphologic abnormality) (118956008) or Physical anatomical entity (body structure) (91722005) This indicates the anatomical site. http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html	
Code	Code System	Print Name
361316009	SNOMED CT	entire embryonic artery
38033009	SNOMED CT	amputation stump
9550003	SNOMED CT	bronchogenic cyst
302509004	SNOMED CT	heart
...		

Table 205: Medication Product Form Value Set (excerpt)

Value Set: Medication Product Form 2.16.840.1.113883.3.88.12.3221.8.11 DYNAMIC		
Code System(s): National Cancer Institute (NCI) Thesaurus 2.16.840.1.113883.3.26.1.1		
Description:	This is the physical form of the product as presented to the individual. For example: tablet, capsule, liquid or ointment.	
	http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/ucm162038.htm	
Code	Code System	Print Name
C42887	NCI Thesaurus	AEROSOL
C42909	NCI Thesaurus	GRANULE, EFFERVESCENT
C42998	NCI Thesaurus	TABLET
...		

Table 206: Unit of Measure Value Set (excerpt)

Value Set: UCUM Units of Measure (case sensitive) 2.16.840.1.113883.1.11.12839 DYNAMIC		
Code System(s): Unified Code for Units of Measure (UCUM) 2.16.840.1.113883.6.8		
Description:	UCUM codes include all units of measures being contemporarily used in international science, engineering, and business. The purpose is to facilitate unambiguous electronic communication of quantities together with their units. The focus is on electronic communication, as opposed to communication between humans.	
	http://www.regenstrief.org/medinformatics/ucum	
Code	Code System	Print Name
mmol/kg	UCUM	MilliMolesPerKiloGram
fL	UCUM	FemtoLiter
ug/mL	UCUM	MicroGramsPerMilliLiter
...		

Figure 192: Medication activity example

```

<substanceAdministration classCode="SBADM" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
  <id root="cdbd33f0-6cde-11db-9fe1-0800200c9a66"/>
  <text>
    <reference value="#med1"/>
    Proventil 0.09 MG/ACTUAT inhalant solution, 2 puffs QID PRN wheezing
  </text>
  <statusCode code="completed"/>
  <effectiveTime xsi:type="IVL_TS">
    <low value="20110301"/>
    <high value="20120301"/>
  </effectiveTime>
  <effectiveTime xsi:type="PIVL_TS" institutionSpecified="true"
operator="A">
    <period value="6" unit="h"/>
  </effectiveTime>

```

```

<routeCode code="C38216" codeSystem="2.16.840.1.113883.3.26.1.1"
    codeSystemName="NCI Thesaurus"
    displayName="RESPIRATORY (INHALATION)"/>
<doseQuantity value="1"/>
<rateQuantity value="90" unit="ml/min"/>
<maxDoseQuantity nullFlavor="UNK">
    <numerator nullFlavor="UNK"/>
    <denominator nullFlavor="UNK"/>
</maxDoseQuantity>
<administrationUnitCode code="C42944"
    displayName="INHALANT"
    codeSystem="2.16.840.1.113883.3.26.1.1"
    codeSystemName="NCI Thesaurus"/>
<consumable>
    <manufacturedProduct>
        <templateId root="2.16.840.1.113883.10.20.22.4.23"/>
        <!-- Medication Information template -->
        ...
        </manufacturedMaterial>
        <manufacturerOrganization/>
    </manufacturedProduct>
</consumable>
<performer>
    ...
</performer>
<participant typeCode="CSM">
    <participantRole classCode="MANU">
        <templateId root="2.16.840.1.113883.10.20.22.4.24"/>
        <!-- Drug Vehicle template -->
        ...
    </participantRole>
</participant>
<entryRelationship typeCode="RSON">
    <observation classCode="COND" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.19"/>
        <!-- Indication template -->
        ...
    </observation>
</entryRelationship>
<entryRelationship typeCode="REFR">
    <supply classCode="SPLY" moodCode="INT">
        <templateId root="2.16.840.1.113883.10.20.22.4.17"/>
        <!-- Medication Supply Order template -->
        ...
        <entryRelationship typeCode="SUBJ" inversionInd="true">
            <act classCode="ACT" moodCode="INT">
                <templateId root="2.16.840.1.113883.10.20.22.4.20"/>
                <!-- Instructions template -->
                ...
            </act>
        </entryRelationship>
    </supply>
</entryRelationship>

```

```

<entryRelationship typeCode="REFR">
  <supply classCode="SPLY" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.18"/>
    <!-- Medication Dispense template -->
    ...
  </supply>
</entryRelationship>
<precondition typeCode="PRCN">
  <templateId root="2.16.840.1.113883.10.20.22.4.25"/>
  <!-- Precondition for Substance Administration template -->
  ...
</precondition>
</substanceAdministration>

```

6.40 Medication Dispense

[supply: templateId 2.16.840.1.113883.10.20.22.4.18 (open)]

Table 207: Medication Dispense Contexts

Used By:	Contains Entries:
Medication Activity Immunization Activity	Immunization Medication Information Medication Information Medication Supply Order

This template records the act of supplying medications (i.e., dispensing).

Table 208: Medication Dispense Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
Green Medication Dispense	supply[templateId/@root = '2.16.840.1.113883.10.20.22.4.18']					
	@classCode	1..1	SHALL		7451	2.16.840.1.113883.5.6 (HL7ActClass) = SPLY
	@moodCode	1..1	SHALL		7452	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7453	
	@root	1..1	SHALL		10505	2.16.840.1.113883.10.20.22.4.18
prescriptionNumber	id	1..*	SHALL		7454	
	statusCode	1..1	SHALL		7455	2.16.840.1.113883.3.88.12.80.64 (Medication Fill Status)
dispense Date	effectiveTime	0..1	SHOULD	TS or IVL<TS>	7456	
fillNumber	repeatNumber	0..1	SHOULD	IVL<INT>	7457	
quantity Dispensed	quantity	0..1	SHOULD		7458	
	product	0..1	MAY		7459	
	manufactured Product	1..1	SHALL		15607	
	product	0..1	MAY		9331	
	manufactured Product	1..1	SHALL		15608	
	performer	0..1	MAY		7461	
provider	assignedEntity	1..1	SHALL		7467	
	addr	0..1	SHOULD	SET<AD>	7468	
order Information	entryRelationship	0..1	MAY		7473	
	@typeCode	1..1	SHALL		7474	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	supply	1..1	SHALL		15606	

1. **SHALL** contain exactly one [1..1] @classCode="SPLY" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7451).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7452).
3. **SHALL** contain exactly one [1..1] templateId (CONF:7453) such that it

- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.18" (CONF:10505).
- 4. **SHALL** contain at least one [1..*] **id** (CONF:7454).
- 5. **SHALL** contain exactly one [1..1] **statusCode**, which **SHALL** be selected from ValueSet Medication Fill Status 2.16.840.1.113883.3.88.12.80.64 DYNAMIC (CONF:7455).
- 6. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:7456).
- 7. **SHOULD** contain zero or one [0..1] **repeatNumber** (CONF:7457).
 - a. In "EVN" (event) mood, the repeatNumber is the number of occurrences. For example, a repeatNumber of "3" in a dispense act means that the current dispensation is the 3rd (CONF:16876).
- 8. **SHOULD** contain zero or one [0..1] **quantity** (CONF:7458).
- 9. **MAY** contain zero or one [0..1] **product** (CONF:7459) such that it
 - a. **SHALL** contain exactly one [1..1] [Medication Information](#) (templateId:2.16.840.1.113883.10.20.22.4.23) (CONF:15607).
- 10. **MAY** contain zero or one [0..1] **product** (CONF:9331) such that it
 - a. **SHALL** contain exactly one [1..1] [Immunization Medication Information](#) (templateId:2.16.840.1.113883.10.20.22.4.54) (CONF:15608).
- 11. **MAY** contain zero or one [0..1] **performer** (CONF:7461).
 - a. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:7467).
 - i. This assignedEntity **SHOULD** contain zero or one [0..1] **addr** (CONF:7468).
 - 1. The content of addr **SHALL** be a conformant [US Realm Address \(AD.US.FIELDED\)](#) (2.16.840.1.113883.10.20.22.5.2) (CONF:10565).
- 12. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7473) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7474).
 - b. **SHALL** contain exactly one [1..1] [Medication Supply Order](#) (templateId:2.16.840.1.113883.10.20.22.4.17) (CONF:15606).
- 13. A supply act **SHALL** contain one product/Medication Information or one product/Immunization Medication Information template (CONF:9333).

Table 209: Medication Fill Status Value Set

Value Set: Medication Fill Status 2.16.840.1.113883.3.88.12.80.64 DYNAMIC Code System: ActStatus 2.16.840.1.113883.5.14		
Code	Code System	Print Name
aborted	ActStatus	Aborted
completed	ActStatus	Completed

Figure 193: Medication dispense example

```
<supply classCode="SPLY" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.18"/>
  <id root="1.2.3.4.56789.1" extension="cb734647-fc99-424c-a864-
7e3cda82e704"/>
  <statusCode code="completed"/>
  <effectiveTime value="20020101"/>
  <repeatNumber value="1"/>
  <quantity value="75"/>
  <performer>
    <time nullFlavor="UNK"/>
    <assignedEntity>
      <id/>
      <addr>
        <streetAddressLine>17 Daws Rd.</streetAddressLine>
        <city>Blue Bell</city>
        <state>MA</state>
        <postalCode>02368</postalCode>
        <country>US</country>
      </addr>
      <telecom nullFlavor="UNK"/>
      <assignedPerson>
        <name>
          <prefix>Dr.</prefix>
          <given>Robert</given>
          <family>Michaels</family>
        </name>
      </assignedPerson>
      <representedOrganization>
        <id root="2.16.840.1.113883.19.5"/>
        <name>Good Health Clinic</name>
        <telecom nullFlavor="UNK"/>
        <addr nullFlavor="UNK"/>
      </representedOrganization>
    </assignedEntity>
  </performer>
</supply>
```

6.41 Medication Information

[manufacturedProduct: templateId
2.16.840.1.113883.10.20.22.4.23(open)]

Table 210: Medication Information Contexts

Used By:	Contains Entries:
Medication Supply Order	
Medication Dispense	
Medication Activity	

The medication can be recorded as a precoordinated product strength, product form, or product concentration (e.g., "metoprolol 25mg tablet", "amoxicillin 400mg/5mL suspension"); or not pre-coordinated (e.g., "metoprolol product").

Table 211: Medication Information Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
Green Medication Information	manufacturedProduct[templateId/@root = '2.16.840.1.113883.10.20.22.4.23']					
	@classCode	1..1	SHALL		7408	2.16.840.1.113883.5.110 (RoleClass) = MANU
	templateId	1..1	SHALL	SET< II>	7409	
	@root	1..1	SHALL		10506	2.16.840.1.113883.10.20.2 2.4.23
	id	0..*	MAY		7410	
	manufactured Material	1..1	SHALL		7411	
codedProductName	code	1..1	SHALL		7412	2.16.840.1.113883.3.88.12. 80.17 (Medication Clinical Drug)
freeText ProductName	originalText	0..1	SHOULD		7413	
	reference	0..1	SHOULD		15986	
	@value	0..1	SHOULD		15987	
codedBrand Name	translation	0..*	MAY	SET< PQR>	7414	
drug Manufacturer	Manufacturer Organization	0..1	MAY		7416	

1. **SHALL** contain exactly one [1..1] **@classCode="MANU"** (CodeSystem: RoleClass 2.16.840.1.113883.5.110) (CONF:7408).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7409) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.23"** (CONF:10506).
3. **MAY** contain zero or more [0..*] **id** (CONF:7410).
4. **SHALL** contain exactly one [1..1] **manufacturedMaterial** (CONF:7411).
 - a. This manufacturedMaterial **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet Medication Clinical Drug 2.16.840.1.113883.3.88.12.80.17 **DYNAMIC** (CONF:7412).
 - i. This code **SHOULD** contain zero or one [0..1] **originalText** (CONF:7413).
 1. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15986).
 - a. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15987).
 - i. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the

- approach defined in CDA Release 2, section 4.3.5.1) (CONF:15988).
- ii. This code **MAY** contain zero or more [0..*] **translation** (CONF:7414).
 - 1. Translations can be used to represent generic product name, packaged product code, etc (CONF:16875).
 - 5. **MAY** contain zero or one [0..1] **manufacturerOrganization** (CONF:7416).

Figure 194: Medication information example

```
<manufacturedProduct classCode="MANU">
  <templateId root="2.16.840.1.113883.10.20.22.4.23"/>
  <id/>
  <manufacturedMaterial>
    <code code="329498"
      codeSystem="2.16.840.1.113883.6.88"
      codeSystemName="RxNorm"
      displayName="Albuterol 0.09 MG/ACTUAT inhalant solution">
      <originalText><reference value="#manmat1"/></originalText>
      <translation code="573621"
        codeSystem="2.16.840.1.113883.6.88" codeSystemName="RxNorm"
        displayName="Proventil 0.09 MG/ACTUAT inhalant solution"
        sdtc:valueSet="{$QDMElementValueSetOID}"/>
        <!-- Would be actual valueSetOID -->
    </code>
  </manufacturedMaterial>
  <manufacturerOrganization>...</manufacturerOrganization>
</manufacturedProduct>
```

6.42 Medication Supply Order

[supply: templateId 2.16.840.1.113883.10.20.22.4.17 (open)]

Table 212: Medication Supply Order Contexts

Used By:	Contains Entries:
Medication Dispense	Immunization Medication Information
Medication Activity	Instructions
Immunization Activity	Medication Information

This template records the intent to supply a patient with medications.

Table 213: Medication Supply Order Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Medication Supply Order	supply[templateId/@root = '2.16.840.1.113883.10.20.22.4.17']					
	@classCode	1..1	SHALL		7427	2.16.840.1.113883.5.6 (HL7ActClass) = SPLY
	@moodCode	1..1	SHALL		7428	2.16.840.1.113883.5.100 1 (ActMood) = INT
	templateId	1..1	SHALL	SET<II>	7429	
	@root	1..1	SHALL		10507	2.16.840.1.113883.10.20. 22.4.17
order Number	id	1..*	SHALL		7430	
	statusCode	1..1	SHALL		7432	
	effectiveTime	0..1	SHOULD	IVL_TS	15143	
	high	1..1	SHALL		15144	
fills	repeatNumber	0..1	SHOULD	IVL<INT>	7434	
quantity Ordered	quantity	0..1	SHOULD		7436	
	product	0..1	MAY		7439	
	manufactured Product	1..1	SHALL		16093	
	product	0..1	MAY		9334	
	manufactured Product	1..1	SHALL		16094	
ordering Provider	author	0..1	MAY		7438	
patient Instructions	entry Relationship	0..1	MAY		7442	
	@typeCode	1..1	SHALL		7444	2.16.840.1.113883.5.100 2 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		7445	true
	act	1..1	SHALL		16095	

1. **SHALL** contain exactly one [1..1] **@classCode="SPLY"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7427).
2. **SHALL** contain exactly one [1..1] **@moodCode="INT"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7428).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7429) such that it

- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.17" (CONF:10507).
- 4. **SHALL** contain at least one [1..*] **id** (CONF:7430).
- 5. **SHALL** contain exactly one [1..1] **statusCode** (CONF:7432).
- 6. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:15143) such that it
 - a. **SHALL** contain exactly one [1..1] **high** (CONF:15144).
- 7. **SHOULD** contain zero or one [0..1] **repeatNumber** (CONF:7434).
 - a. In "INT" (intent) mood, the repeatNumber defines the number of allowed fills. For example, a repeatNumber of "3" means that the substance can be supplied up to 3 times (or, can be dispensed, with 2 refills) (CONF:16869).
- 8. **SHOULD** contain zero or one [0..1] **quantity** (CONF:7436).
- 9. **MAY** contain zero or one [0..1] **product** (CONF:7439) such that it
 - a. **SHALL** contain exactly one [1..1] [Medication Information](#) (templateId:2.16.840.1.113883.10.20.22.4.23) (CONF:16093).
- 10. **MAY** contain zero or one [0..1] **product** (CONF:9334) such that it
 - a. **SHALL** contain exactly one [1..1] [Immunization Medication Information](#) (templateId:2.16.840.1.113883.10.20.22.4.54) (CONF:16094).
 - i. A supply act **SHALL** contain one product/Medication Information or one product/Immunization Medication Information template (CONF:16870).
- 11. **MAY** contain zero or one [0..1] **author** (CONF:7438).
- 12. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7442).
 - a. The entryRelationship, if present, **SHALL** contain exactly one [1..1] @typeCode="SUBJ" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7444).
 - b. The entryRelationship, if present, **SHALL** contain exactly one [1..1] @inversionInd="true" True (CONF:7445).
 - c. The entryRelationship, if present, **SHALL** contain exactly one [1..1] [Instructions](#) (templateId:2.16.840.1.113883.10.20.22.4.20) (CONF:16095).

Figure 195: Medication supply order example

```
<supply classCode="SPLY" moodCode="INT">
  <templateId root="2.16.840.1.113883.10.20.22.4.17"/>
  <id root="1.2.3.4.5.6.7" extension="1234567"/>
  <statusCode code="completed"/>
  <effectiveTime xsi:type="IVL_TS">
    <width value="10" unit="d"/>
    <high value="20121012" />
  </effectiveTime>
  <repeatNumber value="1"/>
  <quantity value="75"/>
  <product>
    <manufacturedProduct>
      <templateId root="2.16.840.1.113883.10.20.22.4.23"/>
      <!-- Medication Information template -->
      ...
    </manufacturedProduct>
  </product>
  <author>
    ...
  </author>
  <entryRelationship typeCode="SUBJ" inversionInd="true">
    <act classCode="ACT" moodCode="INT">
      <templateId root="2.16.840.1.113883.10.20.22.4.20"/>
      <!-- Instructions template -->
      ...
    </act>
  </entryRelationship>
</supply>
```

6.43 Medication Use – None Known (deprecated)

[observation: templateId 2.16.840.1.113883.10.20.22.4.29(open)]

The recommended approach to stating no known medications is to use the appropriate nullFlavor instead of this template. See "[Unknown Information](#)" in Section 1.

This template indicates that the subject is not known to be on any medications.

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7557).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7558).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7559) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.29" (CONF:10508).
4. **SHALL** contain at least one [1..*] **id** (CONF:7560).
5. **SHALL** contain exactly one [1..1] **code="ASSERTION"** (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:7561).
6. **MAY** contain zero or one [0..1] **text** (CONF:7565).

- a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15580).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15581).
 - 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15582).
- 7. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:7562).
- 8. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:7563).
- 9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="ANY"="182904002" Drug treatment unknown (CodeSystem: SNOMEDCT 2.16.840.1.113883.6.96) (CONF:7564).

Figure 196: Medication use – none known example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.29"/>
  <id root="db734647-fc99-424c-a864-7e3cda82e703" extension="45665"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <text><reference value="#med_text1"/></text>
  <statusCode code="completed"
    codeSystem="2.16.840.1.113883.5.4"/>
  <effectiveTime value="20110203"/>
  <value code="182904002"
    displayName="Drug treatment unknown"
    codeSystem="2.16.840.1.113883.6.96"/>
</observation>
```

6.44 Non-Medicinal Supply Activity

[supply: templateId 2.16.840.1.113883.10.20.22.4.50 (open)]

Table 214: Non-Medicinal Supply Activity Contexts

Used By:	Contains Entries:
Medical Equipment Section Functional Status Result Observation (optional) Cognitive Status Problem Observation Cognitive Status Result Observation Functional Status Problem Observation Functional Status Result Observation	Product Instance

This template records non-medicinal supplies provided, such as medical equipment.

Table 215: Non-Medicinal Supply Activity Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	supply[templateId/@root = '2.16.840.1.113883.10.20.22.4.50']					
	@classCode	1..1	SHALL		8745	2.16.840.1.113883.5.6 (HL7ActClass) = SPLY
	@moodCode	1..1	SHALL		8746	2.16.840.1.113883.11.20.9.18 (MoodCodeEvnInt)
	templateId	1..1	SHALL	SET< II>	8747	
	@root	1..1	SHALL		10509	2.16.840.1.113883.10.20.22.4.50
	id	1..*	SHALL		8748	
	statusCode	1..1	SHALL		8749	
	effectiveTime	0..1	SHOULD	IVL_TS	15498	
	quantity	0..1	SHOULD		8751	
	participant	0..1	MAY		8752	
	@typeCode	1..1	SHALL		8754	2.16.840.1.113883.5.90 (HL7ParticipationType) = PRD
	participantRole	1..1	SHALL		15900	

1. **SHALL** contain exactly one [1..1] **@classCode="SPLY"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8745).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03 (CONF:8746).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8747) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.50"** (CONF:10509).
4. **SHALL** contain at least one [1..*] **id** (CONF:8748).
5. **SHALL** contain exactly one [1..1] **statusCode** (CONF:8749).
6. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:15498).
 - a. The effectiveTime, if present, **SHOULD** contain zero or one [0..1] high (CONF:16867).
7. **SHOULD** contain zero or one [0..1] **quantity** (CONF:8751).
8. **MAY** contain zero or one [0..1] **participant** (CONF:8752) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="PRD"** Product (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8754).
 - b. **SHALL** contain exactly one [1..1] **Product Instance** (templateId:2.16.840.1.113883.10.20.22.4.37) (CONF:15900).

Figure 197: Non-medicinal supply activity example

```

<supply classCode="SPLY" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.50"/>
    <!-- Non-Medicinal Supply Activity template -->
    <id root="2413773c-2372-4299-bbe6-5b0f60664446"/>
    <statusCode code="completed"/>
    <effectiveTime xsi:type="IVL_TS">
        <center value="199911"/>
    </effectiveTime>
    <quantity value="2"/>
    <participant typeCode="PRD">
        <participantRole classCode="MANU">
            <templateId root="2.16.840.1.113883.10.20.22.4.37"/>
            <!-- *** Product Instance template *** -->
            ...
        </participantRole>
    </participant>
</supply>

```

6.45 Number of Pressure Ulcers Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.76 (open)]

Table 216: Number of Pressure Ulcers Observation Contexts

Used By:	Contains Entries:
Functional Status Section (optional)	

This clinical statement enumerates the number of pressure ulcers observed in a particular stage.

Table 217: Number of Pressure Ulcers Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.76']						
	@classCode	1..1	SHALL		14705	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14706	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		14707	
	@root	1..1	SHALL		14708	2.16.840.1.113883.10.20.22.4.76
	id	1..*	SHALL		14709	
	code	1..1	SHALL		14767	
	@code	1..1	SHALL		14768	2264892003
	statusCode	1..1	SHALL		14714	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL		14715	
	value	1..1	SHALL	INT	14771	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	author	0..1	MAY		14717	
	entry Relationship	1..1	SHALL		14718	
	@typeCode	1..1	SHALL		14719	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	observation	1..1	SHALL		14720	
	@classCode	1..1	SHALL		14721	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14722	2.16.840.1.113883.5.1001 (ActMood) = EVN
	value	1..1	SHALL	CD	14725	2.16.840.1.113883.11.20.9.35 (Pressure Ulcer Stage)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14705).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14706).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:14707) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.76"** (CONF:14708).
4. **SHALL** contain at least one [1..*] **id** (CONF:14709).
5. **SHALL** contain exactly one [1..1] **code** (CONF:14767).
 - a. This code **SHALL** contain exactly one [1..1] **@code="2264892003"** number of pressure ulcers (CONF:14768).
6. **SHALL** contain exactly one [1..1] **statusCode="completed"** (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14714).
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:14715).
8. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="INT"** (CONF:14771).
9. **MAY** contain zero or one [0..1] **author** (CONF:14717).
10. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:14718).
 - a. This entryRelationship **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14719).
 - b. This entryRelationship **SHALL** contain exactly one [1..1] **observation** (CONF:14720).
 - i. This observation **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14721).
 - ii. This observation **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14722).
 - iii. This observation **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"**, where the **@code** **SHOULD** be selected from

ValueSet Pressure Ulcer Stage
2.16.840.1.113883.11.20.9.35 (CONF:14725).

Figure 198: Number of pressure ulcers example

```
<entry typeCode="DRIV">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.70"/>
    <id root="08edb7c0-2111-43f2-a784-9a5fdfaa67f0"/>
    <code code="2264892003"
      codeSystem="2.16.840.1.113883.6.96"
      displayName=" number of pressure ulcers"/>
    <statusCode code="completed"/>
    <value xsi:type="INT" value="3"/>
    <entryRelationship typeCode="SUBJ">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.76"/>
        <value xsi:type="CD" code="421927004"
          codeSystem="2.16.840.1.113883.6.96"
          displayName="Pressure ulcer stage 3"/>
      </observation>
    </entryRelationship>
  </observation>
</entry>
```

6.46 Plan of Care Activity Act

[act: templateId 2.16.840.1.113883.10.20.22.4.39 (open)]

Table 218: Plan of Care Activity Act Contexts

Used By:	Contains Entries:
Assessment and Plan Section	
Plan of Care Section	

This is the generic template for the Plan of Care Activity.

Table 219: Plan of Care Activity Act Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
act[templateId/@root = '2.16.840.1.113883.10.20.22.4.39']						
	@classCode	1..1	SHALL		8538	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		8539	2.16.840.1.113883.11.20.9.23 (Plan of Care moodCode (Act/Encounter/Procedure))
	templateId	1..1	SHALL	SET<II>	8544	
	@root	1..1	SHALL		10510	2.16.840.1.113883.10.20.22.4.39
	id	1..*	SHALL	II	8546	

1. **SHALL** contain exactly one [1..1] `@classCode="ACT"` (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8538).
2. **SHALL** contain exactly one [1..1] `@moodCode`, which **SHALL** be selected from ValueSet Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23 STATIC 2011-09-30 (CONF:8539).
3. **SHALL** contain exactly one [1..1] `templateId` (CONF:8544) such that it
 - a. **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.22.4.39"` (CONF:10510).
4. **SHALL** contain at least one [1..*] `id` (CONF:8546).

Table 220: Plan of Care moodCode (Act/Encounter/Procedure)

Value Set: Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23 STATIC 2011-09-30		
Code System(s): HL7 ActMood 2.16.840.1.113883.5.1001		
Code	Code System	Print Name
INT	HL7 ActMood	Intent
ARQ	HL7 ActMood	Appointment Request
PRMS	HL7 ActMood	Promise
PRP	HL7 ActMood	Proposal
RQO	HL7 ActMood	Request

Figure 199: Plan of care activity act example

```
<act moodCode="RQO" classCode="ACT">
  <templateId root="2.16.840.1.113883.10.20.22.4.39"/>
  <!-- Plan of Care Activity Act -->
  <id root="9a6d1bac-17d3-4195-89a4-1121bc809a5c"/>
  <code code="310634005" codeSystem="2.16.840.1.113883.6.96"
    displayName="Colonoscopy"/>
  <statusCode code="new"/>
  <effectiveTime>
    <center value="20000421"/>
  </effectiveTime>
</act>
```

6.47 Plan of Care Activity Encounter

[encounter: templateId 2.16.840.1.113883.10.20.22.4.40 (open)]

Table 221: Plan of Care Activity Encounter Contexts

Used By:	Contains Entries:
Plan of Care Section	

This is the template for the Plan of Care Activity Encounter.

Table 222: Plan of Care Activity Encounter Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	encounter[templateId/@root = '2.16.840.1.113883.10.20.22.4.40']					
	@classCode	1..1	SHALL		8564	2.16.840.1.113883.5.6 (HL7ActClass) = ENC
	@moodCode	1..1	SHALL		8565	2.16.840.1.113883.11.20.9.23 (Plan of Care moodCode (Act/Encounter/Procedure))
	templateId	1..1	SHALL	SET<II>	8566	
	@root	1..1	SHALL		10511	2.16.840.1.113883.10.20.22.4.40
	id	1..*	SHALL	II	8567	

1. **SHALL** contain exactly one [1..1] @classCode="ENC" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8564).
2. **SHALL** contain exactly one [1..1] @moodCode, which **SHALL** be selected from ValueSet [Plan of Care moodCode \(Act/Encounter/Procedure\)](#) [2.16.840.1.113883.11.20.9.23 STATIC](#) 2011-09-30 (CONF:8565).
3. **SHALL** contain exactly one [1..1] templateId (CONF:8566) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.40" (CONF:10511).
4. **SHALL** contain at least one [1..*] id (CONF:8567).

Figure 200: Plan of care activity encounter example

```
<encounter moodCode="INT" classCode="ENC">
  <templateId root="2.16.840.1.113883.10.20.22.4.40"/>
  <!-- **** Plan of Care Activity Encounter template **** -->
  <id root="9a6d1bac-17d3-4195-89a4-1121bc809b4d"/>
</encounter>
```

6.48 Plan of Care Activity Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.44 (open)]

Table 223: Plan of Care Activity Observation Contexts

Used By:	Contains Entries:
Plan of Care Section	

This is the template for the Plan of Care Activity Observation.

Table 224: Plan of Care Activity Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.44']					
	@classCode	1..1	SHALL		8581	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		8582	2.16.840.1.113883.11.20.9.25 (Plan of Care moodCode (Observation))
	templateId	1..1	SHALL	SET<II>	8583	
	@root	1..1	SHALL		10512	2.16.840.1.113883.10.20.22.4.44
	id	1..*	SHALL	II	8584	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8581).
2. **SHALL** contain exactly one [1..1] @moodCode, which **SHALL** be selected from ValueSet Plan of Care moodCode (Observation) 2.16.840.1.113883.11.20.9.25 STATIC 2011-09-30 (CONF:8582).
3. **SHALL** contain exactly one [1..1] templateId (CONF:8583) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.44" (CONF:10512).
4. **SHALL** contain at least one [1..*] id (CONF:8584).

Table 225: Plan of Care moodCode (Observation) Value Set

Value Set: Plan of Care moodCode (Observation) 2.16.840.1.113883.11.20.9.25 STATIC 2011-09-30		
Code System(s): HL7 ActMood 2.16.840.1.113883.5.1001		
Code	Code System	Print Name
INT	ActMood	Intent
GOL	ActMood	Goal
PRMS	ActMood	Promise
PRP	ActMood	Proposal
RQO	ActMood	Request

Figure 201: Plan of care activity observation example

```

<observation classCode="OBS" moodCode="RQO">
  <templateId root="2.16.840.1.113883.10.20.22.4.44"/>
  <!-- Plan of Care Activity Observation template -->
  <id root="9a6d1bac-17d3-4195-89a4-1121bc809b4a"/>
  <code code="23426006" codeSystem="2.16.840.1.113883.6.96"
    displayName="Pulmonary function test"/>
  <statusCode code="new"/>
  <effectiveTime>
    <center value="20000421"/>
  </effectiveTime>
</observation>

```

6.49 Plan of Care Activity Procedure

[procedure: templateId 2.16.840.1.113883.10.20.22.4.41 (open)]

Table 226: Plan of Care Activity Procedure Contexts

Used By:	Contains Entries:
Planned Procedure Section	
Plan of Care Section	

This is the template for the Plan of Care Activity Procedure.

Table 227: Plan of Care Activity Procedure Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
procedure[templateId/@root = '2.16.840.1.113883.10.20.22.4.41']						
	@classCode	1..1	SHALL		8568	2.16.840.1.113883.5.6 (HL7ActClass) = PROC
	@moodCode	1..1	SHALL		8569	2.16.840.1.113883.11.20.9.23 (Plan of Care moodCode (Act/Encounter/Procedure))
templateId						8570
	@root	1..1	SHALL		10513	2.16.840.1.113883.10.20.22.4.41
	id	1..*	SHALL	II	8571	

1. **SHALL** contain exactly one [1..1] **@classCode="PROC"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8568).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet [Plan of Care moodCode \(Act/Encounter/Procedure\)](#) [2.16.840.1.113883.11.20.9.23 STATIC](#) 2011-09-30 (CONF:8569).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8570) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.41"** (CONF:10513).
4. **SHALL** contain at least one [1..*] **id** (CONF:8571).

Figure 202: Plan of care activity procedure example

```

<procedure moodCode="RQO" classCode="PROC">
    <templateId root="2.16.840.1.113883.10.20.22.4.41"/>
    <!-- ** Plan of Care Activity Procedure template ** -->
    <id root="9a6d1bac-17d3-4195-89c4-1121bc809b5a"/>
    <code code="23426006" codeSystem="2.16.840.1.113883.6.96"
          displayName="Pulmonary function test"/>
    <statusCode code="new"/>
    <effectiveTime>
        <center value="20000421"/>
    </effectiveTime>
</procedure>

```

6.50 Plan of Care Activity Substance Administration

[substanceAdministration: templateId
2.16.840.1.113883.10.20.22.4.42 (open)]

Table 228: Plan of Care Activity Substance Administration Contexts

Used By:	Contains Entries:
Plan of Care Section	

This is the template for the Plan of Care Activity Substance Administration

Table 229: Plan of Care Activity Substance Administration Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
substanceAdministration[templateId/@root = '2.16.840.1.113883.10.20.22.4.42']						
	@classCode	1..1	SHALL		8572	2.16.840.1.113883.5.6 (HL7ActClass) = SBADM
	@moodCode	1..1	SHALL		8573	2.16.840.1.113883.11.20.9.24 (Plan of Care moodCode (SubstanceAdministration/Supply))
	templateId	1..1	SHALL	SET<II>	8574	
	@root	1..1	SHALL		10514	2.16.840.1.113883.10.20.22.4.42
	id	1..*	SHALL	II	8575	

1. **SHALL** contain exactly one [1..1] **@classCode="SBADM"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8572).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet Plan of Care moodCode (SubstanceAdministration/Supply) 2.16.840.1.113883.11.20.9.24 **STATIC** 2011-09-30 (CONF:8573).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8574) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.42"** (CONF:10514).
4. **SHALL** contain at least one [1..*] **id** (CONF:8575).

Table 230: Plan of Care moodCode (SubstanceAdministration/Supply) Value Set

Value Set: Plan of Care moodCode (SubstanceAdministration/Supply) 2.16.840.1.113883.11.20.9.24 STATIC 2011-09-30		
Code System(s): HL7 ActMood 2.16.840.1.113883.5.1001		
Code	Code System	Print Name
INT	ActMood	Intent
PRMS	ActMood	Promise
PRP	ActMood	Proposal
RQO	ActMood	Request

Figure 203: Plan of care activity substance administration example

```
<substanceAdministration moodCode="RQO" classCode="SBADM">
  <templateId root="2.16.840.1.113883.10.20.22.4.42"/>
  <!-- ** Plan of Care Activity Substance Administration template *-->
  <id root="9a6d1bac-17d3-4195-89c4-1121bc809b5b"/>
  <consumable>
    <manufacturedProduct>
      <manufacturedLabeledDrug .../>
    </manufacturedProduct>
  </consumable>
</substanceAdministration>
```

6.51 Plan of Care Activity Supply

[supply: templateId 2.16.840.1.113883.10.20.22.4.43 (open)]

Table 231: Plan of Care Activity Supply Contexts

Used By:	Contains Entries:
Plan of Care Section	

This is the template for the Plan of Care Activity Supply.

Table 232: Plan of Care Activity Supply Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	supply[templateId/@root = '2.16.840.1.113883.10.20.22.4.43']					
	@classCode	1..1	SHALL		8577	2.16.840.1.113883.5.6 (HL7ActClass) = SPLY
	@moodCode	1..1	SHALL		8578	2.16.840.1.113883.11.20.9.24 (Plan of Care moodCode (SubstanceAdministration/Supply))
	templateId	1..1	SHALL	SET<II>	8579	
	@root	1..1	SHALL		10515	2.16.840.1.113883.10.20.22.4.43
	id	1..*	SHALL	II	8580	

1. **SHALL** contain exactly one [1..1] **@classCode="SPLY"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8577).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet [Plan of Care moodCode \(SubstanceAdministration/Supply\) 2.16.840.1.113883.11.20.9.24 STATIC](#) 2011-09-30 (CONF:8578).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8579) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.43"** (CONF:10515).
4. **SHALL** contain at least one [1..*] **id** (CONF:8580).

Figure 204: Plan of care activity supply example

```
<supply moodCode="INT" classCode="SPLY">
  <templateId root="2.16.840.1.113883.10.20.22.4.43"/>
  <!-- ** Plan of Care Activity Supply ** -->
  <id root="9a6d1bac-17d3-4195-89c4-1121bc809b5d"/>
  <code .../>
</supply>
```

6.52 Policy Activity

[act: templateId 2.16.840.1.113883.10.20.22.4.61 (closed)]

Table 233: Policy Activity Contexts

Used By:	Contains Entries:
Coverage Activity (required)	

A policy activity represents the policy or program providing the coverage. The person for whom payment is being provided (i.e., the patient) is the covered party. The subscriber of the policy or program is represented as a participant that is the holder the coverage. The payer is represented as the performer of the policy activity.

Table 234: Policy Activity Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Policy Activity	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.61']					
	@classCode	1..1	SHALL		8898	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		8899	2.16.840.1.113883.5.1 001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	8900	
	@root	1..1	SHALL		10516	2.16.840.1.113883.10. 20.22.4.61
resultId	id	1..*	SHALL		8901	
	code	0..1	SHOULD	CE	8903	
	@code	0..1	SHOULD		15993	2.16.840.1.113883.3.8 8.12.3221.5.2 (Health Insurance Type Value Set)
health InsuranceType	code	0..1	SHOULD		8904	2.16.840.1.113883.3.8 8.12.3221.5.2 (Health Insurance Type Value Set)
	statusCode	1..1	SHALL		8902	2.16.840.1.113883.5.1 4 (ActStatus) = completed
	performer	1..1	SHALL		8906	
	@typeCode	1..1	SHALL		8907	2.16.840.1.113883.5.9 0 (HL7ParticipationType) = PRF
	templateId	1..1	SHALL		16808	
	@root	1..1	SHALL		16809	2.16.840.1.113883.10. 20.22.4.87
payer	assignedEntity	1..1	SHALL		8908	
healthPlan Insurance Information SourceId	id	1..*	SHALL		8909	
	code	0..1	SHOULD		8914	
	@code	0..1	SHALL		15992	2.16.840.1.113883.1.1 1.10416 (HL7FinanciallyRespo nsiblePartyType)
healthPlan Insurance Information SourceAddress	addr	0..1	MAY	SET<AD>	8910	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
healthPlan Insurance Information SourcePhone EmailURL	telecom	0..1	MAY	SET<TEL>	8911	
	representedOrganization	0..1	SHOULD		8912	
healthPlan Insurance Information SourceName	name	0..1	SHOULD	PN	8913	
guarantorInformation	performer	0..1	SHOULD		8961	2.16.840.1.113883.5.90 (HL7ParticipationType) = PRF
	templateId	1..1	SHALL		16810	
	@root	1..1	SHALL		16811	2.16.840.1.113883.10.20.22.4.88
effectiveDateOf Financial Responsibility	time	0..1	SHOULD	IVL<TS>	8963	
	assignedEntity	1..1	SHALL		8962	
	code	1..1	SHALL		8968	
	@code	1..1	SHALL		16096	2.16.840.1.113883.5.11 (RoleCode) = GUAR
financial Responsibility PartyAddress	addr	0..1	SHOULD	SET<AD>	8964	
financial Responsibility PartyPhone EmailURL	telecom	0..1	SHOULD	SET<TEL>	8965	
	participant	1..1	SHALL		8916	
member Information	@typeCode	1..1	SHALL		8917	2.16.840.1.113883.5.90 (HL7ParticipationType) = COV
	templateId	1..1	SHALL		16812	
	@root	1..1	SHALL		16814	2.16.840.1.113883.10.20.22.4.89
healthPlan CoverageDates	time	0..1	SHOULD	IVL<TS>	8918	
	low	0..1	SHOULD	TS	8919	
	high	0..1	SHOULD	TS	8920	
patient	participantRole	1..1	SHALL		8921	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
memberId	id	1..*	SHALL		8922	
	code	1..1	SHALL		8923	
	@code	0..1	SHOULD		16078	2.16.840.1.113883.1.1 1.18877 (Coverage Role Type Value Set)
patient RelationshipTo Subscriber	code	1..1	SHALL	CE	8924	2.16.840.1.113883.1.1 1.18877 (Coverage Role Type Value Set)
patientAddress	addr	0..1	SHOULD	SET< AD>	8956	
	playingEntity	0..1	SHOULD		8932	
patientName	name	1..1	SHALL		8930	
	participant	0..1	SHOULD		8934	
	@typeCode	1..1	SHALL		8935	2.16.840.1.113883.5.9 0 (HL7ParticipationType) = HDL
	templateId	1..1	SHALL		16813	
	@root	1..1	SHALL		16815	2.16.840.1.113883.10. 20.22.4.90
	time	0..1	MAY	IVL< TS>	8938	
subscriber Information	participantRole	1..1	SHALL		8936	
subscriberId	id	1..*	SHALL		8937	
subscriber Address	addr	0..1	SHOULD	SET< AD>	8925	
healthPlan	entryRelations hip	1..*	SHALL		8939	
	@typeCode	1..1	SHALL		8940	2.16.840.1.113883.5.1 002 (HL7ActRelationshipType) = REFR

1. **SHALL** contain exactly one [1..1] @classCode="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8898).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8899).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8900) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.61" (CONF:10516).

This id is a unique identifier for the policy or program providing the coverage

4. **SHALL** contain at least one [1..*] **id** (CONF:8901).
5. **SHOULD** contain zero or one [0..1] **code** with @xsi:type="CE" (CONF:8903).

- a. The code, if present, **SHOULD** contain zero or one [0..1] **@code** (ValueSet: Health Insurance Type Value Set 2.16.840.1.113883.3.88.12.3221.5.2 **DYNAMIC**) (CONF:15993).
- b. The code, if present, **SHOULD** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet Health Insurance Type Value Set 2.16.840.1.113883.3.88.12.3221.5.2 **DYNAMIC** (CONF:8904).
- 6. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8902).

This performer represents the Payer.

- 7. **SHALL** contain exactly one [1..1] **performer** (CONF:8906) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="PRF" Performer (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8907).
 - b. **SHALL** contain exactly one [1..1] **templateId** (CONF:16808) such that it
 - i. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.87" Payer Performer (CONF:16809).
 - c. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:8908).
 - i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:8909).
 - ii. This assignedEntity **SHOULD** contain zero or one [0..1] **code** (CONF:8914).
 - 1. The code, if present, **SHALL** contain zero or one [0..1] **@code** (ValueSet: HL7FinanciallyResponsiblePartyType 2.16.840.1.113883.1.11.10416 **DYNAMIC**) (CONF:15992).
 - iii. This assignedEntity **MAY** contain zero or one [0..1] **addr** (CONF:8910).
 - 1. The content of addr **SHALL** be a conformant US Realm Address (AD.US.FIELDED) (2.16.840.1.113883.10.20.22.5.2) (CONF:10481).
 - iv. This assignedEntity **MAY** contain zero or one [0..1] **telecom** (CONF:8911).
 - v. This assignedEntity **SHOULD** contain zero or one [0..1] **representedOrganization** (CONF:8912).
 - 1. The representedOrganization, if present, **SHOULD** contain zero or one [0..1] **name** (CONF:8913).

This performer represents the Guarantor.

- 8. **SHOULD** contain zero or one [0..1] **performer**="PRF" Performer (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8961) such that it
 - a. **SHALL** contain exactly one [1..1] **templateId** (CONF:16810) such that it

- i. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.88" Guarantor Performer (CONF:16811).
 - b. **SHOULD** contain zero or one [0..1] **time** (CONF:8963).
 - c. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:8962).
 - i. This assignedEntity **SHALL** contain exactly one [1..1] **code** (CONF:8968).
 - 1. This code **SHALL** contain exactly one [1..1] @code="GUAR" Guarantor (CodeSystem: RoleCode 2.16.840.1.113883.5.111) (CONF:16096).
 - ii. This assignedEntity **SHOULD** contain zero or one [0..1] **addr** (CONF:8964).
 - 1. The content of addr **SHALL** be a conformant US Realm Address (AD.US.FIELDDED) (2.16.840.1.113883.10.20.22.5.2) (CONF:10482).
 - iii. This assignedEntity **SHOULD** contain zero or one [0..1] **telecom** (CONF:8965).
 - iv. **SHOULD** include assignedEntity/assignedPerson/name AND/OR assignedEntity/representedOrganization/name (CONF:8967).
9. **SHALL** contain exactly one [1..1] **participant** (CONF:8916) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="COV" Coverage target (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8917).
 - b. **SHALL** contain exactly one [1..1] **templateId** (CONF:16812) such that it
 - i. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.89" Covered Party Participant (CONF:16814).
 - c. **SHOULD** contain zero or one [0..1] **time** (CONF:8918).
 - i. The time, if present, **SHOULD** contain zero or one [0..1] **low** (CONF:8919).
 - ii. The time, if present, **SHOULD** contain zero or one [0..1] **high** (CONF:8920).
 - d. **SHALL** contain exactly one [1..1] **participantRole** (CONF:8921).
 - i. This participantRole **SHALL** contain at least one [1..*] **id** (CONF:8922).
 - 1. This id is a unique identifier for the covered party member. Implementers **SHOULD** use the same GUID for each instance of a member identifier from the same health plan (CONF:8984).
 - ii. This participantRole **SHALL** contain exactly one [1..1] **code** (CONF:8923).
 - 1. This code **SHOULD** contain zero or one [0..1] @code (ValueSet: Coverage Role Type Value Set

- 2.16.840.1.113883.1.11.18877 **DYNAMIC**
(CONF:16078).
2. This code **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE", where the @code **SHOULD** be selected from ValueSet Coverage Role Type Value Set
2.16.840.1.113883.1.11.18877 **DYNAMIC**
(CONF:8924).
 - iii. This participantRole **SHOULD** contain zero or one [0..1] **addr** (CONF:8956).
 1. The content of addr **SHALL** be a conformant US Realm Address (AD.US.FIELDED)
(2.16.840.1.113883.10.20.22.5.2) (CONF:10484).
 - iv. This participantRole **SHOULD** contain zero or one [0..1] **playingEntity** (CONF:8932).
 1. The playingEntity, if present, **SHALL** contain exactly one [1..1] **name** (CONF:8930).
 - a. If the member name as recorded by the health plan differs from the patient name as recorded in the registration/medication summary (e.g., due to marriage or for other reasons), then the member name **SHALL** be recorded in the name element (CONF:8931).
 2. If the member date of birth as recorded by the health plan differs from the patient date of birth as recorded in the registration/medication summary, then the member date of birth **SHALL** be recorded in sdwg:birthTime. The prefix sdtc: **SHALL** be bound to the namespace "urn:hl7-org:sdtc". The use of the namespace provides a necessary extension to CDA R2 for the use of the birthTime element ([CONF:8933](#)).

When the Subscriber is the patient, the participant element describing the subscriber **SHALL NOT** be present. This information will be recorded instead in the data elements used to record member information.

10. **SHOULD** contain zero or one [0..1] **participant** (CONF:8934) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="HLD" Holder (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) (CONF:8935).
 - b. **SHALL** contain exactly one [1..1] **templateId** (CONF:16813) such that it
 - i. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.90" Policy Holder Participant (CONF:16815).
 - c. **MAY** contain zero or one [0..1] **time** (CONF:8938).
 - d. **SHALL** contain exactly one [1..1] **participantRole** (CONF:8936).
 - i. This participantRole **SHALL** contain at least one [1..*] **id** (CONF:8937).

1. This id is a unique identifier for the subscriber of the coverage (CONF:10120).
 - ii. This participantRole **SHOULD** contain zero or one [0..1] **addr** (CONF:8925).
 1. The content of addr **SHALL** be a conformant US Realm Address (AD.US.FIELDDED) (2.16.840.1.113883.10.20.22.5.2) (CONF:10483).
11. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:8939) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:8940).
 - b. The target of a policy activity with act/entryRelationship/@typeCode="REFR" **SHALL** be an authorization activity (templateId 2.16.840.1.113883.10.20.1.19) OR an act, with act[@classCode="ACT"] and act[@moodCode="DEF"], representing a description of the coverage plan (CONF:8942).
 - c. A description of the coverage plan **SHALL** contain one or more act/id, to represent the plan identifier, and an act/text with the name of the plan (CONF:8943).

Table 235: Health Insurance Type Value Set (excerpt)

Value Set: Health Insurance Type Value Set 2.16.840.1.113883.3.88.12.3221.5.2 DYNAMIC		
Code System(s): ASC X12 2.16.840.1.113883.6.255.1336		
The full value set is available in HITSP C80 (see HITSP.org).		
Code	Code System	Print Name
12	ASC X12	Medicare Secondary Working Aged Beneficiary or Spouse with Employer Group Health Plan
13	ASC X12	Medicare Secondary End-Stage Renal Disease Beneficiary in the 12 month coordination period with an employer's group health plan
14	ASC X12	Medicare Secondary, No-fault Insurance including Auto is Primary
...		

Table 236: Coverage Type Value Set

Value Set: Coverage Role Type Value Set 2.16.840.1.113883.1.11.18877 DYNAMIC		
Code System(s): RoleCode 2.16.840.1.113883.5.111		
Code	Code System	Print Name
FAMDEP	RoleCode	Family dependent
FSTUD	RoleCode	Full-time student
HANDIC	RoleCode	Handicapped dependent
INJ	RoleCode	Injured plaintiff
PSTUD	RoleCode	Part-time student
SELF	RoleCode	Self
SPON	RoleCode	Sponsored dependent
STUD	RoleCode	Student

Table 237: Financially Responsible Party Value Set (excerpt)

Value Set: FinanciallyResponsiblePartyType 2.16.840.1.113883.1.11.10416 DYNAMIC		
Code System(s): RoleCode 2.16.840.1.113883.5.110 http://www.hl7.org/memonly/downloads/v3edition.cfm#V32008		
Code	Code System	Print Name
EMP	RoleCode	employee
GUAR	RoleCode	guarantor
INVSBJ	RoleCode	Investigation Subject
COVPTY	RoleCode	Covered party
...		

Figure 205: Policy activity example

```
<act classCode="ACT" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.61"/>
  <!-- ***** Policy Activity template ***** -->
  <id root="3e676a50-7aac-11db-9fe1-0800200c9a66"/>
  <code code="SELF" codeSystemName="HL7RoleClass"
        codeSystem="2.16.840.1.113883.5.110">
  </code>
  <statusCode code="completed"/>
```

```

<!-- Insurance Company Information -->
<performer typeCode="PRF">
  <time/>
  <assignedEntity>
    <id root="2.16.840.1.113883.19"/>
    <code code="PAYOR" codeSystem="2.16.840.1.113883.5.111"
          codeSystemName="RoleCode"/>
    <addr use="WP">
      <!-- HP is "primary home" from codeSystem
          2.16.840.1.113883.5.1119 -->
      <streetAddressLine>123 Insurance Road</streetAddressLine>
      <city>Blue Bell</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
      <!--US is "United States" from ISO 3166-1 Country Codes:
1.0.3166.1-->
    </addr>
    <telecom value="tel:(781) 555-1515" use="WP"/>
    <representedOrganization>
      <name>Good Health Insurance</name>
      <telecom/>
      <addr/>
    </representedOrganization>
    </assignedEntity>
  </performer>
  <!-- Guarantor Information The person responsible for the final bill. -/
->
<performer typeCode="PRF">
  <time/>
  <assignedEntity>
    <id root="329fcdf0-7ab3-11db-9fe1-0800200c9a66"/>
    <code code="GUAR" codeSystem="2.16.840.1.113883.5.110"
          codeSystemName="HL7RoleClass"/>
    <addr use="HP">
      <streetAddressLine>17 Daws Rd.</streetAddressLine>
      <city>Blue Bell</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
    <telecom value="tel:(781) 555-1212" use="HP"/>
    <assignedPerson>
      <name>
        <prefix>Mr.</prefix>
        <given>Adam</given>
        <given>Frankie</given>
        <family>Everyman</family>
      </name>
    </assignedPerson>
  </assignedEntity>
  </performer>
  <participant typeCode="COV">
    <time>
      <low nullFlavor="UNK"/>
      <high nullFlavor="UNK"/>
    </time>
  </participant>
</performer>

```

```

<participantRole classCode="PAT">
  <id root="14d4a520-7aae-11db-9fe1-0800200c9a66"
    extension="1138345"/>
  <!-- Health plan ID for patient. -->
  <code code="SELF" codeSystem="2.16.840.1.113883.5.111"
    displayName="Self"/>
  <addr use="HP">
    <streetAddressLine>17 Daws Rd.</streetAddressLine>
    <city>Blue Bell</city>
    <state>MA</state>
    <postalCode>02368</postalCode>
    <country>US</country>
  </addr>
  <playingEntity>
    <name>
      <!-- Name is needed if different than health plan name. -->
      <prefix>Mr.</prefix>
      <given>Frank</given>
      <given>A.</given>
      <family>Everyman</family>
    </name>
  </playingEntity>
</participantRole>
</participant>
<participant typeCode="HLD">
  <participantRole>
    <id extension="1138345" root="2.16.840.1.113883.19"/>
    <addr use="HP">
      <streetAddressLine>17 Daws Rd.</streetAddressLine>
      <city>Blue Bell</city>
      <state>MA</state>
      <postalCode>02368</postalCode>
      <country>US</country>
    </addr>
  </participantRole>
</participant>
<entryRelationship typeCode="REFR">
  <act classCode="ACT" moodCode="DEF">
    <templateId root="2.16.840.1.113883.10.20.1.19"/>
    <!-- **** Authorization activity template **** -->
    ...
  </act>
</entryRelationship>
...
</entryRelationship>
</act>

```

6.53 Postprocedure Diagnosis

[act: templateId 2.16.840.1.113883.10.20.22.4.51 (open)]

Table 238: Postprocedure Diagnosis Contexts

Used By:	Contains Entries:
Postprocedure Diagnosis Section (optional)	Problem Observation

The Postprocedure Diagnosis entry encodes the diagnosis or diagnoses discovered or confirmed during the procedure. Often it is the same as the pre-procedure diagnosis or indication.

Table 239: Postprocedure Diagnosis Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
act[templateId/@root = '2.16.840.1.113883.10.20.22.4.51']						
	@classCode	1..1	SHALL		8756	ACT
	@moodCode	1..1	SHALL		8757	EVN
	templateId	1..1	SHALL		16766	
	@root	1..1	SHALL		16767	2.16.840.1.113883.10.20.22.4.51
	code	1..1	SHALL	CE	8758	2.16.840.1.113883.6.1 (LOINC) = 59769-0
	entryRelationship	1..*	SHALL		8759	
	@typeCode	1..1	SHALL		8760	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	observation	1..1	SHALL		15583	

1. **SHALL** contain exactly one [1..1] @classCode="ACT" (CONF:8756).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CONF:8757).
3. **SHALL** contain exactly one [1..1] templateId (CONF:16766) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.51" (CONF:16767).
4. **SHALL** contain exactly one [1..1] code="59769-0" Postprocedure Diagnosis with @xsi:type="CE" (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:8758).
5. **SHALL** contain at least one [1..*] entryRelationship (CONF:8759).
 - a. Such entryRelationships **SHALL** contain exactly one [1..1] @typeCode="SUBJ" Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:8760).
 - b. Such entryRelationships **SHALL** contain exactly one [1..1] [Problem Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.4) (CONF:15583).

Figure 206: Postprocedure diagnosis example

```

<act moodCode="EVN" classCode="ACT">
    <templateId root="2.16.840.1.113883.10.20.22.4.51"/>
    <!-- ** Postprocedure Diagnosis Entry ** -->
    <code code="59769-0" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="Postprocedure Diagnosis"/>
    <entryRelationship typeCode="SUBJ">
        <observation classCode="OBS" moodCode="EVN">
            <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
            <!-- Problem Observation template -->
            ...
        </observation>
    </entryRelationship>
</act>

```

6.54 Precondition for Substance Administration

[precondition: templateId 2.16.840.1.113883.10.20.22.4.25 (open)]

Table 240: Precondition for Substance Administration Contexts

Used By:	Contains Entries:
Medication Activity	
Immunization Activity	

A criterion for administration can be used to record that the medication is to be administered only when the associated criteria are met.

Table 241: Precondition for Substance Administration Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
criterion[templateId/@root = '2.16.840.1.113883.10.20.22.4.25']						
	templateId	1..1	SHALL	SET<II>	7372	
	@root	1..1	SHALL		10517	2.16.840.1.113883.10.20.22.4.25
	code	0..1	SHOULD		16854	
	text	0..1	MAY		7373	
	value	0..1	SHOULD	CD	7369	

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:7372) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.25"** (CONF:10517).
2. **SHOULD** contain zero or one [0..1] **code** (CONF:16854).
3. **MAY** contain zero or one [0..1] **text** (CONF:7373).
4. **SHOULD** contain zero or one [0..1] **value** with @xsi:type="CD" (CONF:7369).

Figure 207: Precondition for substance administration example

```
<precondition typeCode="PRCN">
  <templateId root="2.16.840.1.113883.10.20.22.4.25"/>
  <criterion>
    <code code="ASSERTION"
      codeSystem="2.16.840.1.113883.5.4"
      codeSystemName="HL7ActCode"/>
    <text>...</text>
    <value xsi:type="CD" code="56018004"
      codeSystem="2.16.840.1.113883.6.96"
      codeSystemName="SNOMED CT"
      displayName="Wheezing"/>
  </criterion>
</precondition>
```

6.55 Pregnancy Observation

[observation: templateId 2.16.840.1.113883.10.20.15.3.8 (open)]

Table 242: Pregnancy Observation Contexts

Used By:	Contains Entries:
Social History Section (optional)	Estimated Date of Delivery

This clinical statement represents current and/or prior pregnancy dates enabling investigators to determine if the subject of the case report was pregnant during the course of a condition.

Table 243: Pregnancy Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
Green Pregnancy Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.15.3.8']					
	@classCode	1..1	SHALL		451	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		452	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16768	
	@root	1..1	SHALL		16868	2.16.840.1.113883.10.20.15.3.8
	code	1..1	SHALL	CE	454	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	statusCode	1..1	SHALL		455	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	0..1	SHOULD	TS or IVL< TS>	2018	

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
pregnancy	value	1..1	SHALL	CD	457	2.16.840.1.113883.6.96 (SNOMED-CT) = 77386006
	entryRelationship	0..1	MAY		458	
	@typeCode	1..1	SHALL		459	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	observation	1..1	SHALL		15584	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:451).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem:
ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:452).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:16768) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.15.3.8" (CONF:16868).
4. **SHALL** contain exactly one [1..1] **code="ASSERTION"** Assertion with
@xsi:type="CE" (CodeSystem: ActCode 2.16.840.1.113883.5.4 **STATIC**)
(CONF:454).
5. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed
(CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:455).
6. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:2018).
7. **SHALL** contain exactly one [1..1] **value="77386006"** Pregnant with
@xsi:type="CD" (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96 **STATIC**)
(CONF:457).
8. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:458) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers to
(CodeSystem: HL7ActRelationshipType
2.16.840.1.113883.5.1002 **STATIC**) (CONF:459).
 - b. **SHALL** contain exactly one [1..1] **Estimated Date of Delivery**
(templateId:2.16.840.1.113883.10.20.15.3.1) (CONF:15584).

Figure 208: Pregnancy observation example

```
<observation classCode="OBS" moodCode="EVN">
    <!-- Pregnancy observation template -->
    <templateId root="2.16.840.1.113883.10.20.15.3.8"/>
    <id extension="123456789" root="2.16.840.1.113883.19"/>
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
    <statusCode code="completed"/>
    <effectiveTime>
        <low value="20110410"/>
    </effectiveTime>
    <value xsi:type="CD" code="77386006"
        displayName="pregnant"
        codeSystem="2.16.840.1.113883.6.96"/>
    <entryRelationship typeCode="REFR">
        <!-- Estimated Date of Delivery template -->
        <templateId root="2.16.840.1.113883.10.20.15.3.1"/>
        ...
    </entryRelationship>
</observation>
```

6.56 Preoperative Diagnosis

[act: templateId 2.16.840.1.113883.10.20.22.4.65 (open)]

Table 244: Preoperative Diagnosis Contexts

Used By:	Contains Entries:
Preoperative Diagnosis Section (optional)	Problem Observation

The Preoperative Diagnosis entry encodes the surgical diagnosis or diagnoses assigned to the patient before the surgical procedure and is the reason for the surgery. The preoperative diagnosis is, in the opinion of the surgeon, the diagnosis that will be confirmed during surgery.

Table 245: Preoperative Diagnosis Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.65']					
	@classCode	1..1	SHALL		10090	ACT
	@moodCode	1..1	SHALL		10091	EVN
	templateId	1..1	SHALL		16770	
	@root	1..1	SHALL		16771	2.16.840.1.113883.10.20.22.4.65
	code	1..1	SHALL	CE	10092	2.16.840.1.113883.6.1 (LOINC) = 10219-4
	entryRelationship	1..*	SHALL		10093	
	@typeCode	1..1	SHALL		10094	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	observation	1..1	SHALL		15605	

1. **SHALL** contain exactly one [1..1] `@classCode="ACT"` (CONF:10090).
2. **SHALL** contain exactly one [1..1] `@moodCode="EVN"` (CONF:10091).
3. **SHALL** contain exactly one [1..1] `templateId` (CONF:16770) such that it
 - a. **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.22.4.65"` (CONF:16771).
4. **SHALL** contain exactly one [1..1] `code="10219-4"` Preoperative Diagnosis with `@xsi:type="CE"` (CodeSystem: LOINC 2.16.840.1.113883.6.1) (CONF:10092).
5. **SHALL** contain at least one [1..*] `entryRelationship` (CONF:10093).
 - a. Such entryRelationships **SHALL** contain exactly one [1..1] `@typeCode="SUBJ"` Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:10094).
 - b. Such entryRelationships **SHALL** contain exactly one [1..1] `Problem Observation` (templateId:2.16.840.1.113883.10.20.22.4.4) (CONF:15605).

Figure 209: Preoperative diagnosis example

```

<act moodCode="EVN" classCode="ACT">
    <templateId root="2.16.840.1.113883.10.20.22.4.65"/>
    <!-- ** Preoperative Diagnosis Entry ** -->
    <code code="10219-4" codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        displayName="Preoperative Diagnosis"/>
    <entryRelationship typeCode="SUBJ">
        <observation classCode="OBS" moodCode="EVN">
            <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
            <!-- Problem Observation template -->
            ...
        </observation>
    </entryRelationship>
</act>

```

6.57 Pressure Ulcer Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.70 (open)]

Table 246: Pressure Ulcer Observation Contexts

Used By:	Contains Entries:
Functional Status Section (optional)	

The pressure ulcer observation contains details about the pressure ulcer such as the stage of the ulcer, location, and dimensions. If the pressure ulcer is a diagnosis, you may find this on the problem list. An example of how this would appear is in the [Problem Section](#).

Table 247: Pressure Ulcer Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.70']					
	@classCode	1..1	SHALL		14383	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14384	2.16.840.1.113883.5.1001 (ActMood) = EVN
	@negationInd	0..1	MAY		14385	
	templateId	1..1	SHALL		14387	
	@root	1..1	SHALL		14388	2.16.840.1.113883.10.20.22.4.70
	id	1..*	SHALL		14389	
	code	1..1	SHALL		14759	
	@code	1..1	SHOULD		14760	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	text	0..1	SHOULD		14391	
	reference	0..1	SHOULD		14392	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	@value	1..1	SHALL		15585	
	statusCode	1..1	SHALL		14394	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL		14395	
	value	1..1	SHALL	CD	14396	2.16.840.1.113883.11.20.9.35 (Pressure Ulcer Stage)
	@nullFlavor	0..1	MAY		14397	
	targetSiteCode	1..*	SHOULD		14797	
	@code	1..1	SHALL		14798	2.16.840.1.113883.11.20.9.36 (Pressure Point)
	qualifier	1..1	MAY		14799	
	name	1..1	SHALL		14800	
	@code	1..1	MAY		14801	2.16.840.1.113883.6.96 (SNOMED-CT) = 272741003
	value	1..1	SHALL		14802	
	@code	1..1	SHOULD		14803	2.16.840.1.113883.11.20.9.37 (TargetSite Qualifiers)
	entry Relationship	0..1	SHOULD		14410	
	@typeCode	1..1	SHALL		14411	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	observation	1..1	SHALL		14619	
	@classCode	1..1	SHALL		14685	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14686	2.16.840.1.113883.5.1001 (ActMood) = EVN
	code	1..1	SHALL		14620	
	@code	1..1	SHALL		14621	2.16.840.1.113883.6.96 (SNOMED-CT) = 401238003
	value	1..1	SHALL	PQ	14622	
	entry Relationship	0..1	SHOULD		14601	
	@typeCode	1..1	SHALL		14602	COMP
	observation	1..1	SHALL		14623	
	@classCode	1..1	SHALL		14687	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14688	2.16.840.1.113883.5.1001 (ActMood) = EVN
	code	1..1	SHALL		14624	
	@code	1..1	SHALL		14625	2.16.840.1.113883.6.96 (SNOMED-CT) = 401239006
	value	1..1	SHALL	PQ	14626	
	entry Relationship	0..1	SHOULD		14605	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	@typeCode	1..1	SHALL		14606	COMP
	observation	1..1	SHALL		14627	
	@classCode	1..1	SHALL		14689	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14690	2.16.840.1.113883.5.1001 (ActMood) = EVN
	code	1..1	SHALL		14628	
	@code	1..1	SHALL		14629	2.16.840.1.113883.6.96 (SNOMED-CT) = 425094009
	value	1..1	SHALL	PQ	14630	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14383).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14384).
3. **MAY** contain zero or one [0..1] **@negationInd** (CONF:14385).
 - a. NegationInd="true" **SHALL** be used to represent that the problem was not observed (CONF:14386).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:14387) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.70"** (CONF:14388).
5. **SHALL** contain at least one [1..*] **id** (CONF:14389).
6. **SHALL** contain exactly one [1..1] **code** (CONF:14759).
 - a. This code **SHOULD** contain exactly one [1..1] **@code="ASSERTION"** Assertion (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:14760).
7. **SHOULD** contain zero or one [0..1] **text** (CONF:14391).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:14392).
 - i. The reference, if present, **SHALL** contain exactly one [1..1] **@value** (CONF:15585).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15586).
 8. **SHALL** contain exactly one [1..1] **statusCode="completed"** (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14394).
 9. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:14395).
 10. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the @code **SHOULD** be selected from ValueSet Pressure Ulcer Stage 2.16.840.1.113883.11.20.9.35 (CONF:14396).
 - a. This value **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:14397).

- i. If the stage unknown or the SNOMED code is unknown, @nullFlavor **SHOULD** be “UNK”. If the code is something other than SNOMED, @nullFlavor **SHOULD** be “OTH” and the other code **SHOULD** be placed in the translation element (CONF:14398).
11. **SHOULD** contain at least one [1..*] **targetSiteCode** (CONF:14797).
- a. Such targetSiteCodes **SHALL** contain exactly one [1..1] **@code**, which **SHOULD** be selected from ValueSet Pressure Point 2.16.840.1.113883.11.20.9.36 (CONF:14798).
 - b. Such targetSiteCodes **MAY** contain exactly one [1..1] **qualifier** (CONF:14799).
 - i. This qualifier **SHALL** contain exactly one [1..1] **name** (CONF:14800).
 - 1. This name **MAY** contain exactly one [1..1] **@code="272741003"** laterality (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14801).
 - ii. This qualifier **SHALL** contain exactly one [1..1] **value** (CONF:14802).
 - 1. This value **SHOULD** contain exactly one [1..1] **@code**, which **SHOULD** be selected from ValueSet TargetSite Qualifiers 2.16.840.1.113883.11.20.9.37 (CONF:14803).
12. **SHOULD** contain zero or one [0..1] **entryRelationship** (CONF:14410) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:14411).
 - b. **SHALL** contain exactly one [1..1] **observation** (CONF:14619).
 - i. This observation **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14685).
 - ii. This observation **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14686).
 - iii. This observation **SHALL** contain exactly one [1..1] **code** (CONF:14620).
 - 1. This code **SHALL** contain exactly one [1..1] **@code="401238003"** Length of Wound (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14621).
 - iv. This observation **SHALL** contain exactly one [1..1] **value** with **@xsi:type="PQ"** (CONF:14622).
13. **SHOULD** contain zero or one [0..1] **entryRelationship** (CONF:14601) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** (CONF:14602).
 - b. **SHALL** contain exactly one [1..1] **observation** (CONF:14623).

- i. This observation **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14687).
 - ii. This observation **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14688).
 - iii. This observation **SHALL** contain exactly one [1..1] **code** (CONF:14624).
 - 1. This code **SHALL** contain exactly one [1..1] **@code="401239006"** Width of Wound (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14625).
 - iv. This observation **SHALL** contain exactly one [1..1] **value** with **@xsi:type="PQ"** (CONF:14626).
14. **SHOULD** contain zero or one [0..1] **entryRelationship** (CONF:14605) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** (CONF:14606).
 - b. **SHALL** contain exactly one [1..1] **observation** (CONF:14627).
 - i. This observation **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14689).
 - ii. This observation **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14690).
 - iii. This observation **SHALL** contain exactly one [1..1] **code** (CONF:14628).
 - 1. This code **SHALL** contain exactly one [1..1] **@code="425094009"** Depth of Wound (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96) (CONF:14629).
 - iv. This observation **SHALL** contain exactly one [1..1] **value** with **@xsi:type="PQ"** (CONF:14630).

Table 248 Pressure Ulcer Stage Value Set

Value Set: Pressure Ulcer Stage 2.16.840.1.113883.11.20.9.35 DYNAMIC Code System: SNOMED CT 2.16.840.1.113883.6.96		
Descriptions: This value set enumerates the type of a pressure ulcer.		
Code	Code System	Print Name
421076008	SNOMED CT	Pressure Ulcer Stage 1
420324007	SNOMED CT	Pressure Ulcer Stage 2
421927004	SNOMED CT	Pressure Ulcer Stage 3
420597008	SNOMED CT	Pressure Ulcer Stage 4
421594008	SNOMED CT	Nonstageable pressure ulcer

The Pressure Point Value Set contains a list of body structures from the Pressure Ulcer Prevention Domain Analysis Model (DAM), Informative Ballot published May 2011³⁵ by HL7 combined with a list of structures suggested in the DAM currently available on HL7.³⁶ HL7 is consulting with the National Skin Assessment team to reconcile the DAM. The vocabulary is in review by the International Health Terminology Standards Development Organisation (IHTSDO) Nursing Sig for international standardization.

Table 249: Pressure Point Value Set

Value Set: Pressure Point 2.16.840.1.113883.11.20.9.36 DYNAMIC Code System: SNOMED CT 2.16.840.1.113883.6.96		
Description: This value set represents points on the body that are susceptible to pressure ulcer development		
Code (CID)	Code System	Print Name
79951008	SNOMED CT	skin of occipital region (body structure)
23747009	SNOMED CT	skin structure of chin (body structure)
76552005	SNOMED CT	skin structure of shoulder (body structure)
45980000	SNOMED CT	skin structure of scapular region of back (body structure)
74757004	SNOMED CT	skin structure of elbow (body structure)
51027004	SNOMED CT	skin structure of sacral region (body structure)
304037003	SNOMED CT	thoracic region back structure (body structure)
286591006	SNOMED CT	skin of lumbar region (body structure)
49812005	SNOMED CT	skin structure of hip (body structure)
29850006	SNOMED CT	iliac crest structure (body structure)*
22180002	SNOMED CT	skin structure of buttock (body structure)
63464009	SNOMED CT	skin structure of knee (body structure)
84607009	SNOMED CT	skin structure of heel (body structure)
67269001	SNOMED CT	skin structure of ankle (body structure)
50938007	SNOMED CT	skin structure of sacrococcygeal region (body structure)
181512003	SNOMED CT	skin of dorsal region (body structure)
1902009	SNOMED CT	skin structure of ear (body structure)
36141000	SNOMED CT	skin structure of cheek (body structure)
113179006	SNOMED CT	skin structure of nose (body structure)
6141000	SNOMED CT	skin structure of cheek (body structure)
113179006	SNOMED CT	skin structure of nose (body structure)
1797002	SNOMED CT	structure of anterior naris (body structure)
...		

*mapped to parent and not to “posterior” iliac crest structure

35

http://wiki.hl7.org/images/b/be/PressureUlcerPreventionDomainAnalysisModel_May2011.pdf

Accessed May 2, 2012

36 Domain Analysis Model, HL7 <http://pressureulcerpreventionmodel.com/DAM20110325/>
Accessed May 2, 2012.

Table 250: Target Site Qualifiers Value Set

Value Set: TargetSite Qualifiers 2.16.840.1.113883.11.20.9.37 DYNAMIC Code System: SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Print Name
255549009	SNOMED CT	anterior
7771000	SNOMED CT	left
255561001	SNOMED CT	medial
255551008	SNOMED CT	posterior
24028007	SNOMED CT	right

Figure 210: Pressure ulcer observation example

```
<entry typeCode="DRIV">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.70"/>
    <!-- Pressure Ulcer Observation in Plan of Care template -->
    <id root="e2292075-9183-4a25-b8c3-df8521130443"/>
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
      <statusCode code="completed"/>
    <effectiveTime value="20120328"/>
    <value xsi:type="CD" code="421927004"
codeSystem="2.16.840.1.113883.6.96"
      displayName="Pressure ulcer stage 3"/>
    <targetSiteCode code="76552005" codeSystem="2.16.840.1.113883.6.96"
      displayName="skin structure of shoulder">
      <qualifier>
        <name code="272741003" displayName="Laterality"/>
        <value code="7771000" displayName="Left"/>
      </qualifier>
    </entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.70"/>
      <id root="737b4094-ebb1-41ed-8fcfd-f3c53f649e3b"/>
      <code code="401239006" codeSystem="2.16.840.1.113883.6.96"
        displayName="Width of Wound"/>
      <statusCode code="completed"/>
      <value xsi:type="PQ" value="1" unit="[in_i]"/>
    </observation>
  </entryRelationship>
  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.70"/>
      <id root="737b4094-ebb1-41ed-8fcfd-f3c53f649e3b"/>
      <code code="401238003" codeSystem="2.16.840.1.113883.6.96"
        displayName="Length of Wound"/>
      <statusCode code="completed"/>
      <value xsi:type="PQ" value="2" unit="[in_i]"/>
    </observation>
  </entryRelationship>
  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.70"/>
      <id root="737b4094-ebb1-41ed-8fcfd-f3c53f649e3b"/>
      <code code="425094009" codeSystem="2.16.840.1.113883.6.96"
        displayName="Depth of Wound"/>
      <statusCode code="completed"/>
      <value xsi:type="PQ" value="0.5" unit="[in_i]"/>
    </observation>
  </entryRelationship>
```

6.58 Problem Concern Act (Condition)

[act: templateId 2.16.840.1.113883.10.20.22.4.3 (open)]

Table 251: Problem Concern Act (Condition) Contexts

Used By:	Contains Entries:
Problem Section (entries optional)	Problem Observation
Problem Section (entries required)	

Observations of problems or other clinical statements captured at a point in time are wrapped in a "Concern" act, which represents the ongoing process tracked over time. This allows for binding related observations of problems. For example, the observation of "Acute MI" in 2004 can be related to the observation of "History of MI" in 2006 because they are the same concern. The conformance statements in this section define an outer "problem act" (representing the "Concern") that can contain a nested "problem observation" or other nested clinical statements.

Table 252: Problem Concern Act (Condition) Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
act[templateId/@root = '2.16.840.1.113883.10.20.22.4.3']						
	@classCode	1..1	SHALL		9024	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		9025	2.16.840.1.113883.5.1001 (ActMood) = EVN
	id	1..*	SHALL	II	9026	
	code	1..1	SHALL	CD	9027	
	@code	1..1	SHALL		9440	2.16.840.1.113883.5.6 (HL7ActClass) = CONC
	statusCode	1..1	SHALL	CS	9029	2.16.840.1.113883.11.20.9.19 (ProblemAct statusCode)
	effectiveTime	1..1	SHALL	TS or IVL<TS>	9030	
	low	1..1	SHALL	TS	9032	
	high	0..1	SHOULD	TS	9033	
	entryRelationship	1..*	SHALL		9034	
	@typeCode	1..1	SHALL		9035	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	observation	1..1	SHALL		15980	

1. **SHALL** contain exactly one [1..1] @classCode="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9024).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9025).

3. **SHALL** contain exactly one [1..1] **templateId** (CONF:16772) such that it
 - a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.4.3" (CONF:16773).
 4. **SHALL** contain at least one [1..*] **id** (CONF:9026).
 5. **SHALL** contain exactly one [1..1] **code** (CONF:9027).
 - a. This code **SHALL** contain exactly one [1..1] @code="CONC" Concern (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9440).
 6. **SHALL** contain exactly one [1..1] **statusCode**, where the @code **SHALL** be selected from ValueSet [ProblemAct statusCode](#) 2.16.840.1.113883.11.20.9.19 **STATIC** 2011-09-09 (CONF:9029).
- The effectiveTime element records the starting and ending times during which the concern was active on the Problem List.
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:9030).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:9032).
 - b. This effectiveTime **SHOULD** contain zero or one [0..1] **high** (CONF:9033).
 8. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:9034) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="SUBJ" Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9035).
 - b. **SHALL** contain exactly one [1..1] [Problem Observation](#) (2.16.840.1.113883.10.20.22.4.4) (CONF:15980).

Figure 211: Problem concern act (condition) example

```
<entry typeCode="DRIV">
  <act classCode="ACT" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.3"/>
    <id root="36e3e930-7b14-11db-9fe1-0800200c9a66"/>
    <code code="CONC" codeSystem="2.16.840.1.113883.5.6"/>
    <statusCode code="active"/>
    <effectiveTime>
      <low value="20090902"/>
    </effectiveTime>
    <entryRelationship typeCode="SUBJ">
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
        <!-- Problem Observation template-->
        ...
      </observation>
    </entryRelationship>
  </act>
</entry>
```

6.59 Problem Observation

[Observation: templateId 2.16.840.1.113883.10.20.22.4.4 (open)]

Table 253: Problem Observation Contexts

Used By:	Contains Entries:
Hospital Discharge Diagnosis Hospital Admission Diagnosis Procedure Findings Section Postprocedure Diagnosis History of Past Illness Section Complications Section Problem Concern Act (Condition) Functional Status Section Preoperative Diagnosis	Age Observation Health Status Observation Problem Status

A problem is a clinical statement that a clinician has noted. In health care it is a condition that requires monitoring or diagnostic, therapeutic, or educational action. It also refers to any unmet or partially met basic human need.

A Problem Observation is required to be wrapped in an act wrapper in locations such as the Problem Section, Allergies Section, and Hospital Discharge Diagnosis Section, where the type of problem needs to be identified or the condition tracked.

A Problem Observation can be a valid "standalone" template instance in cases where a simple problem observation is to be sent.

The negationInd attribute, if true, specifies that the problem indicated was observed to not have occurred (which is subtly but importantly different from having not been observed). NegationInd='true' is an acceptable way to make a clinical assertion that something did not occur, for example, "no diabetes".

Table 254: Problem Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Problem Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.4']					
	@classCode	1..1	SHALL		9041	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		9042	2.16.840.1.113883.5.1001 (ActMood) = EVN
	@negationInd	0..1	MAY		10139	
	templateId	1..1	SHALL		14926	
	@root	1..1	SHALL		14927	2.16.840.1.113883.10.20. 22.4.4
	id	1..*	SHALL		9043	
problem	code	1..1	SHALL		9045	2.16.840.1.113883.3.88.1

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Type						2.3221.7.2 (Problem Type)
problem Name	text	0..1	SHOULD		9185	
	reference	0..1	SHOULD		15587	
	@value	1..1	SHALL		15588	
	statusCode	1..1	SHALL		9049	2.16.840.1.113883.5.14 (ActStatus) = completed
problem Date	effectiveTime	0..1	SHOULD	TS or IVL<T S>	9050	
	low	1..1	SHALL		15603	
	high	0..1	SHOULD		15604	
problem Code	value	1..1	SHALL	CD	9058	2.16.840.1.113883.3.88.1 2.3221.7.4 (Problem)
	@nullFlavor	0..1	MAY		10141	
	translation	0..*	MAY		16749	
	@code	0..1	MAY		16750	2.16.840.1.113883.6.3 (ICD10)
ageAtOnset	entryRelationship	0..1	MAY		9059	
	@typeCode	1..1	SHALL		9060	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		9069	true
	observation	1..1	SHALL		15590	
problem Status	entryRelationship	0..1	MAY		9063	
	@typeCode	1..1	SHALL		9068	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	observation	1..1	SHALL		15591	
	entryRelationship	0..1	MAY		9067	
	@typeCode	1..1	SHALL		9064	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
	observation	1..1	SHALL		15592	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9041).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 STATIC) (CONF:9042).
3. **MAY** contain zero or one [0..1] @negationInd (CONF:10139).
 - a. Use negationInd="true" to indicate that the problem was not observed (CONF:16880).
4. **SHALL** contain exactly one [1..1] templateId (CONF:14926) such that it

- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.4" (CONF:14927).
- 5. **SHALL** contain at least one [1..*] **id** (CONF:9043).
- 6. **SHALL** contain exactly one [1..1] **code**, which **SHOULD** be selected from [ValueSet Problem Type 2.16.840.1.113883.3.88.12.3221.7.2 STATIC 2012-06-01](#) (CONF:9045).
- 7. **SHOULD** contain zero or one [0..1] **text** (CONF:9185).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15587).
 - i. The reference, if present, **SHALL** contain exactly one [1..1] @value (CONF:15588).
 - 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15589).
- 8. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:9049).
- 9. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9050).
 - a. The effectiveTime, if present, **SHALL** contain exactly one [1..1] **low** (CONF:15603).
 - i. This field represents the onset date (CONF:16882).
 - b. The effectiveTime, if present, **SHOULD** contain zero or one [0..1] **high** (CONF:15604).
 - i. This field represents the resolution date (CONF:16883).
 - c. If the problem is known to be resolved, but the date of resolution is not known, then the high element **SHALL** be present, and the nullFlavor attribute **SHALL** be set to 'UNK'. Therefore, the existence of an high element within a problem does indicate that the problem has been resolved (CONF:16881).
- 10. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the @code **SHOULD** be selected from [ValueSet Problem 2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC](#) (CONF:9058).
 - a. This value **MAY** contain zero or one [0..1] @nullFlavor (CONF:10141).
 - i. If the diagnosis is unknown or the SNOMED code is unknown, @nullFlavor **SHOULD** be "UNK". If the code is something other than SNOMED, @nullFlavor **SHOULD** be "OTH" and the other code **SHOULD** be placed in the translation element (CONF:10142).
 - b. This value **MAY** contain zero or more [0..*] **translation** (CONF:16749).
 - i. The translation, if present, **MAY** contain zero or one [0..1] @code (CodeSystem: ICD10 2.16.840.1.113883.6.3) (CONF:16750).
- 11. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:9059) such that it

- a. **SHALL** contain exactly one [1..1] @typeCode="SUBJ" Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:9060).
 - b. **SHALL** contain exactly one [1..1] @inversionInd="true" True (CONF:9069).
 - c. **SHALL** contain exactly one [1..1] [Age Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.31) (CONF:15590).
12. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:9063) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:9068).
 - b. **SHALL** contain exactly one [1..1] [Problem Status](#) (templateId:2.16.840.1.113883.10.20.22.4.6) (CONF:15591).
13. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:9067) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:9064).
 - b. **SHALL** contain exactly one [1..1] [Health Status Observation](#) (templateId:2.16.840.1.113883.10.20.22.4.5) (CONF:15592).

Figure 212: Problem observation example

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
  <!-- Problem Observation template -->
  <id root="d11275e7-67ae-11db-bd13-0800200c9a66"/>
  <code code="409586006"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Complaint"/>
  <text>
    ...
  </text>
  <statusCode code="completed"/>
  <effectiveTime>
    <low value="1950"/>
  </effectiveTime>
  <value xsi:type="CD" code="195967001"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Asthma"/>
  <entryRelationship typeCode="SUBJ" inversionInd="true">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.31"/>
      <!-- Age observation template -->
      ...
    </observation>
  </entryRelationship>

```

```

<entryRelationship typeCode="REFR" inversionInd="true">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.5"/>
    <!-- Health status observation template -->
    ...
  </observation>
</entryRelationship>
</observation>

```

Figure 213: Problem observation with specific problem not observed

```

<observation classCode="OBS" moodCode="EVN" nullFlavor="NI">
  <code code="ASSERTION"
        codeSystem="2.16.840.1.113883.5.4"
        codeSystemName="HL7ActCode" />
  <text> No known problems</text>
  <statusCode code="completed" />
  <value xsi:type="CD" code="195967001"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT"
        displayName="Asthma" />
</observation>

```

Figure 214: Problem observation for no known problems

```

<observation classCode="OBS" moodCode="EVN" negationInd="true">
  <!-- Problem Observation template -->
  <templateId root="2.16.840.1.113883.10.20.22.4.4" />
  <code code="ASSERTION"
        codeSystem="2.16.840.1.113883.5.4"
        codeSystemName="HL7ActCode" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="55607006"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT"
        displayName="Problem" />
</observation>

```

Figure 215: NullFlavor example

```

<value nullFlavor="OTH">
  <translation code="1234"
              displayName="Example"
              codeSystem="2.16.840.1.113883.19.5"
              codeSystemName="Non-SNOMED"/>
</value>

```

6.60 Problem Status

[observation: templateId 2.16.840.1.113883.10.20.22.4.6 (open)]

Table 255: Problem Status Contexts

Used By:	Contains Entries:
Problem Observation	

The Problem Status records whether the indicated problem is active, inactive, or resolved.

Table 256: Problem Status Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.6']						
	@classCode	1..1	SHALL		7357	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7358	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7359	
	@root	1..1	SHALL		10518	2.16.840.1.113883.10.20.22.4.6
	code	1..1	SHALL	CE	7361	2.16.840.1.113883.6.1 (LOINC) = 33999-4
	text	0..1	SHOULD		7362	
	reference	0..1	SHOULD		15593	
	@value	1..1	SHALL		15594	
	statusCode	1..1	SHALL		7364	2.16.840.1.113883.5.14 (ActStatus) = completed
	value	1..1	SHALL	CD	7365	2.16.840.1.113883.3.88.12.80.68 (HITSPProblemStatus)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:7357).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:7358).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7359) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.6"** (CONF:10518).
4. **SHALL** contain exactly one [1..1] **code="33999-4"** Status with **@xsi:type="CE"** (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**) (CONF:7361).
5. **SHOULD** contain zero or one [0..1] **text** (CONF:7362).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15593).

- i. The reference, if present, **SHALL** contain exactly one [1..1] **@value** (CONF:15594).
 - 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15595).
- 6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:7364).
- 7. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the @code **SHALL** be selected from ValueSet HITSPProblemStatus 2.16.840.1.113883.3.88.12.80.68 **DYNAMIC** (CONF:7365).

Figure 216: Problem status example

```
<observation classCode="OBS" moodCode="EVN">
  <!-- Status observation template -->
  <templateId root="2.16.840.1.113883.10.20.22.4.6"/>
  <code code="33999-4"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="Status"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="55561003"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Active"/>
</observation>
```

6.61 Procedure Activity Act

[act: templateId 2.16.840.1.113883.10.20.22.4.12 (open)]

Table 257: Procedure Activity Act Contexts

Used By:	Contains Entries:
Procedures Section (entries required) Procedures Section (entries optional)	Indication Instructions Medication Activity Service Delivery Location

The common notion of "procedure" is broader than that specified by the HL7 Version 3 Reference Information Model (RIM). Therefore procedure templates can be represented with various RIM classes: act (e.g., dressing change), observation (e.g., EEG), procedure (e.g. splenectomy).

This clinical statement represents any procedure that cannot be classified as an observation or a procedure according to the HL7 RIM. Examples of these

procedures are a dressing change, teaching or feeding a patient or providing comfort measures.

Table 258: Procedure Activity Act Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Procedure Activity Act	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.12']					
	@classCode	1..1	SHALL		8289	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		8290	2.16.840.1.113883.11.20.9.18 (MoodCodeEvnInt)
	templateId	1..1	SHALL	SET<II>	8291	
	@root	1..1	SHALL		10519	2.16.840.1.113883.10.20.22.4.12
procedure Id	id	1..*	SHALL		8292	
procedure Type	code	1..1	SHALL	CE	8293	
procedure FreeText Type	originalText	0..1	SHOULD		8295	
	reference	0..1	MAY		15596	
	@value	0..1	MAY		15597	
	statusCode	1..1	SHALL		8298	2.16.840.1.113883.11.20.9.22 (ProcedureAct statusCode)
procedure DateTime	effectiveTime	0..1	SHOULD	TS or IVL<TS>	8299	
	priorityCode	0..1	MAY		8300	2.16.840.1.113883.1.11.16866 (ActPriority)
	performer	0..*	SHOULD		8301	
procedure Performer	assignedEntity	1..1	SHALL		8302	
	id	1..*	SHALL		8303	
	addr	1..1	SHALL	SET<AD>	8304	
	telecom	1..1	SHALL	SET<TE L>	8305	
	represented Organization	0..1	SHOULD		8306	
	id	0..*	SHOULD		8307	
	name	0..*	MAY	PN	8308	
	telecom	1..1	SHALL	SET<TE L>	8310	
	addr	1..1	SHALL	SET<AD>	8309	
	participant	0..*	MAY		8311	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	@typeCode	1..1	SHALL		8312	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = LOC
	participantRole	1..1	SHALL		15599	
	entry Relationship	0..*	MAY		8314	
	@typeCode	1..1	SHALL		8315	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	@inversionInd	1..1	SHALL		8316	true
	encounter	1..1	SHALL		8317	
	@classCode	1..1	SHALL		8318	2.16.840.1.113883.5.6 (HL7ActClass) = ENC
	@moodCode	1..1	SHALL		8319	2.16.840.1.113883.5.1001 (ActMood) = EVN
	id	1..1	SHALL		8320	
	entry Relationship	0..1	MAY		8322	
	@typeCode	1..1	SHALL		8323	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		8324	true
	act	1..1	SHALL		15600	
	entry Relationship	0..*	MAY		8326	
	@typeCode	1..1	SHALL		8327	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		15601	
	entry Relationship	0..1	MAY		8329	
	@typeCode	1..1	SHALL		8330	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	substance Administration	1..1	SHALL		15602	

1. **SHALL** contain exactly one [1..1] @classCode="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:8289).
2. **SHALL** contain exactly one [1..1] @moodCode, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03 (CONF:8290).
3. **SHALL** contain exactly one [1..1] templateId (CONF:8291) such that it

- a. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.22.4.12" (CONF:10519).
- 4. **SHALL** contain at least one [1..*] **id** (CONF:8292).
- 5. **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE" (CONF:8293).
 - a. This code **SHOULD** contain zero or one [0..1] **originalText** (CONF:8295).
 - i. The originalText, if present, **MAY** contain zero or one [0..1] **reference** (CONF:15596).
 - 1. The reference, if present, **MAY** contain zero or one [0..1] **@value** (CONF:15597).
 - a. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15598).
 - b. This code in a procedure activity observation **SHOULD** be selected from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96) (CONF:8294).
 - 6. **SHALL** contain exactly one [1..1] **statusCode**, which **SHALL** be selected from ValueSet ProcedureAct statusCode 2.16.840.1.113883.11.20.9.22 **DYNAMIC** (CONF:8298).
 - 7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:8299).
 - 8. **MAY** contain zero or one [0..1] **priorityCode**, which **SHALL** be selected from ValueSet ActPriority 2.16.840.1.113883.1.11.16866 **DYNAMIC** (CONF:8300).
 - 9. **SHOULD** contain zero or more [0..*] **performer** (CONF:8301).
 - a. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:8302).
 - i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:8303).
 - ii. This assignedEntity **SHALL** contain exactly one [1..1] **addr** (CONF:8304).
 - iii. This assignedEntity **SHALL** contain exactly one [1..1] **telecom** (CONF:8305).
 - iv. This assignedEntity **SHOULD** contain zero or one [0..1] **representedOrganization** (CONF:8306).
 - 1. The representedOrganization, if present, **SHOULD** contain zero or more [0..*] **id** (CONF:8307).
 - 2. The representedOrganization, if present, **MAY** contain zero or more [0..*] **name** (CONF:8308).
 - 3. The representedOrganization, if present, **SHALL** contain exactly one [1..1] **telecom** (CONF:8310).
 - 4. The representedOrganization, if present, **SHALL** contain exactly one [1..1] **addr** (CONF:8309).
 - 10. **MAY** contain zero or more [0..*] **participant** (CONF:8311).

- a. The participant, if present, **SHALL** contain exactly one [1..1] **@typeCode="LOC"** Location (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8312).
 - b. The participant, if present, **SHALL** contain exactly one [1..1] **Service Delivery Location** (templateId:2.16.840.1.113883.10.20.22.4.32) (CONF:15599).
11. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:8314).
- a. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode="COMP"** Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8315).
 - b. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@inversionInd="true"** true (CONF:8316).
 - c. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **encounter** (CONF:8317).
 - i. This encounter **SHALL** contain exactly one [1..1] **@classCode="ENC"** Encounter (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:8318).
 - ii. This encounter **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:8319).
 - iii. This encounter **SHALL** contain exactly one [1..1] **id** (CONF:8320).
 - 1. Set the encounter ID to the ID of an encounter in another section to signify they are the same encounter (CONF:16849).
12. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8322).
- a. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8323).
 - b. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@inversionInd="true"** true (CONF:8324).
 - c. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Instructions** (templateId:2.16.840.1.113883.10.20.22.4.20) (CONF:15600).
13. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:8326).
- a. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8327).
 - b. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Indication** (templateId:2.16.840.1.113883.10.20.22.4.19) (CONF:15601).
14. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8329).
- a. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode="COMP"** Has Component (CodeSystem:

HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**)
 (CONF:8330).

- b. The entryRelationship, if present, **SHALL** contain exactly one [1..1] [Medication Activity](#)
 (templateId:2.16.840.1.113883.10.20.22.4.16) (CONF:15602).

Table 259: Procedure Act Status Code Value Set

Value Set: ProcedureAct statusCode 2.16.840.1.113883.11.20.9.22 DYNAMIC		
Code System(s): ActStatus 2.16.840.1.113883.5.14		
Description: A ValueSet of HL7 actStatus codes for use with a procedure activity		
Code	Code System	Print Name
completed	ActStatus	Completed
active	ActStatus	Active
aborted	ActStatus	Aborted
cancelled	ActStatus	Cancelled

Table 260: Act Priority Value Set

Value Set: ActPriority 2.16.840.1.113883.1.11.16866 DYNAMIC		
Code System(s): ActPriority 2.16.840.1.113883.5.7		
Description: A code or set of codes (e.g., for routine, emergency,) specifying the urgency under which the Act happened, can happen, is happening, is intended to happen, or is requested/demanded to happen.		
Code	Code System	Print Name
A	ActPriority	ASAP
CR	ActPriority	Callback results
CS	ActPriority	Callback for scheduling
CSP	ActPriority	Callback placer for scheduling
CSR	ActPriority	Contact recipient for scheduling
EL	ActPriority	Elective
EM	ActPriority	Emergency
P	ActPriority	Preoperative
PRN	ActPriority	As needed
R	ActPriority	Routine
RR	ActPriority	Rush reporting
S	ActPriority	Stat
T	ActPriority	Timing critical
UD	ActPriority	Use as directed
UR	ActPriority	Urgent

Figure 217: Procedure activity act example

```
<act classCode="ACT" moodCode="INT">
  <templateId root="2.16.840.1.113883.10.20.22.4.12"/>
  <id root="1.2.3.4.5.6.7.8" extension="1234567"/>
  <code code="80146002"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Appendectomy">
    <originalText>
      <reference value="#proc1"/>
    </originalText>
  </code>
  <statusCode code="completed"/>
  <effectiveTime value="20110203"/>
  <priorityCode code="CR"
    codeSystem="2.16.840.1.113883.5.7"
    codeSystemName="HL7ActPriority"
    displayName="Callback results"/>
  <performer>
    <assignedEntity>
      <id root="1.2.3.4" extension="1234"/>
      <addr>
        <streetAddressLine>17 Daws Rd.</streetAddressLine>
        <city>Blue Bell</city>
        <state>MA</state>
        <postalCode>02368</postalCode>
        <country>US</country>
      </addr>
      <telecom use="WP" value="(555) 555-555-1234"/>
      <representedOrganization>
        <id root="2.16.840.1.113883.19.5"/>
        <name>Good Health Clinic</name>
        <telecom nullFlavor="UNK"/>
        <addr nullFlavor="UNK"/>
      </representedOrganization>
    </assignedEntity>
  </performer>
  <participant typeCode="LOC">
    <participantRole classCode="SDLOC">
      <templateId root="2.16.840.1.113883.10.20.22.4.32"/>
      <!-- Service Delivery Location template -->
      ...
    </participantRole>
  </participant>
  <entryRelationship typeCode="COMP">
    <substanceAdministration classCode="SBADM" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
      <!-- Medication Activity template -->
      ...
    </substanceAdministration>
  </entryRelationship>
</act>
```

6.62 Procedure Activity Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.13 (open)]

Table 261: Procedure Activity Observation Contexts

Used By:	Contains Entries:
Procedures Section (entries optional)	Indication
Procedures Section (entries required)	Instructions Medication Activity Service Delivery Location

The common notion of "procedure" is broader than that specified by the HL7 Version 3 Reference Information Model (RIM). Therefore procedure templates can be represented with various RIM classes: act (e.g., dressing change), observation (e.g., EEG), procedure (e.g. splenectomy).

This clinical statement represents procedures that result in new information about the patient that cannot be classified as a procedure according to the HL7 RIM. Examples of these procedures are diagnostic imaging procedures, EEGs and EKGs.

Table 262: Procedure Activity Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Procedure Activity Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.13']					
	@classCode	1..1	SHALL		8282	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		8237	2.16.840.1.113883.11.20.9.18 (MoodCodeEvnInt)
	templateId	1..1	SHALL	SET<II>	8238	
	@root	1..1	SHALL		10520	2.16.840.1.113883.10.20.22.4.13
procedureId	id	1..*	SHALL		8239	
procedure Type	code	1..1	SHALL	CE	8240	
procedure FreeText Type	originalText	0..1	SHOULD		8242	
	reference	0..1	SHOULD		15901	
	@value	0..1	SHOULD		15902	
	statusCode	1..1	SHALL		8245	2.16.840.1.113883.11.20.9.22 (ProcedureAct statusCode)
procedure	effectiveTime	0..1	SHOULD	TS or IVL<T	8246	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
DateTime				S>		
	priorityCode	0..1	MAY		8247	2.16.840.1.113883.1.11.168 66 (ActPriority)
	value	1..1	SHALL		16846	
	methodCode	0..1	MAY	SET<CE>	8248	
procedure BodyType	targetSiteCode	0..*	SHOULD	SET<CD>	8250	
	@code	1..1	SHALL		16071	2.16.840.1.113883.3.88.12. 3221.8.9 (Body Site Value Set)
	performer	0..*	SHOULD		8251	
procedure Provider	assignedEntity	1..1	SHALL		8252	
	id	1..*	SHALL		8253	
	addr	1..1	SHALL	SET<AD>	8254	
	telecom	1..1	SHALL	SET<TEL>	8255	
	representedOrganization	0..1	SHOULD		8256	
	id	0..*	SHOULD		8257	
	name	0..*	MAY	PN	8258	
	telecom	1..1	SHALL	SET<TEL>	8260	
	addr	1..1	SHALL	SET<AD>	8259	
	participant	0..*	MAY		8261	
	@typeCode	1..1	SHALL		8262	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = LOC
	participantRole	1..1	SHALL		15904	
	entryRelationship	0..*	MAY		8264	
	@typeCode	1..1	SHALL		8265	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	@inversionInd	1..1	SHALL		8266	true
	encounter	1..1	SHALL		8267	
	@classCode	1..1	SHALL		8268	2.16.840.1.113883.5.6 (HL7ActClass) = ENC
	@moodCode	1..1	SHALL		8269	2.16.840.1.113883.5.1001 (ActMood) = EVN

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	id	1..1	SHALL		8270	
	entryRelations hip	0..1	MAY		8272	
	@typeCode	1..1	SHALL		8273	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		8274	true
	act	1..1	SHALL		15905	
	entryRelations hip	0..*	MAY		8276	
	@typeCode	1..1	SHALL		8277	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		15906	
	entryRelations hip	0..1	MAY		8279	
	@typeCode	1..1	SHALL		8280	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	substanceAdmi nistration	1..1	SHALL		15907	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:8282).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03 (CONF:8237).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:8238) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.13" (CONF:10520).
4. **SHALL** contain at least one [1..*] **id** (CONF:8239).
5. **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE" (CONF:8240).
 - a. This code **SHOULD** contain zero or one [0..1] **originalText** (CONF:8242).
 - i. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15901).
 1. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15902).
 - a. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15903).

- b. This code in a procedure activity **SHOULD** be selected from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96), and **MAY** be selected from CPT-4 (CodeSystem: 2.16.840.1.113883.6.12), ICD9 Procedures (CodeSystem: 2.16.840.1.113883.6.4) (CONF:8241).
- 6. **SHALL** contain exactly one [1..1] **statusCode**, which **SHALL** be selected from ValueSet ProcedureAct statusCode 2.16.840.1.113883.11.20.9.22 **DYNAMIC** (CONF:8245).
- 7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:8246).
- 8. **MAY** contain zero or one [0..1] **priorityCode**, which **SHALL** be selected from ValueSet ActPriority 2.16.840.1.113883.1.11.16866 **DYNAMIC** (CONF:8247).
- 9. **SHALL** contain exactly one [1..1] **value** (CONF:16846).
- 10. **MAY** contain zero or one [0..1] **methodCode** (CONF:8248).
 - a. MethodCode **SHALL NOT** conflict with the method inherent in Observation / code (CONF:8249).
- 11. **SHOULD** contain zero or more [0..*] **targetSiteCode** (CONF:8250).
 - a. The targetSiteCode, if present, **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Body Site Value Set 2.16.840.1.113883.3.88.12.3221.8.9 **DYNAMIC** (CONF:16071).
- 12. **SHOULD** contain zero or more [0..*] **performer** (CONF:8251).
 - a. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:8252).
 - i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:8253).
 - ii. This assignedEntity **SHALL** contain exactly one [1..1] **addr** (CONF:8254).
 - iii. This assignedEntity **SHALL** contain exactly one [1..1] **telecom** (CONF:8255).
 - iv. This assignedEntity **SHOULD** contain zero or one [0..1] **representedOrganization** (CONF:8256).
 - 1. The representedOrganization, if present, **SHOULD** contain zero or more [0..*] **id** (CONF:8257).
 - 2. The representedOrganization, if present, **MAY** contain zero or more [0..*] **name** (CONF:8258).
 - 3. The representedOrganization, if present, **SHALL** contain exactly one [1..1] **telecom** (CONF:8260).
 - 4. The representedOrganization, if present, **SHALL** contain exactly one [1..1] **addr** (CONF:8259).
- 13. **MAY** contain zero or more [0..*] **participant** (CONF:8261).
 - a. The participant, if present, **SHALL** contain exactly one [1..1] **@typeCode="LOC"** Location (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8262).
 - b. The participant, if present, **SHALL** contain exactly one [1..1] **Service Delivery Location** (templateId:2.16.840.1.113883.10.20.22.4.32) (CONF:15904).

14. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:8264).
- The entryRelationship, if present, **SHALL** contain exactly one [1..1] @**typeCode**="COMP" Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8265).
 - The entryRelationship, if present, **SHALL** contain exactly one [1..1] @**inversionInd**="true" true (CONF:8266).
 - The entryRelationship, if present, **SHALL** contain exactly one [1..1] **encounter** (CONF:8267).
 - This encounter **SHALL** contain exactly one [1..1] @**classCode**="ENC" Encounter (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:8268).
 - This encounter **SHALL** contain exactly one [1..1] @**moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:8269).
 - This encounter **SHALL** contain exactly one [1..1] **id** (CONF:8270).
 - Set encounter/id to the id of an encounter in another section to signify they are the same encounter (CONF:16847).
15. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8272) such that it
- SHALL** contain exactly one [1..1] @**typeCode**="SUBJ" Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8273).
 - SHALL** contain exactly one [1..1] @**inversionInd**="true" true (CONF:8274).
 - SHALL** contain exactly one [1..1] Instructions (templateId:2.16.840.1.113883.10.20.22.4.20) (CONF:15905).
16. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:8276) such that it
- SHALL** contain exactly one [1..1] @**typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8277).
 - SHALL** contain exactly one [1..1] Indication (templateId:2.16.840.1.113883.10.20.22.4.19) (CONF:15906).
17. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:8279) such that it
- SHALL** contain exactly one [1..1] @**typeCode**="COMP" Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:8280).
 - SHALL** contain exactly one [1..1] Medication Activity (templateId:2.16.840.1.113883.10.20.22.4.16) (CONF:15907).

Figure 218: Procedure activity observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.13"/>
  <!-- Procedure Activity Observation -->
  <id extension="123456789" root="2.16.840.1.113883.19"/>
  <code code="80146002"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Appendectomy"
    codeSystemName="SNOMED CT">
    <originalText>
      <reference value="#proc1"/>
    </originalText>
  </code>
  <statusCode code="aborted"
    codeSystem="2.16.840.1.113883.5.14"
    codeSystemName="HL7ActStatus"/>
  <effectiveTime value="20110203"/>
  <priorityCode code="CR"
    codeSystem="2.16.840.1.113883.5.7"
    codeSystemName="HL7ActPriority"
    displayName="Callback results"/>
  <value xsi:type="CD"/>
  <methodCode nullFlavor="UNK"/>
  <targetSiteCode code="416949008"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Abdomen and pelvis" />
  <performer>
    <assignedEntity>
      <id root="1.2.3.4" extension="1234"/>
      <addr>
        <streetAddressLine>17 Daws Rd.</streetAddressLine>
        <city>Blue Bell</city>
        <state>MA</state>
        <postalCode>02368</postalCode>
        <country>US</country>
      </addr>
      <telecom use="WP" value="(555) 555-555-1234"/>
      <representedOrganization>
        <id root="2.16.840.1.113883.19.5"/>
        <name>Good Health Clinic</name>
        <telecom nullFlavor="UNK"/>
        <addr nullFlavor="UNK"/>
      </representedOrganization>
    </assignedEntity>
  </performer>
  <entryRelationship typeCode="COMP">
    <substanceAdministration classCode="SBADM" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.16"/>
      <!-- Medication Activity template -->
      ...
    </substanceAdministration>
  </entryRelationship>
</observation>
```

6.63 Procedure Activity Procedure

[procedure: templateId 2.16.840.1.113883.10.20.22.4.14 (open)]

Table 263: Procedure Activity Procedure Contexts

Used By:	Contains Entries:
Procedures Section (entries optional) Reaction Observation Procedures Section (entries required) Anesthesia Section	Indication Instructions Medication Activity Product Instance Service Delivery Location

The common notion of "procedure" is broader than that specified by the HL7 Version 3 Reference Information Model (RIM). Therefore procedure templates can be represented with various RIM classes: act (e.g., dressing change), observation (e.g., EEG), procedure (e.g. splenectomy).

This clinical statement represents procedures whose immediate and primary outcome (post-condition) is the alteration of the physical condition of the patient. Examples of these procedures are an appendectomy, hip replacement and a creation of a gastrostomy.

Table 264: Procedure Activity Procedure Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
Green Procedure Activity Procedure	procedure[templateId/@root = '2.16.840.1.113883.10.20.22.4.14']					
	@classCode	1..1	SHALL		7652	2.16.840.1.113883.5.6 (HL7ActClass) = PROC
	@moodCode	1..1	SHALL		7653	2.16.840.1.113883.11.20.9.18 (MoodCodeEvnInt)
	templateId	1..1	SHALL	SET< II>	7654	
	@root	1..1	SHALL		10521	2.16.840.1.113883.10.20.22.4.14
procedure Id	id	1..*	SHALL		7655	
procedure Type	code	1..1	SHALL	CE	7656	
	originalText	0..1	SHOULD		7658	
	reference	0..1	SHOULD		15908	
	@value	0..1	SHOULD		15909	
procedure FreeText Type	reference/@value	0..1	SHOULD		7659	
	statusCode	1..1	SHALL		7661	2.16.840.1.113883.11.20.

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
						9.22 (ProcedureAct statusCode)
procedure DateTime	effectiveTime	0..1	SHOULD	TS or IVL< TS>	7662	
	priorityCode	0..1	MAY		7668	2.16.840.1.113883.1.11.16866 (ActPriority)
	methodCode	0..1	MAY	SET< CE>	7670	
bodySite	targetSiteCode	0..*	SHOULD		7683	
	@code	1..1	SHALL		16082	2.16.840.1.113883.3.88.12.3221.8.9 (Body Site Value Set)
	specimen	0..*	MAY		7697	
	specimenRole	1..1	SHALL		7704	
	id	0..*	SHOULD		7716	
	performer	0..*	SHOULD		7718	
procedure Provider	assignedEntity	1..1	SHALL		7720	
	id	1..*	SHALL		7722	
	addr	1..1	SHALL	SET< AD>	7731	
	telecom	1..1	SHALL	SET< TEL>	7732	
	represented Organization	0..1	SHOULD		7733	
	id	0..*	SHOULD		7734	
	name	0..*	MAY	PN	7735	
	telecom	1..1	SHALL	SET< TEL>	7737	
	addr	1..1	SHALL	SET< AD>	7736	
	participant	0..*	MAY		7751	
	@typeCode	1..1	SHALL		7752	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DEV
	participantRole	1..1	SHALL		15911	
	participant	0..*	MAY		7765	
	@typeCode	1..1	SHALL		7766	2.16.840.1.113883.5.90 (HL7ParticipationType) = LOC
	participantRole	1..1	SHALL		15912	
	entryRelationship	0..*	MAY		7768	
	@typeCode	1..1	SHALL		7769	2.16.840.1.113883.5.1002 (HL7ActRelationshipType)

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
						= COMP
	@inversionInd	1..1	SHALL		8009	true
	encounter	1..1	SHALL		7770	
	@classCode	1..1	SHALL		7771	2.16.840.1.113883.5.6 (HL7ActClass) = ENC
	@moodCode	1..1	SHALL		7772	2.16.840.1.113883.5.1001 (ActMood) = EVN
	id	1..1	SHALL		7773	
	entryRelationship	0..1	MAY		7775	
	@typeCode	1..1	SHALL		7776	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		7777	true
	act	1..1	SHALL		15913	
	entryRelationship	0..*	MAY		7779	
	@typeCode	1..1	SHALL		7780	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		15914	
	entryRelationship	0..1	MAY		7886	
	@typeCode	1..1	SHALL		7887	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	substance Administration	1..1	SHALL		15915	

1. **SHALL** contain exactly one [1..1] @classCode="PROC" Procedure
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:7652).
2. **SHALL** contain exactly one [1..1] @moodCode, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03 (CONF:7653).
3. **SHALL** contain exactly one [1..1] templateId (CONF:7654) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.14" (CONF:10521).
4. **SHALL** contain at least one [1..*] id (CONF:7655).
5. **SHALL** contain exactly one [1..1] code with @xsi:type="CE" (CONF:7656).
 - a. This code **SHOULD** contain zero or one [0..1] originalText (CONF:7658).
 - i. The originalText, if present, **SHOULD** contain zero or one [0..1] reference (CONF:15908).
 1. The reference, if present, **SHOULD** contain zero or one [0..1] @value (CONF:15909).
 - a. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative

- (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15910).
- ii. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference/@value** (CONF:7659).
 - b. This code in a procedure activity **SHOULD** be selected from LOINC (codeSystem 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96), and **MAY** be selected from CPT-4 (CodeSystem: 2.16.840.1.113883.6.12), ICD9 Procedures (CodeSystem: 2.16.840.1.113883.6.104), ICD10 Procedure Coding System (CodeSystem: 2.16.840.1.113883.6.4) (CONF:7657).
 - 6. **SHALL** contain exactly one [1..1] **statusCode**, which **SHALL** be selected from ValueSet ProcedureAct statusCode 2.16.840.1.113883.11.20.9.22 **DYNAMIC** (CONF:7661).
 - 7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:7662).
 - 8. **MAY** contain zero or one [0..1] **priorityCode**, which **SHALL** be selected from ValueSet ActPriority 2.16.840.1.113883.1.11.16866 **DYNAMIC** (CONF:7668).
 - 9. **MAY** contain zero or one [0..1] **methodCode** (CONF:7670).
 - a. MethodCode **SHALL NOT** conflict with the method inherent in Procedure / code (CONF:7890).
 - 10. **SHOULD** contain zero or more [0..*] **targetSiteCode** (CONF:7683).
 - a. The targetSiteCode, if present, **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Body Site Value Set 2.16.840.1.113883.3.88.12.3221.8.9 **DYNAMIC** (CONF:16082).
 - 11. **MAY** contain zero or more [0..*] **specimen** (CONF:7697).
 - a. The specimen, if present, **SHALL** contain exactly one [1..1] **specimenRole** (CONF:7704).
 - i. This specimenRole **SHOULD** contain zero or more [0..*] **id** (CONF:7716).
 - 1. If you want to indicate that the Procedure and the Results are referring to the same specimen, the Procedure/specimen/specimenRole/id **SHOULD** be set to equal an Organizer/specimen/specimenRole/id (CONF:7717).
 - b. This specimen is for representing specimens obtained from a procedure (CONF:16842).
 - 12. **SHOULD** contain zero or more [0..*] **performer** (CONF:7718) such that it
 - a. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:7720).
 - i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:7722).
 - ii. This assignedEntity **SHALL** contain exactly one [1..1] **addr** (CONF:7731).
 - iii. This assignedEntity **SHALL** contain exactly one [1..1] **telecom** (CONF:7732).
 - iv. This assignedEntity **SHOULD** contain zero or one [0..1] **representedOrganization** (CONF:7733).

1. The representedOrganization, if present, **SHOULD** contain zero or more [0..*] **id** (CONF:7734).
 2. The representedOrganization, if present, **MAY** contain zero or more [0..*] **name** (CONF:7735).
 3. The representedOrganization, if present, **SHALL** contain exactly one [1..1] **telecom** (CONF:7737).
 4. The representedOrganization, if present, **SHALL** contain exactly one [1..1] **addr** (CONF:7736).
13. **MAY** contain zero or more [0..*] **participant** (CONF:7751) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DEV"** Device (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7752).
 - b. **SHALL** contain exactly one [1..1] **Product Instance** (templateId:2.16.840.1.113883.10.20.22.4.37) (CONF:15911).
14. **MAY** contain zero or more [0..*] **participant** (CONF:7765) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="LOC"** Location (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90 **STATIC**) (CONF:7766).
 - b. **SHALL** contain exactly one [1..1] **Service Delivery Location** (templateId:2.16.840.1.113883.10.20.22.4.32) (CONF:15912).
15. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:7768) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7769).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** true (CONF:8009).
 - c. **SHALL** contain exactly one [1..1] **encounter** (CONF:7770).
 - i. This encounter **SHALL** contain exactly one [1..1] **@classCode="ENC"** Encounter (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:7771).
 - ii. This encounter **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:7772).
 - iii. This encounter **SHALL** contain exactly one [1..1] **id** (CONF:7773).
 1. Set the encounter ID to the ID of an encounter in another section to signify they are the same encounter (CONF:16843).
16. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7775) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7776).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** true (CONF:7777).

- c. **SHALL** contain exactly one [1..1] [Instructions](#)
 (templateId:2.16.840.1.113883.10.20.22.4.20) (CONF:15913).
17. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:7779) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="RSON" Has Reason
 (CodeSystem: HL7ActRelationshipType
 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7780).
 - b. **SHALL** contain exactly one [1..1] [Indication](#)
 (templateId:2.16.840.1.113883.10.20.22.4.19) (CONF:15914).
18. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:7886) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="COMP" Has Component
 (CodeSystem: HL7ActRelationshipType
 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7887).
 - b. **SHALL** contain exactly one [1..1] [Medication Activity](#)
 (templateId:2.16.840.1.113883.10.20.22.4.16) (CONF:15915).

Figure 219: Procedure activity procedure example

```

<procedure classCode="PROC" moodCode="EVN">
  <!-- Procedure activity procedure template -->
  <templateId root="2.16.840.1.113883.10.20.22.4.14"/>
  <id root="e401f340-7be2-11db-9fe1-0800200c9a66"/>

  <code code="397394009"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT"
        displayName="Bronchoalveolar lavage">
    <originalText>Bronchoalveolar<reference
value="procedure1"/></originalText>
  </code>

  <text>
    <reference value="procedure1"/>
  </text>

  <statusCode code="completed"/>
  <effectiveTime value="1998"/>
  <methodCode code="168731009"
              codeSystem="2.16.840.1.113883.6.96"
              codeSystemName="SNOMED CT"
              displayName="Standard chest X-ray"/>
  <targetSiteCode code="82094008"
                 codeSystem="2.16.840.1.113883.6.96"
                 codeSystemName="SNOMED CT"
                 displayName="Lower respiratory tract structure"/>

  <specimen>
    <specimenRole>
      <id extension="234234"/>
    </specimenRole>
  </specimen>

```

```

<participant typeCode="DEV">
  <participantRole classCode="MANU">
    <!-- Product instance template -->
    <templateId root="2.16.840.1.113883.10.20.22.4.37"/>
    ...
  </participantRole>
</participant>

<entryRelationship typeCode="COMP" inversionInd="true">
  <substanceAdministration classCode="SBADM" moodCode="INT">
    <!-- Medication activity template -->
    <templateId root=" 2.16.840.1.113883.10.20.22.4.16"/>
    ...
  </substanceAdministration>
</entryRelationship>

</procedure>

```

6.64 Procedure Context

[act: templateId 2.16.840.1.113883.10.20.6.2.5 (open)]

Table 265: Procedure Context Contexts

Used By:	Contains Entries:
Diagnostic Imaging Report (optional)	

The ServiceEvent Procedure Context of the document header may be overridden in the CDA structured body if there is a need to refer to multiple imaging procedures or acts. The selection of the Procedure or Act entry from the clinical statement choice box depends on the nature of the imaging service that has been performed. The Procedure entry shall be used for image-guided interventions and minimal invasive imaging services, whereas the Act entry shall be used for diagnostic imaging services.

Table 266: Procedure Context Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
act[templateId/@root = '2.16.840.1.113883.10.20.6.2.5']						
	templateId	1..1	SHALL	SET<II>	9200	
	@root	1..1	SHALL		10530	2.16.840.1.113883.10.20.6.2.5
	code	1..1	SHALL	CD	9201	
	effectiveTime	0..1	SHOULD	TS	9203	
	@value	1..1	SHALL		17173	

1. Procedure Context **SHALL** be represented with the procedure or act elements depending on the nature of the procedure (CONF:9199).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:9200) such that it

- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.6.2.5" (CONF:10530).
- 3. **SHALL** contain exactly one [1..1] **code** (CONF:9201).
- 4. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9203).
 - a. The effectiveTime, if present, **SHALL** contain exactly one [1..1] @value (CONF:17173).

Figure 220: Procedure context template example

```
<act moodCode="EVN" classCode="ACT">
  <templateId root="2.16.840.1.113883.10.20.6.2.5"/>
  <!-- Procedure Context template -->
  <code code="70548"
    displayName="Magnetic resonance angiography, head; with contrast
    material(s)"
    codeSystem="2.16.840.1.113883.6.12" codeSystemName="CPT4"/>
  <!-- Note: This code is slightly different from the code used in the
      header documentationOf and overrides it, which is what this entry
      is for. -->
  <effectiveTime value="20060823222400"/>
</act>
```

6.65 Product Instance

[participantRole: templateId 2.16.840.1.113883.10.20.22.4.37 (open)]

Table 267: Product Instance Contexts

Used By:	Contains Entries:
Procedure Activity	
Procedure	
Non-Medicinal Supply Activity	

This clinical statement represents a particular device that was placed in or used as part of a procedure or other act. This provides a record of the identifier and other details about the given product that was used. For example, it is important to have a record that indicates not just that a hip prostheses was placed in a patient but that it was a particular hip prostheses number with a unique identifier.

The FDA Amendments Act specifies the creation of a Unique Device Identification (UDI) System that requires the label of devices to bear a unique identifier that will standardize device identification and identify the device through distribution and use.

The UDI should be sent in the participantRole/id.

Table 268: Product Instance Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	participantRole[templateId/@root = '2.16.840.1.113883.10.20.22.4.37']					
	@classCode	1..1	SHALL		7900	2.16.840.1.113883.5.110 (RoleClass) = MANU
	templateId	1..1	SHALL	SET<II>	7901	
	@root	1..1	SHALL		10522	2.16.840.1.113883.10.20.22.4.37
	id	1..*	SHALL	II	7902	
	playing Device	1..1	SHALL		7903	
	code	0..1	SHOULD	CE	7904	
	scoping Entity	1..1	SHALL		7905	
	id	1..*	SHALL	II	7908	

1. **SHALL** contain exactly one [1..1] **@classCode="MANU"** Manufactured Product (CodeSystem: RoleClass 2.16.840.1.113883.5.110) (CONF:7900).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7901) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.37"** (CONF:10522).
3. **SHALL** contain at least one [1..*] **id** (CONF:7902).
4. **SHALL** contain exactly one [1..1] **playingDevice** (CONF:7903).
 - a. This playingDevice **SHOULD** contain zero or one [0..1] **code** (CONF:7904).
5. **SHALL** contain exactly one [1..1] **scopingEntity** (CONF:7905).
 - a. This scopingEntity **SHALL** contain at least one [1..*] **id** (CONF:7908).

Figure 221: Product instance example

```
<participantRole classCode="MANU">
  <templateId root="2.16.840.1.113883.10.20.22.4.37"/>
  <!-- Product instance template -->
  <id root="eb936010-7b17-11db-9fe1-0800200c9a68"/>
  <playingDevice>
    <code code="72506001"
          codeSystem="2.16.840.1.113883.6.96"
          displayName="Automatic implantable
                      cardioverter/defibrillator"/>
  </playingDevice>
  <scopingEntity>
    <id root="eb936010-7b17-11db-9fe1-0800200c9b65"/>
  </scopingEntity>
</participantRole>
```

6.66 Purpose of Reference Observation

[observation: templateId 2.16.840.1.113883.10.20.6.2.9 (open)]

Table 269: Purpose of Reference Observation Contexts

Used By:	Contains Entries:
SOP Instance Observation	

A Purpose of Reference Observation describes the purpose of the DICOM composite object reference. Appropriate codes, such as externally defined DICOM codes, may be used to specify the semantics of the purpose of reference. When this observation is absent, it implies that the reason for the reference is unknown.

Table 270: Purpose of Reference Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.6.2.9']						
	@classCode	1..1	SHALL		9264	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		9265	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	9266	
	@root	1..1	SHALL		10531	2.16.840.1.113883.10.20.6.2.9
	code	1..1	SHALL	CD	9267	
	code	0..1	SHOULD		9268	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	value	0..1	SHOULD	CD	9273	2.16.840.1.113883.11.20.9.28 (DICOMPurposeOfReference)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9264).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9265).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:9266) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.6.2.9"** (CONF:10531).
4. **SHALL** contain exactly one [1..1] **code** (CONF:9267).
 - a. This code **SHOULD** contain zero or one [0..1] **code="ASSERTION"** (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:9268).
 - b. For backwards compatibility with the DICOM CMET, the code **MAY** be drawn from ValueSet 2.16.840.1.113883.11.20.9.28 DICOMPurposeOfReference **DYNAMIC** (CONF:9269).
5. **SHOULD** contain zero or one [0..1] **value** with @xsi:type="CD", where the **@code** **SHOULD** be selected from ValueSet DICOMPurposeOfReference 2.16.840.1.113883.11.20.9.28 **DYNAMIC** (CONF:9273).

- a. The value element is a **SHOULD** to allow backwards compatibility with the DICOM CMET. Note that the use of ASSERTION for the code differs from the DICOM CMET. This is intentional. The DICOM CMET was created before the Term Info guidelines describing the use of the assertion pattern were released. It was determined that this IG should follow the latest Term Info guidelines. Implementers using both this IG and the DICOM CMET will need to be aware of this difference and apply appropriate transformations (CONF:9274).

Table 271: DICOM Purpose of Reference Value Set

Value Set: DICOMPurposeOfReference 2.16.840.1.113883.11.20.9.28 DYNAMIC Code System(s): DCM 1.2.840.10008.2.16.4		
Code	Code System	Print Name
121079	DCM	Baseline
121080	DCM	Best illustration of finding
121112	DCM	Source of Measurement

Figure 222: Purpose of reference example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.9"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <value xsi:type="CD" code="121112"
    codeSystem="1.2.840.10008.2.16.4"
    codeSystemName="DCM"
    displayName="Source of Measurement"/>
</observation>
```

6.67 Quantity Measurement Observation

[observation: templateId 2.16.840.1.113883.10.20.6.2.14 (open)]

Table 272: Quantity Measurement Observation Contexts

Used By:	Contains Entries:
Text Observation Code Observations	SOP Instance Observation

A Quantity Measurement Observation records quantity measurements based on image data such as linear, area, volume, and numeric measurements. The codes in DIRQuantityMeasurementTypeCodes (ValueSet: 2.16.840.1.113883.11.20.9.29) are from the qualifier hierarchy of SNOMED CT and are not valid for observation/code according to the Term Info guidelines. These codes can be used for backwards compatibility, but going forward, codes from the observable entity hierarchy will be requested and used.

Table 273: Quantity Measurement Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.6.2.14']					
	@classCode	1..1	SHALL		9317	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		9318	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	9319	
	@root	1..1	SHALL		10532	2.16.840.1.113883.10.20.6.2.14
	code	1..1	SHALL	CD	9320	
	code	0..1	SHOULD		9322	2.16.840.1.113883.11.20.9.29 (DIRQuantityMeasurementTypeCodes)
	code	0..1	SHOULD		9323	2.16.840.1.113883.11.20.9.30 (DICOMQuantityMeasurementType Codes)
	value	1..1	SHALL		9324	
	@xsi:type	1..1	SHALL		9325	PQ
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	9326	
	entry Relationship	0..*	MAY		9327	
	@typeCode	1..1	SHALL		9328	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SPRT

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9317).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9318).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:9319) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.6.2.14" (CONF:10532).
4. **SHALL** contain exactly one [1..1] **code** (CONF:9320).
 - a. This code **SHOULD** contain zero or one [0..1] **code**, which **SHALL** be selected from ValueSet **DIRQuantityMeasurementTypeCodes** 2.16.840.1.113883.11.20.9.29 **DYNAMIC** (CONF:9322).
 - b. This code **SHOULD** contain zero or one [0..1] **code**, which **SHALL** be selected from ValueSet **DICOMQuantityMeasurementTypeCodes** 2.16.840.1.113883.11.20.9.30 **DYNAMIC** (CONF:9323).
 - c. The value set of the observation/code includes numeric measurement types for linear dimensions, areas, volumes, and other numeric measurements. This value set is extensible and comprises the union of SNOMED codes for observable entities as reproduced in **DIRQuantityMeasurementTypeCodes** (ValueSet: 2.16.840.1.113883.11.20.9.29) and DICOM Codes in

- DICOMQuantityMeasurementTypeCodes (ValueSet: 2.16.840.1.113883.11.20.9.30) (CONF:9330).
5. **SHALL** contain exactly one [1..1] **value** (CONF:9324).
 - a. This value **SHALL** contain exactly one [1..1] **@xsi:type**, where the **@code="PQ"** (CONF:9325).
 6. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9326).
 7. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9327) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SPRT"** Has Support (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9328).
 - b. **SHALL** contain exactly one [1..1] **SOP Instance Observation** (2.16.840.1.113883.10.20.6.2.8) (CONF:9329).

Table 274: DIR Quantity Measurement Type Value Set

Value Set: DIRQuantityMeasurementTypeCodes 2.16.840.1.113883.11.20.9.29 DYNAMIC Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Print Name
439932008	SNOMED CT	Length of structure
440357003	SNOMED CT	Width of structure
439934009	SNOMED CT	Depth of structure
439984002	SNOMED CT	Diameter of structure
439933003	SNOMED CT	Long axis length of structure
439428006	SNOMED CT	Short axis length of structure
439982003	SNOMED CT	Major axis length of structure
439983008	SNOMED CT	Minor axis length of structure
440356007	SNOMED CT	Perpendicular axis length of structure
439429003	SNOMED CT	Radius of structure
440433004	SNOMED CT	Perimeter of non-circular structure
439747008	SNOMED CT	Circumference of circular structure
439748003	SNOMED CT	Diameter of circular structure
439746004	SNOMED CT	Area of structure
439985001	SNOMED CT	Area of body region
439749006	SNOMED CT	Volume of structure

Table 275: DICOM Quantity Measurement Type Value Set

Value Set: DICOMQuantityMeasurementTypeCodes 2.16.840.1.113883.11.20.9.30 DYNAMIC Code System(s): DCM 1.2.840.10008.2.16.4			
Code	Code System	Print Name	Measurement Type
121211	DCM	Path length	Linear
121206	DCM	Distance	Linear
121207	DCM	Height	Linear
121216	DCM	Volume estimated from single 2D region	Volume
121218	DCM	Volume estimated from two non-coplanar 2D regions	Volume
121217	DCM	Volume estimated from three or more non-coplanar 2D regions	Volume
121222	DCM	Volume of sphere	Volume
121221	DCM	Volume of ellipsoid	Volume
121220	DCM	Volume of circumscribed sphere	Volume
121219	DCM	Volume of bounding three dimensional region	Volume

Figure 223: Quantity measurement observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.14"/>
  <code code="439984002" codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNM3"
    displayName="Diameter of structure">
    <originalText>
      <reference value="#Diam2"/>
    </originalText>
  </code>
  <statusCode code="completed"/>
  <effectiveTime value="20060823223912"/>
  <value xsi:type="PQ" value="45" unit="mm">
    codeSystemVersion="1.5"/>
  </value>
  <!-- entryRelationships to SOP Instance Observations may go here -->
</observation>
```

6.68 Reaction Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.9 (open)]

Table 276: Reaction Observation Contexts

Used By:	Contains Entries:
Allergy - Intolerance Observation	Medication Activity
Medication Activity	Procedure Activity Procedure
Immunization Activity	Severity Observation

This clinical statement represents an undesired symptom, finding, etc., due to an administered or exposed substance. A reaction can be defined with respect to its severity, and can have been treated by one or more interventions.

Table 277: Reaction Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
Green Reaction Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.9']					
	@classCode	1..1	SHALL		7325	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7326	2.16.840.1.113883.5.10 01 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7323	
	@root	1..1	SHALL		10523	2.16.840.1.113883.10.2 0.22.4.9
	id	1..1	SHALL		7329	
	code	1..1	SHALL		16851	
reaction FreeText	text	0..1	SHOULD		7330	
	reference	0..1	SHOULD		15917	
	@value	0..1	SHOULD		15918	
	statusCode	1..1	SHALL		7328	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	7332	
	low	0..1	SHOULD	TS	7333	
	high	0..1	SHOULD	TS	7334	
reaction Coded	value	1..1	SHALL	CD	7335	2.16.840.1.113883.3.88. 12.3221.7.4 (Problem)
	entryRelationship	0..*	MAY		7337	
	@typeCode	1..1	SHALL		7338	2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
	@inversionInd	1..1	SHALL		7343	true

Name	XPath	Card.	Verb	Data Type	CONF #	Fixed Value
	procedure	1..1	SHALL		15920	
	entryRelationship	0..*	MAY		7340	
	@typeCode	1..1	SHALL		7341	2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
	@inversionInd	1..1	SHALL		7344	true
	substance Administration	1..1	SHALL		15921	
severity	entryRelationship	0..1	SHOULD		7580	
	@typeCode	1..1	SHALL		7581	2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = SUBJ
	@inversionInd	1..1	SHALL		10375	true
	observation	1..1	SHALL		15922	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:7325).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:7326).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7323) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.9"** (CONF:10523).
4. **SHALL** contain exactly one [1..1] **id** (CONF:7329).
5. **SHALL** contain exactly one [1..1] **code** (CONF:16851).
 - a. The value set for this code element has not been specified. Implementers are allowed to use any code system, such as SNOMED CT, a locally determined code, or a nullFlavor (CONF:16852).
6. **SHOULD** contain zero or one [0..1] **text** (CONF:7330).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15917).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15918).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15919).
 7. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:7328).
 8. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:7332).
 - a. The effectiveTime, if present, **SHOULD** contain zero or one [0..1] **low** (CONF:7333).

- b. The effectiveTime, if present, **SHOULD** contain zero or one [0..1] **high** (CONF:7334).
- 9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the @code **SHALL** be selected from ValueSet [Problem 2.16.840.1.113883.3.88.12.3221.7.4 DYNAMIC](#) (CONF:7335).
- 10. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:7337) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7338).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** True (CONF:7343).
 - c. **SHALL** contain exactly one [1..1] [**Procedure Activity Procedure**](#) (templateId:2.16.840.1.113883.10.20.22.4.14) (CONF:15920).
 - i. This procedure activity is intended to contain information about procedures that were performed in response to an allergy reaction (CONF:16853).
- 11. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:7340) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**) (CONF:7341).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** True (CONF:7344).
 - c. **SHALL** contain exactly one [1..1] [**Medication Activity**](#) (templateId:2.16.840.1.113883.10.20.22.4.16) (CONF:15921).
 - i. This medication activity is intended to contain information about medications that were administered in response to an allergy reaction (CONF:16840).
- 12. **SHOULD** contain zero or one [0..1] **entryRelationship** (CONF:7580) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:7581).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** TRUE (CONF:10375).
 - c. **SHALL** contain exactly one [1..1] [**Severity Observation**](#) (templateId:2.16.840.1.113883.10.20.22.4.8) (CONF:15922).

Figure 224: Reaction observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.9"/>
  <!-- Reaction observation template -->
  <id root="350a25a1-5e69-11e1-b86c-0800200c9a66"/>
  <code code="ASSERTION"
    codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="56018004"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Wheezing"/>
</observation>
```

6.69 Referenced Frames Observation

[observation: templateId 2.16.840.1.113883.10.20.6.2.10 (open)]

A Referenced Frames Observation is used if the referenced DICOM SOP instance is a multiframe image and the reference does not apply to all frames. The list of integer values for the referenced frames of a DICOM multiframe image SOP instance is contained in a Boundary Observation nested inside this class.

Table 278: Referenced Frames Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.6.2.10']						
	@classCode	1..1	SHALL		9276	2.16.840.1.113883.5.6 (HL7ActClass) = ROIBND
	@moodCode	1..1	SHALL		9277	2.16.840.1.113883.5.1001 (ActMood) = EVN
	code	1..1	SHALL	CE	9278	1.2.840.10008.2.16.4 (DCM) = 121190
	entryRelationship	1..1	SHALL		9279	
	@typeCode	1..1	SHALL		9280	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	observation	1..1	SHALL		15923	

1. **SHALL** contain exactly one [1..1] @classCode="ROIBND" Bounded Region of Interest (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:9276).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 ActMood) (CONF:9277).
3. **SHALL** contain exactly one [1..1] code="121190" Referenced Frames (CodeSystem: 1.2.840.10008.2.16.4 DCM) (CONF:9278).
4. **SHALL** contain exactly one [1..1] entryRelationship (CONF:9279).

- a. This entryRelationship **SHALL** contain exactly one [1..1] @typeCode="COMP" Component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) (CONF:9280).
- b. This entryRelationship **SHALL** contain exactly one [1..1] **Boundary Observation** (templateId:2.16.840.1.113883.10.20.6.2.11) (CONF:9281).

Figure 225: Referenced frames observation example

```

<observation classCode="ROIBND" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.10"/>
  <code code="121190" codeSystem="1.2.840.10008.2.16.4"
    displayName="Referenced Frames"/>
  <entryRelationship typeCode="COMP">
    <!-- Boundary Observation -->
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.6.2.11"/>
      <code code="113036" codeSystem="1.2.840.10008.2.16.4"
        displayName="Frames for Display"/>
      <value xsi:type="INT" value="1"/>
    </observation>
  </entryRelationship>
</observation>

```

6.70 Result Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.2 (open)]

Table 279: Result Observation Contexts

Used By:	Contains Entries:
Result Organizer Functional Status Section	

This clinical statement represents details of a lab, radiology, or other study performed on a patient.

The result observation includes a statusCode to allow recording the status of an observation. If a Results Observation is not completed, the Result Organizer must include corresponding statusCode. “Pending” results (e.g., a test has been run but results have not been reported yet) should be represented as “active” ActStatus.

Table 280: Result Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Result Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.2']					
	@classCode	1..1	SHALL		7130	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7131	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET< II>	7136	
	@root	1..1	SHALL		9138	2.16.840.1.113883.10.20.22.4.2
resultID	id	1..*	SHALL		7137	
resultType	code	1..1	SHALL	CE	7133	
	text	0..1	SHOULD		7138	
	reference	0..1	SHOULD		15924	
	@value	0..1	SHOULD		15925	
resultStatus	statusCode	1..1	SHALL		7134	
	@code	1..1	SHALL		14849	2.16.840.1.113883.11.20.9.39 (Result Status)
resultDateTime	effectiveTime	1..1	SHALL	TS or IVL< TS>	7140	
resultValue	value	1..1	SHALL		7143	
resultInterpretation	interpretationCode	0..*	SHOULD		7147	
	methodCode	0..1	MAY	SET< CE>	7148	
	targetSiteCode	0..1	MAY	SET< CD>	7153	
	author	0..1	MAY		7149	
resultReferenceRange	referenceRange	0..*	SHOULD		7150	
	observationRange	1..1	SHALL		7151	
	code	0..0	SHALL NOT		7152	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7130).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7131).

3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7136) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.2" (CONF:9138).
4. **SHALL** contain at least one [1..*] **id** (CONF:7137).
5. **SHALL** contain exactly one [1..1] **code** with @xsi:type="CE" (CONF:7133).
 - a. **SHOULD** be from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96) (CONF:7166).
 - b. Laboratory results **SHOULD** be from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or other constrained terminology named by the US Department of Health and Human Services Office of National Coordinator or other federal agency. Local and/or regional codes for laboratory results are allowed. The Local and/or regional codes **SHOULD** be sent in the translation element. See the Local code example figure (CONF:9109).
6. **SHOULD** contain zero or one [0..1] **text** (CONF:7138).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15924).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15925).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15926).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:7134).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **STATIC** (CONF:14849).
8. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:7140).
 - a. Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards) (CONF:16838).
9. **SHALL** contain exactly one [1..1] **value** (CONF:7143).
10. **SHOULD** contain zero or more [0..*] **interpretationCode** (CONF:7147).
11. **MAY** contain zero or one [0..1] **methodCode** (CONF:7148).
12. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:7153).
13. **MAY** contain zero or one [0..1] **author** (CONF:7149).
14. **SHOULD** contain zero or more [0..*] **referenceRange** (CONF:7150).
 - a. The referenceRange, if present, **SHALL** contain exactly one [1..1] **observationRange** (CONF:7151).
 - i. This observationRange **SHALL NOT** contain [0..0] **code** (CONF:7152).

Table 281: Result Status Value Set

Value Set: Result Status 2.16.840.1.113883.11.20.9.39 STATIC 2012-07-01		
Code System(s):	ActStatus 2.16.840.1.113883.5.14	
Description:	This value set indicates the status of the results observation or organizer	
Code	Code System	Print Name
aborted	ActStatus	aborted
active	ActStatus	active
cancelled	ActStatus	cancelled
completed	ActStatus	completed
held	ActStatus	held
suspended	ActStatus	suspended

Figure 226: Result observation example

```
<observation classCode="OBS" moodCode="EVN">
    <!-- Result observation template -->
    <templateId root="2.16.840.1.113883.10.20.22.4.2"/>
    <id root="107c2dc0-67a5-11db-bd13-0800200c9a66"/>
    <code code="30313-1"
        displayName="HGB"
        codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"/>
    <statusCode code="completed"/>
    <effectiveTime value="200003231430"/>
    <value xsi:type="PQ" value="13.2" unit="g/dl"/>
    <interpretationCode code="N" codeSystem="2.16.840.1.113883.5.83"/>

    <methodCode/>
    <targetSiteCode/>

    <author>
        <time/>
        <assignedAuthor>
            <id/>
        </assignedAuthor>
    </author>

    <referenceRange>
        <observationRange>
            <text>M 13-18 g/dl; F 12-16 g/dl</text>
        </observationRange>
    </referenceRange>
</observation>
```

Figure 227: No evaluation procedures (e.g., labs/x-rays) performed example

```
<entry>
  <act classCode="ACT" moodCode="EVN" negationInd="true">
    <code code="386053000" codeSystem="2.16.840.1.113883.6.96"
      displayName="evaluation procedure"/>
    <text>No Evaluation Procedures Performed</text>
    <statusCode code="completed"/>
  </act>
</entry>
```

Figure 228: Local code example

```
<code code="30313-1" displayName="HGB" codeSystem="2.16.840.1.113883.6.1"
  codeSystemName="LOINC">
  <translation code="123-4"
    displayName="Example"
    codeSystem="2.16.840.1.113883.19.5"
    codeSystemName="Regional Example Code System"/>
</code>
```

6.71 Result Organizer

[organizer: templateId 2.16.840.1.113883.10.20.22.4.1(open)]

Table 282: Result Organizer Contexts

Used By:	Contains Entries:
Results Section (entries required)	Result Observation
Results Section (entries optional)	

This clinical statement identifies set of result observations. It contains information applicable to all of the contained result observations. Result type codes categorize a result into one of several commonly accepted values (e.g., “Hematology”, “Chemistry”, “Nuclear Medicine”). These values are often implicit in the Organizer/code (e.g., an Organizer/code of “complete blood count” implies a ResultTypeCode of “Hematology”). This template requires Organizer/code to include a ResultTypeCode either directly or as a translation of a code from some other code system.

An appropriate nullFlavor can be used when the organizer/code or organizer/id is unknown.

If any Results Observation within the organizer has a statusCode of ‘active’, the Result Organizer must also have as statusCode of ‘active’.

Table 283: Result Organizer Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
organizer[templateId/@root = '2.16.840.1.113883.10.20.22.4.1']						
	@classCode	1..1	SHALL		7121	2.16.840.1.113883.5.6 (HL7ActClass)
	@moodCode	1..1	SHALL		7122	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7126	
	@root	1..1	SHALL		9134	2.16.840.1.113883.10.20.22.4.1
	id	1..*	SHALL		7127	
	code	1..1	SHALL	CE	7128	
	statusCode	1..1	SHALL		7123	
	@code	1..1	SHALL		14848	2.16.840.1.113883.11.20.9.39 (Result Status)
	component	1..*	SHALL		7124	
	observation	1..1	SHALL		14850	

1. **SHALL** contain exactly one [1..1] **@classCode** (CONF:7121).
 - a. **SHOULD** contain zero or one [0..1] **@classCode="CLUSTER"** Cluster (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) OR **SHOULD** contain zero or one [0..1] **@classCode="BATTERY"** Battery (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:7165).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7122).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7126) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.1"** (CONF:9134).
4. **SHALL** contain at least one [1..*] **id** (CONF:7127).
5. **SHALL** contain exactly one [1..1] **code** with **@xsi:type="CE"** (CONF:7128).
 - a. **SHOULD** be selected from LOINC (codeSystem 2.16.840.1.113883.6.1) or SNOMED CT (codeSystem 2.16.840.1.113883.6.96), and **MAY** be selected from CPT-4 (codeSystem 2.16.840.1.113883.6.12) (CONF:7164).
 - b. Laboratory results **SHOULD** be from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or other constrained terminology named by the US Department of Health and Human Services Office of National Coordinator or other federal agency. Local and/or regional codes for laboratory results **SHOULD** also be allowed (CONF:9108).
6. **SHALL** contain exactly one [1..1] **statusCode** (CONF:7123).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **STATIC** 2012-04-27 (CONF:14848).
7. **SHALL** contain at least one [1..*] **component** (CONF:7124) such that it

- a. **SHALL** contain exactly one [1..1] **Result Observation**
 (templateId:2.16.840.1.113883.10.20.22.4.2) (CONF:14850).

Figure 229: Result organizer example

```
<organizer classCode="BATTERY" moodCode="EVN">
  <!-- Result organizer template -->
  <templateId root="2.16.840.1.113883.10.20.22.4.1"/>
  <id root="7d5a02b0-67a4-11db-bd13-0800200c9a66"/>
  <code code="57021-8" displayName="CBC W Auto Differential panel"
        codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
  <statusCode code="completed"/>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <!-- Result observation template -->
      <templateId root="2.16.840.1.113883.10.20.22.4.2"/>
      ...
    </observation>
  </component>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <!-- Result observation template -->
      <templateId root="2.16.840.1.113883.10.20.22.4.2"/>
      ...
    </observation>
  </component>
  ...
</organizer>
```

6.72 Series Act

[act: templateId 2.16.840.1.113883.10.20.22.4.63 (open)]

Table 284: Series Act Contexts

Used By:	Contains Entries:
Study Act (required)	SOP Instance Observation

A Series Act contains the DICOM series information for referenced DICOM composite objects. The series information defines the attributes that are used to group composite instances into distinct logical sets. Each series is associated with exactly one study. Series Act clinical statements are only instantiated in the DICOM Object Catalog section inside a Study Act, and thus do not require a separate templateId; in other sections, the SOP Instance Observation is included directly.

Table 285: Series Act Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.22.4.63']					
	@classCode	1..1	SHALL		9222	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		9223	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		10918	
	@root	1..1	SHALL		10919	2.16.840.1.113883.10.20.22.4.63
	id	1..*	SHALL		9224	
	@root	1..1	SHALL		9225	
	@extension	0..0	SHALL NOT		9226	
	code	1..1	SHALL	CE	9228	1.2.840.10008.2.16.4 (DCM) = 113015
	qualifier	1..1	SHALL	SET<CS>	9229	
	name	1..1	SHALL	PN	9230	1.2.840.10008.2.16.4 (DCM) = 121139
	value	1..1	SHALL	ANY	9231	
	text	0..1	MAY		9233	
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	9235	
	entryRelationship	1..*	SHALL		9237	
	@typeCode	1..1	SHALL		9238	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	observation	1..1	SHALL		15927	

1. **SHALL** contain exactly one [1..1] **@classCode="ACT"** Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9222).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9223).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:10918) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.63"** (CONF:10919).
4. **SHALL** contain at least one [1..*] **id** (CONF:9224).

The @root contains the OID of the study instance UID since DICOM study ids consist only of an OID

- a. Such ids **SHALL** contain exactly one [1..1] **@root** (CONF:9225).
- b. Such ids **SHALL NOT** contain [0..0] **@extension** (CONF:9226).
5. **SHALL** contain exactly one [1..1] **code="113015"** with @xsi:type="CE" (CodeSystem: DCM 1.2.840.10008.2.16.4) (CONF:9228).
 - a. This code **SHALL** contain exactly one [1..1] **qualifier** (CONF:9229).

- i. This qualifier **SHALL** contain exactly one [1..1] **name**="121139" Modality (CodeSystem: DCM 1.2.840.10008.2.16.4) (CONF:9230).

The value element code contains a modality code and codeSystem is 1.2.840.10008.2.16.4

- ii. This qualifier **SHALL** contain exactly one [1..1] **value** with @xsi:type="ANY" (CONF:9231).

If present, the text element contains the description of the series

6. **MAY** contain zero or one [0..1] **text** (CONF:9233).

If present, the effectiveTime contains the time the series was started

7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9235).
8. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:9237) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="COMP" Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9238).
 - b. **SHALL** contain exactly one [1..1] **SOP Instance Observation** (templateId:2.16.840.1.113883.10.20.6.2.8) (CONF:15927).

Figure 230: Series act example

```
<act classCode="ACT" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.63"/>
  <id root="1.2.840.113619.2.62.994044785528.20060823223142485051"/>
  <code code="113015" codeSystem="1.2.840.10008.2.16.4"
        codeSystemName="DCM" displayName="Series">
    <qualifier>
      <name code="121139" codeSystem="1.2.840.10008.2.16.4"
            codeSystemName="DCM"
            displayName="Modality"> </name>
      <value code="CR" codeSystem="1.2.840.10008.2.16.4"
            codeSystemName="DCM"
            displayName="Computed Radiography"> </value>
    </qualifier>
  </code>
  <!-- **** SOP Instance UID *** -->
  <entryRelationship typeCode="COMP">
    <observation classCode="DGIMG" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.6.2.8"/>
      ...
    </observation>
  </entryRelationship>
</act>
```

6.73 Service Delivery Location

[participantRole: templateId 2.16.840.1.113883.10.20.22.4.32 (open)]

Table 286: Service Delivery Location Contexts

Used By:	Contains Entries:
Procedure Activity Procedure Procedure Activity Observation Procedure Activity Act Encounter Activities	

This clinical statement represents the location of a service event where an act, observation or procedure took place.

Table 287: Service Delivery Location Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	participantRole[templateId/@root = '2.16.840.1.113883.10.20.22.4.32']					
	@classCode	1..1	SHALL		7758	2.16.840.1.113883.5.111 (RoleCode) = SDLOC
	templateId	1..1	SHALL	SET<II>	7635	
	@root	1..1	SHALL		10524	2.16.840.1.113883.10.20.22.4.32
	code	1..1	SHALL		16850	2.16.840.1.113883.1.11.20275 (HealthcareServiceLocation)
	addr	0..*	SHOULD	SET<AD>	7760	
	telecom	0..*	SHOULD	SET<TEL>	7761	
	playingEntity	0..1	MAY		7762	
	@classCode	1..1	SHALL		7763	2.16.840.1.113883.5.41 (EntityClass) = PLC
	name	0..1	MAY		16037	

1. **SHALL** contain exactly one [1..1] **@classCode="SDLOC"** (CodeSystem: RoleCode 2.16.840.1.113883.5.111 **STATIC**) (CONF:7758).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:7635) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.32"** (CONF:10524).
3. **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet HealthcareServiceLocation 2.16.840.1.113883.1.11.20275 (CONF:16850).
4. **SHOULD** contain zero or more [0..*] **addr** (CONF:7760).
5. **SHOULD** contain zero or more [0..*] **telecom** (CONF:7761).

6. **MAY** contain zero or one [0..1] **playingEntity** (CONF:7762).
- The playingEntity, if present, **SHALL** contain exactly one [1..1] **@classCode="PLC"** (CodeSystem: EntityClass 2.16.840.1.113883.5.41 **STATIC**) (CONF:7763).
 - The playingEntity, if present, **MAY** contain zero or one [0..1] **name** (CONF:16037).

Table 288: HealthcareServiceLocation Value Set (excerpt)

Value Set: HealthcareServiceLocation 2.16.840.1.113883.1.11.20275 DYNAMIC		
Code System(s): HealthcareServiceLocation 2.16.840.1.113883.6.259		
Description:	A comprehensive classification of locations and settings where healthcare services are provided. This value set is based on the National Healthcare Safety Network (NHSN) location code system that has been developed over a number of years through CDC's interaction with a variety of healthcare facilities and is intended to serve a variety of reporting needs where coding of healthcare service locations is required.	
	Full value set may be found at: http://phinvads.cdc.gov/vads/SearchAllVocab_search.action?searchOptions.searchText=Healthcare+Service+Location+%28NHSN%29	
Code	Code System	Print Name
1024-9	HealthcareServiceLocation	Critical Care Unit
1117-1	HealthcareServiceLocation	Family Medicine Clinic
1128-8	HealthcareServiceLocation	Pediatric Clinic
1160-1	HealthcareServiceLocation	Urgent Care Center
...		

Figure 231: Service delivery location example

```
<participantRole classCode="SDLOC">
  <templateId root="2.16.840.1.113883.10.20.22.4.32"/>
  <code code="GACH"
    codeSystem="2.16.840.1.113883.5.111"
    codeSystemName="HL7RoleCode"
    displayName="General Acute Care Hospital"/>
  <addr>
    <streetAddressLine>17 Daws Rd.</streetAddressLine>
    <city>Blue Bell</city>
    <state>MA</state>
    <postalCode>02368</postalCode>
    <country>US</country>
  </addr>
  <telecom nullFlavor="UNK"/>
  <playingEntity classCode="PLC">
    <name>Good Health Clinic</name>
  </playingEntity>
</participantRole>
```

6.74 Severity Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.8 (open)]

Table 289: Severity Observation Contexts

Used By:	Contains Entries:
Reaction Observation	
Allergy - Intolerance Observation	

This clinical statement represents the gravity of the problem, such as allergy or reaction, in terms of its actual or potential impact on the patient. The Severity Observation can be associated with an Allergy Observation, Reaction Observation or both. When the Severity Observation is associated directly with an Allergy it characterizes the Allergy. When the Severity Observation is associated with a Reaction Observation it characterizes a Reaction. A person may manifest many symptoms in a reaction to a single substance, and each reaction to the substance can be represented. However, each reaction observation can have only one severity observation associated with it. For example, someone may have a rash reaction observation as well as an itching reaction observation, but each can have only one level of severity.

Table 290: Severity Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
Green Severity Observation	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.8']					
	@classCode	1..1	SHALL		7345	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7346	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET< II>	7347	
	@root	1..1	SHALL		10525	2.16.840.1.113883.10.20.22.4.8
	code	1..1	SHALL	CE	7349	2.16.840.1.113883.5.4 (ActCode) = SEV
severityFree Text	text	0..1	SHOULD		7350	
	reference	0..1	SHOULD		15928	
	@value	0..1	SHOULD		15929	
	statusCode	1..1	SHALL		7352	2.16.840.1.113883.5.14 (ActStatus) = completed

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
severity Coded	value	1..1	SHALL	CD	7356	2.16.840.1.113883.3.88.12.3 221.6.8 (Problem Severity)
	interpretation Code	0..*	SHOULD		9117	
	@code	0..1	SHOULD		16038	2.16.840.1.113883.1.11.78 (Observation Interpretation (HL7))

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:7345).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:7346).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7347) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.8"** (CONF:10525).
4. **SHALL** contain exactly one [1..1] **code="SEV"** Severity Observation with **@xsi:type="CE"** (CodeSystem: ActCode 2.16.840.1.113883.5.4 **STATIC**) (CONF:7349).
5. **SHOULD** contain zero or one [0..1] **text** (CONF:7350).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15928).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15929).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15930).
 6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:7352).
 7. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"**, where the **@code** **SHALL** be selected from ValueSet Problem Severity 2.16.840.1.113883.3.88.12.3221.6.8 **DYNAMIC** (CONF:7356).
 8. **SHOULD** contain zero or more [0..*] **interpretationCode** (CONF:9117).
 - a. The interpretationCode, if present, **SHOULD** contain zero or one [0..1] **@code**, which **SHOULD** be selected from ValueSet Observation Interpretation (HL7) 2.16.840.1.113883.1.11.78 **DYNAMIC** (CONF:16038).

Table 291: Problem Severity Value Set

Value Set: Problem Severity 2.16.840.1.113883.3.88.12.3221.6.8 DYNAMIC		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Description: This is a description of the level of the severity of the problem.		
Code	Code System	Print Name
255604002	SNOMED CT	Mild (qualifier value)
371923003	SNOMED CT	Mild to moderate (qualifier value)
6736007	SNOMED CT	Moderate (severity modifier) (qualifier value)
371924009	SNOMED CT	Moderate to severe (qualifier value)
24484000	SNOMED CT	Severe (severity modifier) (qualifier value)
399166001	SNOMED CT	Fatal (qualifier value)

Figure 232: Severity observation example

```
<observation classCode="OBS" moodCode="EVN">
    <!-- Severity observation template -->
    <templateId root="2.16.840.1.113883.10.20.22.4.8"/>
    <code code="SEV"
        displayName="Severity Observation"
        codeSystem="2.16.840.1.113883.5.4"
        codeSystemName="HL7ActCode"/>
    <text>
        <reference value="#severity"/>
    </text>
    <statusCode code="completed"/>
    <value xsi:type="CD" code="371924009" displayName="Moderate to severe"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT"/>
</observation>
```

6.75 Smoking Status Observation

[observation: templateId 2.16.840.1.113883.10.22.4.78 (open)]

Table 292: Smoking Status Observation Contexts

Used By:	Contains Entries:
Social History Section (optional)	

This clinical statement represents a patient's current smoking status. The vocabulary selected for this clinical statement is the best approximation of the statuses in Meaningful Use (MU) Stage 1.

If the patient is a smoker (77176002), the effectiveTime/low element must be present. If the patient is an ex-smoker (8517006), both the effectiveTime/low and [effectiveTime/high](#) element must be present.

The smoking status value set includes a special code to communicate if the smoking status is unknown which is different from how Consolidated CDA generally communicates unknown information.

Table 293: Smoking Status Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.22.4.78']					
	@classCode	1..1	SHALL		14806	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14807	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		14815	
	@root	1..1	SHALL		14816	2.16.840.1.113883.10.22.4.78
	code	1..1	SHALL		14808	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	statusCode	1..1	SHALL		14809	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL	TS or IVL<TS>	14814	
	low	1..1	SHALL		14818	
	value	1..1	SHALL	CD	14810	
	@code	1..1	SHALL		14817	2.16.840.1.113883.10.22.4.78 (Smoking Status)

1. Conforms to [Tobacco Use](#) template (2.16.840.1.113883.10.20.22.4.85).
2. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:14806).
3. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:14807).
4. **SHALL** contain exactly one [1..1] templateId (CONF:14815) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.22.4.78" (CONF:14816).
5. **SHALL** contain exactly one [1..1] code="ASSERTION" Assertion (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:14808).
6. **SHALL** contain exactly one [1..1] statusCode="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:14809).
7. **SHALL** contain exactly one [1..1] effectiveTime (CONF:14814).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] low (CONF:14818).
8. **SHALL** contain exactly one [1..1] value with @xsi:type="CD" (CONF:14810).
 - a. This value **SHALL** contain exactly one [1..1] @code, which **SHALL** be selected from ValueSet Smoking Status 2.16.840.1.113883.10.22.4.78 **DYNAMIC** (CONF:14817).

Table 294: Smoking Status Value Set

Value Set: Smoking Status 2.16.840.1.113883.11.20.9.38 STATIC 2012-07-01		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Description:	This value set indicates the current smoking status of a patient	
Code	Code System	Print Name
449868002	SNOMED CT	Current every day smoker
428041000124106	SNOMED CT	Current some day smoker
8517006	SNOMED CT	Former smoker
266919005	SNOMED CT	Never smoker (Never Smoked)
77176002	SNOMED CT	Smoker, current status unknown
266927001	SNOMED CT	Unknown if ever smoked

Figure 233: Smoking status observation example

```
<observation classCode="OBS" moodCode="EVN">
    <!-- Smoking status observation template -->
    <templateId root="2.16.840.1.113883.10.22.4.78"/>
    <id extension="123456789" root="2.16.840.1.113883.19"/>
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
    <statusCode code="completed"/>
    <effectiveTime>
        <low value="20110410"/>
    </effectiveTime>
    <value xsi:type="CD" code="266919005"
          displayName="Never Smoked"
          codeSystem="2.16.840.1.113883.6.96"/>
</observation>
```

Figure 234: Unknown if ever smoked

```
<observation classCode="OBS" moodCode="EVN">
    <!-- Smoking status observation template -->
    <templateId root="2.16.840.1.113883.10.22.4.78"/>
    <id extension="123456789" root="2.16.840.1.113883.19"/>
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
    <statusCode code="completed"/>
    <effectiveTime>
        <low value="20110410"/>
    </effectiveTime>
    <value xsi:type="CD" code="266927001"
          displayName="Unknown if ever smoked"
          codeSystem="2.16.840.1.113883.6.96"/>
</observation>
```

6.76 Social History Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.38 (open)]

Table 295: Social History Observation Contexts

Used By:	Contains Entries:
Social History Section	

This Social History Observation defines the patient's occupational, personal (e.g., lifestyle), social, and environmental history and health risk factors, as well as administrative data such as marital status, race, ethnicity, and religious affiliation.

Table 296: Social History Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.38']						
	@classCode	1..1	SHALL		8548	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		8549	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	8550	
	@root	1..1	SHALL		10526	2.16.840.1.113883.10.20.22.4.38
	id	1..*	SHALL	II	8551	
	code	0..1	SHOULD	CD	8558	
social History Type	code	0..1	SHOULD		8896	2.16.840.1.113883.3.88.12.8 0.60 (Social History Type Set Definition)
social History FreeText	original Text	0..1	SHOULD	ED	8893	
	reference /@value	0..1	SHOULD		8894	
	statusCode	1..1	SHALL	CS	8553	2.16.840.1.113883.5.14 (ActStatus) = completed
social History Observed Value	value	0..1	SHOULD	ANY	8559	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:8548).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:8549).
3. **SHALL** contain exactly one [1..1] templateId (CONF:8550) such that it

- a. **SHALL** contain exactly one [1..1]
`@root="2.16.840.1.113883.10.20.22.4.38" (CONF:10526).`
- 4. **SHALL** contain at least one [1..*] **id** (CONF:8551).
- 5. **SHOULD** contain zero or one [0..1] **code** (CONF:8558).
 - a. The code, if present, **SHOULD** contain zero or one [0..1] **code**, where the `@code` **SHOULD** be selected from ValueSet Social History Type Set Definition 2.16.840.1.113883.3.88.12.80.60 **STATIC** (2008-12-18 CONF:8896).
 - b. The code, if present, **SHOULD** contain zero or one [0..1] **originalText** (CONF:8893).
 - i. The originalText, if present, **SHOULD** contain zero or one [0..1] **reference/@value** (CONF:8894).
 - 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:8895).
- 6. **SHALL** contain exactly one [1..1] **statusCode**="completed" (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:8553).
- 7. **SHOULD** contain zero or one [0..1] **value** with `@xsi:type="ANY"` (CONF:8559).
 - a. Observation/value can be any data type. Where Observation/value is a physical quantity, the unit of measure **SHALL** be expressed using a valid Unified Code for Units of Measure (UCUM) expression (CONF:8555).

Table 297: Social History Type Set Definition Value Set

Value Set: Social History Type Set Definition 2.16.840.1.113883.3.88.12.80.60 STATIC 2008-12-18		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Print Name
229819007	SNOMED CT	Tobacco use and exposure
256235009	SNOMED CT	Exercise
160573003	SNOMED CT	Alcohol intake
364393001	SNOMED CT	Nutritional observable
364703007	SNOMED CT	Employment detail
425400000	SNOMED CT	Toxic exposure status
363908000	SNOMED CT	Details of drug misuse behavior
228272008	SNOMED CT	Health-related behavior
105421008	SNOMED CT	Educational Achievement

Figure 235: Social history observation template example

```

<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.38"/>
    <!-- ** Social history observation template ** -->
    <id root="45efb604-7049-4a2e-ad33-d38556c9636c"/>
    <code code="230056004" codeSystem="2.16.840.1.113883.6.96"
        displayName="Cigarette smoking">
        <originalText>
            <reference value="#soc2"/>
        </originalText>
    </code>
    <statusCode code="completed"/>
    <effectiveTime>
        <low value="1973"/>
    </effectiveTime>
    <value xsi:type="ST">None</value>
</observation>

```

6.77 SOP Instance Observation

[observation: templateId 2.16.840.1.113883.10.20.6.2.8 (open)]

Table 298: SOP Instance Observation Contexts

Used By:	Contains Entries:
Series Act Text Observation Code Observations Quantity Measurement Observation	Purpose of Reference Observation Referenced Frames Observation SOP Instance Observation

A SOP Instance Observation contains the DICOM Service Object Pair (SOP) Instance information for referenced DICOM composite objects. The SOP Instance act class is used to reference both image and non-image DICOM instances. The text attribute contains the DICOM WADO reference.

Table 299: SOP Instance Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.6.2.8']						
	@classCode	1..1	SHALL		9240	2.16.840.1.113883.5.6 (HL7ActClass) = DGIMG
	@moodCode	1..1	SHALL		9241	2.16.840.1.113883.5.1001 (ActMood) = EVN
	id	1..*	SHALL	II	9242	
	code	1..1	SHALL	CD	9244	
	text	0..1	SHOULD	ED	9246	
	@mediaType	1..1	SHALL		9247	application/dicom
	reference	1..1	SHALL		9248	

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	9250	
	@value	1..1	SHALL		9251	
	low	0..0	SHALL NOT	TS	9252	
	high	0..0	SHALL NOT	TS	9253	
	entryRelationship	0..*	MAY		9254	
	@typeCode	1..1	SHALL		9255	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
	entryRelationship	0..*	MAY		9257	
	@typeCode	1..1	SHALL		9258	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
	observation	1..1	SHALL		15935	
	entryRelationship	0..*	MAY		9260	
	@typeCode	1..1	SHALL		9261	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	observation	1..1	SHALL		15936	

1. **SHALL** contain exactly one [1..1] **@classCode="DGIMG"** Diagnostic Image (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9240).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9241).
3. **SHALL** contain at least one [1..*] **id** (CONF:9242).
 - a. The @root contains an OID representing the DICOM SOP Instance UID (CONF:9243).
4. **SHALL** contain exactly one [1..1] **code** (CONF:9244).
 - a. **SHALL** contain codeSystem 1.2.840.10008.2.6.1 DCMUID and code is an OID for a valid SOP class name UID (CONF:9245).
5. **SHOULD** contain zero or one [0..1] **text** (CONF:9246).
 - a. The text, if present, **SHALL** contain exactly one [1..1] **@mediaType="application/dicom"** (CONF:9247).
 - b. The text, if present, **SHALL** contain exactly one [1..1] **reference** (CONF:9248).
 - i. **SHALL** contain a @value that contains a WADO reference as a URI (CONF:9249).
6. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9250).
 - a. The effectiveTime, if present, **SHALL** contain exactly one [1..1] **@value** (CONF:9251).
 - b. The effectiveTime, if present, **SHALL NOT** contain [0..0] **low** (CONF:9252).

- c. The effectiveTime, if present, **SHALL NOT** contain [0..0] **high** (CONF:9253).
7. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9254) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9255).
 - b. **SHALL** contain exactly one [1..1] **SOP Instance Observation** (2.16.840.1.113883.10.20.6.2.8) (CONF:9256).
8. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9257) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9258).
 - b. **SHALL** contain exactly one [1..1] **Purpose of Reference Observation** (2.16.840.1.113883.10.20.6.2.9) (CONF:15935).
9. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9260) such that it
- a. This entryRelationship **SHALL** be present if the referenced DICOM object is a multiframe object and the reference does not apply to all frames (CONF:9263).
 - b. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9261).
 - c. **SHALL** contain exactly one [1..1] **Referenced Frames Observation** (2.16.840.1.113883.10.20.6.2.10) (CONF:15936).

Figure 236: SOP instance observation example

```

<observation classCode="DGIMG" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.8"/>
  <id
root="1.2.840.113619.2.62.994044785528.20060823.200608232232322.3"/>
  <code code="1.2.840.10008.5.1.4.1.1.1"
        codeSystem="1.2.840.10008.2.6.1" codeSystemName="DCMUID"
        displayName="Computed Radiography Image Storage">
    </code>
  <text mediaType="application/dicom">
    <reference
value="http://www.example.org/wado?requestType=WADO&studyUID=1.2.840.
113619.2.62.994044785528.114289542805&seriesUID=1.2.840.113619.2.62.9
94044785528.20060823223142485051&objectUID=1.2.840.113619.2.62.994044
785528.20060823.200608232232322.3&contentType=application/dicom"/>
    <!--reference to image 1 (PA) -->
  </text>
  <effectiveTime value="20060823223232"/>
</observation>

```

6.78 Study Act

[act: templateId 2.16.840.1.113883.10.20.6.2.6 (open)]

Table 300: Study Act Contexts

Used By:	Contains Entries:
DICOM Object Catalog Section - DCM 121181 (required)	Series Act

A Study Act contains the DICOM study information that defines the characteristics of a referenced medical study performed on a patient. A study is a collection of one or more series of medical images, presentation states, SR documents, overlays, and/or curves that are logically related for the purpose of diagnosing a patient. Each study is associated with exactly one patient. A study may include composite instances that are created by a single modality, multiple modalities, or by multiple devices of the same modality. The study information is modality-independent. Study Act clinical statements are only instantiated in the DICOM Object Catalog section; in other sections, the SOP Instance Observation is included directly.

Table 301: Study Act Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	act[templateId/@root = '2.16.840.1.113883.10.20.6.2.6']					
	@classCode	1..1	SHALL		9207	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
	@moodCode	1..1	SHALL		9208	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	9209	
	@root	1..1	SHALL		10533	2.16.840.1.113883.10.20.6.2.6
	id	1..*	SHALL		9210	
	@root	1..1	SHALL		9213	
	@extension	0..0	SHALL NOT		9211	
	code	1..1	SHALL	CE	9214	1.2.840.10008.2.16.4 (DCM) = 113014
	text	0..1	MAY		9215	
	reference	0..1	SHOULD		15995	
	@value	0..1	SHOULD		15996	
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	9216	
	entryRelationship	1..*	SHALL		9219	
	@typeCode	1..1	SHALL		9220	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = COMP
	act	1..1	SHALL		15937	

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:9207).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9208).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:9209) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.6.2.6" (CONF:10533).
4. **SHALL** contain at least one [1..*] **id** (CONF:9210).

The @root contains the OID of the study instance UID since DICOM study ids consist only of an OID

- a. Such ids **SHALL** contain exactly one [1..1] **@root** (CONF:9213).
- b. Such ids **SHALL NOT** contain [0..0] **@extension** (CONF:9211).
5. **SHALL** contain exactly one [1..1] **code**="113014" with @xsi:type="CE" (CodeSystem: DCM 1.2.840.10008.2.16.4) (CONF:9214).

If present, the text element contains the description of the study.

6. **MAY** contain zero or one [0..1] **text** (CONF:9215).

- a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15995).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15996).
 - 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15997).

If present, the effectiveTime contains the time the study was started

- 7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9216).
- 8. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:9219) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9220).
 - b. **SHALL** contain exactly one [1..1] **Series Act** (templateId:2.16.840.1.113883.10.20.22.4.63) (CONF:15937).

Figure 237: Study act example

```
<act classCode="ACT" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.6.2.6"/>
  <id root="1.2.840.113619.2.62.994044785528.114289542805"/>
  <code code="113014" codeSystem="1.2.840.10008.2.16.4"
        codeSystemName="DCM" displayName="Study"/>

  <!-- **** Series *****-->
  <entryRelationship typeCode="COMP">
    <act classCode="ACT" moodCode="EVN">
      ...
    </act>
  </entryRelationship>
</act>
```

6.79 Text Observation

[observation: templateId 2.16.840.1.113883.10.20.6.2.12 (open)]

Table 302: Text Observation Contexts

Used By:	Contains Entries:
	Quantity Measurement Observation SOP Instance Observation

DICOM Template 2000 specifies that Imaging Report Elements of Value Type Text are contained in sections. The Imaging Report Elements are inferred from Basic Diagnostic Imaging Report Observations that consist of image references and measurements (linear, area, volume, and numeric). Text DICOM Imaging Report Elements in this context are mapped to CDA text observations that are

section components and are related to the SOP Instance Observations (templateId 2.16.840.1.113883.10.20.6.2.8) or Quantity Measurement Observations (templateId 2.16.840.1.113883.10.20.6.2.14) by the SPRT (Support) act relationship.

A Text Observation is required if the findings in the section text are represented as inferred from SOP Instance Observations.

Table 303: Text Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
observation[templateId/@root = '2.16.840.1.113883.10.20.6.2.12']						
	@classCode	1..1	SHALL		9288	2.16.840.1.113883.5.4 (ActCode) = OBS
	@moodCode	1..1	SHALL		9289	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	9290	
	@root	1..1	SHALL		10534	2.16.840.1.113883.10.20.6.2.12
	code	1..1	SHALL	CE	9291	
	text	0..1	MAY		9295	
	reference	0..1	SHOULD		15938	
	@value	0..1	SHOULD		15939	
	effectiveTime	0..1	SHOULD	TS or IVL<TS>	9294	
	value	1..1	SHALL	ED	9292	
	entryRelationship	0..*	MAY		9298	
	@typeCode	1..1	SHALL		9299	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SPRT
	observation	1..1	SHALL		15941	
	entryRelationship	0..*	MAY		9301	
	@typeCode	1..1	SHALL		9302	2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SPRT
	observation	1..1	SHALL		15942	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:9288).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:9289).
3. **SHALL** contain exactly one [1..1] templateId (CONF:9290) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.6.2.12" (CONF:10534).
4. **SHALL** contain exactly one [1..1] code with @xsi:type="CE" (CONF:9291).
5. **MAY** contain zero or one [0..1] text (CONF:9295).

- a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15938).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15939).
 - 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15940).
- 6. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:9294).
- 7. **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:9292).
- 8. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9298) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SPRT"** Has Support (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9299).
 - b. **SHALL** contain exactly one [1..1] **SOP Instance Observation** (templateId:2.16.840.1.113883.10.20.6.2.8) (CONF:15941).
- 9. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:9301) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SPRT"** Has Support (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) (CONF:9302).
 - b. **SHALL** contain exactly one [1..1] **Quantity Measurement Observation** (templateId:2.16.840.1.113883.10.20.6.2.14) (CONF:15942).

Figure 238: Text observation example

```
<text>
  <paragraph>
    <caption>Finding</caption>
    <content ID="Fndng2">The cardiomedastinum is within normal limits.
    The trachea is midline. The previously described opacity at the medial
    right lung base has cleared. There are no new infiltrates. There is a new
    round density at the left hilus, superiorly (diameter about 45mm). A CT
    scan is recommended for further evaluation. The pleural spaces are clear.
    The visualized musculoskeletal structures and the upper abdomen are
    stable and unremarkable.</content>
  </paragraph>
  ...
</text>
<entry>
  <observation classCode="OBS" moodCode="EVN">
    <!-- Text Observation -->
    <templateId root="2.16.840.1.113883.10.20.6.2.12"/>
    <code code="121071" codeSystem="1.2.840.10008.2.16.4"
          codeSystemName="DCM" displayName="Finding"/>
    <value xsi:type="ED"><reference value="#Fndng2"/></value>
    ...
    <!-- entryRelationships to SOP Instance Observations and Quantity
        Measurement Observations may go here -->
  </observation>
</entry>
```

6.80 Tobacco Use

[observation: templateId 2.16.840.1.113883.10.20.22.4.85 (open)]

Table 304: Tobacco Use Observation Contexts

Used By:	Contains Entries:
Social History Section (optional)	

This clinical statement represents a patient's tobacco use. All types of tobacco use are represented using the codes from the tobacco use and exposure - finding hierarchy in SNOMED CT.

Table 305: Tobacco Use Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.85']					
	@classCode	1..1	SHALL		16558	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		16559	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL		16566	
	@root	1..1	SHALL		16567	2.16.840.1.113883.10.22.4.78
	code	1..1	SHALL		16560	2.16.840.1.113883.5.4 (ActCode) = ASSERTION
	statusCode	1..1	SHALL		16561	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL	TS or IVL<TS>	16564	
	low	1..1	SHALL		16565	
	value	1..1	SHALL	CD	16562	
	@code	1..1	SHALL		16563	2.16.840.1.113883.11.20.9.41 (Tobacco Use)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:16558).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:16559).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:16566) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.22.4.78"** (CONF:16567).
4. **SHALL** contain exactly one [1..1] **code="ASSERTION"** Assertion (CodeSystem: ActCode 2.16.840.1.113883.5.4) (CONF:16560).
5. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 STATIC) (CONF:16561).
6. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:16564).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:16565).
7. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:16562).
 - a. This value **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Tobacco Use 2.16.840.1.113883.11.20.9.41 DYNAMIC (CONF:16563).

Table 306: Tobacco Use Value Set

Value Set: Tobacco Use 2.16.840.1.113883.11.20.9.41 DYNAMIC		
Code System(s): SNOMED CT 2.16.840.1.113883.6.96		
Description:	Contains all values descending from the SNOMED CT® 365980008 tobacco use and exposure - finding hierarchy http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html	
Code	Code System	Print Name
81703003	SNOMED-CT	Chews tobacco
228494002	SNOMED-CT	Snuff user
59978006	SNOMED-CT	Cigar smoker
43381005	SNOMED-CT	Passive smoker
449868002	SNOMED CT	Current every day smoker
428041000124 106	SNOMED CT	Current some day smoker
8517006	SNOMED CT	Former smoker
266919005	SNOMED CT	Never smoker
77176002	SNOMED CT	Smoker, current status unknown
266927001	SNOMED CT	Unknown if ever smoked
...		

Figure 239: Tobacco use entry example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.22.4.9999"/>
  <id extension="123456789" root="2.16.840.1.113883.19"/>
  <code code="ASSERTION"
    displayName="Assertion"
    codeSystem="2.16.840.1.113883.5.4"
    codeSystemName="ActCode"/>
  <statusCode code="completed"/>
  <effectiveTime>
    <low value="20110410"/>
  </effectiveTime>
  <value xsi:type="CD" code="266919005"
    displayName="Never Smoked"
    codeSystem="2.16.840.1.113883.6.96"
  </observation>
```

6.81 Vital Sign Observation

[observation: templateId 2.16.840.1.113883.10.20.22.4.27 (open)]

Table 307: Vital Sign Observation Contexts

Used By:	Contains Entries:
Vital Signs Organizer	

Vital signs are represented as are other [results](#), with additional vocabulary constraints.

Table 308: Vital Sign Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.27']					
	@classCode	1..1	SHALL		7297	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		7298	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II >	7299	
	@root	1..1	SHALL		10527	2.16.840.1.113883.10.20.22 .4.27
	id	1..*	SHALL		7300	
	code	1..1	SHALL	CD	7301	2.16.840.1.113883.3.88.12. 80.62 (HITSP Vital Sign Result Type)
	text	0..1	SHOULD		7302	
	reference	0..1	SHOULD		15943	
	@value	0..1	SHOULD		15944	
	statusCode	1..1	SHALL		7303	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL	TS or IVL<TS >	7304	
	value	1..1	SHALL	PQ	7305	
	interpretationCode	0..1	MAY		7307	
	methodCode	0..1	MAY	SET<C E>	7308	
	targetSiteCode	0..1	MAY	SET<C D>	7309	
	author	0..1	MAY		7310	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation
(CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7297).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem:
ActMood 2.16.840.1.113883.5.1001) (CONF:7298).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7299) such that it
 - a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.27" (CONF:10527).
4. **SHALL** contain at least one [1..*] **id** (CONF:7300).
5. **SHALL** contain exactly one [1..1] **code**, where the **@code SHOULD** be selected
from ValueSet HITSP Vital Sign Result Type
2.16.840.1.113883.3.88.12.80.62 **DYNAMIC** (CONF:7301).

6. **SHOULD** contain zero or one [0..1] **text** (CONF:7302).
 - a. The text, if present, **SHOULD** contain zero or one [0..1] **reference** (CONF:15943).
 - i. The reference, if present, **SHOULD** contain zero or one [0..1] **@value** (CONF:15944).
 1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:15945).
7. **SHALL** contain exactly one [1..1] **statusCode**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:7303).
8. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:7304).
9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="PQ" (CONF:7305).
10. **MAY** contain zero or one [0..1] **interpretationCode** (CONF:7307).
11. **MAY** contain zero or one [0..1] **methodCode** (CONF:7308).
12. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:7309).
13. **MAY** contain zero or one [0..1] **author** (CONF:7310).

Table 309: Vital Sign Result Type Value Set

Value Set: HITSP Vital Sign Result Type 2.16.840.1.113883.3.88.12.80.62 DYNAMIC Code System(s): LOINC 2.16.840.1.113883.6.1		
Description: This identifies the vital sign result type		
Code	Code System	Print Name
9279-1	LOINC	Respiratory Rate
8867-4	LOINC	Heart Rate
2710-2	LOINC	O2 % BldC Oximetry
8480-6	LOINC	BP Systolic
8462-4	LOINC	BP Diastolic
8310-5	LOINC	Body Temperature
8302-2	LOINC	Height
8306-3	LOINC	Height (Lying)
8287-5	LOINC	Head Circumference
3141-9	LOINC	Weight Measured
39156-5	LOINC	BMI (Body Mass Index)
3140-1	LOINC	BSA (Body Surface Area)

Figure 240: Vital sign observation example

```
<component>
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.22.4.27"/>
    <!-- Vital Sign Observation template -->
    <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
    <code code="8302-2"
      codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"
      displayName="Height"/>
    <text><reference value="#height1"/></text>
    <statusCode code="completed"/>
    <effectiveTime value="19991114"/>
    <value xsi:type="PQ" value="177" unit="cm"/>
    <interpretationCode code="N" codeSystem="2.16.840.1.113883.5.83"/>
  </observation>
</component>
```

6.82 Vital Signs Organizer

[organizer: templateId 2.16.840.1.113883.10.20.22.4.26 (open)]

Table 310: Vital Signs Organizer Contexts

Used By:	Contains Entries:
Vital Signs Section (entries optional)	Vital Sign Observation
Vital Signs Section (entries required)	

The Vital Signs Organizer groups vital signs, which is similar to the [Result Organizer](#), but with further constraints.

An appropriate nullFlavor can be used when the organizer/code or organizer/id is unknown.

Table 311: Vital Signs Organizer Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	organizer[templateId/@root = '2.16.840.1.113883.10.20.22.4.26']					
	@classCode	1..1	SHALL		7279	2.16.840.1.113883.5.6 (HL7ActClass) = CLUSTER
	@moodCode	1..1	SHALL		7280	2.16.840.1.113883.5.1001 (ActMood) = EVN
	templateId	1..1	SHALL	SET<II>	7281	
	@root	1..1	SHALL		10528	2.16.840.1.113883.10.20.22.4.26
	id	1..*	SHALL	II	7282	
	code	1..1	SHALL	CD	7283	2.16.840.1.113883.6.96 (SNOMEDCT) = 46680005
	statusCode	1..1	SHALL	CS	7284	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	1..1	SHALL	TS or IVL<TS>	7288	
	component	1..*	SHALL		7285	
	observation	1..1	SHALL		15946	

1. **SHALL** contain exactly one [1..1] **@classCode="CLUSTER"** CLUSTER (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) (CONF:7279).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) (CONF:7280).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:7281) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.26"** (CONF:10528).
4. **SHALL** contain at least one [1..*] **id** (CONF:7282).
5. **SHALL** contain exactly one [1..1] **code="46680005"** Vital Signs (CodeSystem: SNOMED CT 2.16.840.1.113883.6.96) (CONF:7283).
6. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14) (CONF:7284).
The effectiveTime represents clinically effective time of the measurement, which is most likely when the measurement was performed (e.g., a BP measurement).
7. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:7288).
8. **SHALL** contain at least one [1..*] **component** (CONF:7285) such that it
 - a. **SHALL** contain exactly one [1..1] **Vital Sign Observation** (2.16.840.1.113883.10.20.22.4.27) (CONF:15946).

Figure 241: Vital signs organizer example

```
<organizer classCode="CLUSTER" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.26"/>
  <!-- Vital signs organizer template -->
  <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
  <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT" displayName="Vital signs"/>
  <statusCode code="completed"/>
  <effectiveTime value="19991114"/>
  <component>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.27"/>
      ...
    </observation>
  </component>
</observation>
```

7 REFERENCES

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APPENDIX A — ACRONYMS AND ABBREVIATIONS

ADL	Activities of Daily Living
AMA	American Medical Association
CCD	Continuity of Care Document
CDA	Clinical Document Architecture
CDC	Centers for Disease Control and Prevention
DAM	Domain Analysis Model
DICOM	Digital Imaging and Communications in Medicine
DIR	Diagnostic Imaging Report
EHR	electronic health record
DSTU	Draft Standard for Trial Use
H&P	History and Physical
HIMSS	Healthcare Information and Management Systems Society
HIT	healthcare information technology
HITECH	Health Information Technology for Economic and Clinical Health
HITSP	Health Information Technology Standards Panel
HL7	Health Level Seven
HSS	U.S. Department of Health and Human Services
HTML	Hypertext Markup Language
IG	implementation guide
IHE	Integrating the Healthcare Enterprise
IHTSDO	International Health Terminology Standard Development Organisation
LOINC	Logical Observation Identifiers Names and Codes
MDHT	Model-Driven Health Tools
MIME	Multipurpose Internet Mail Extensions
NPP	non-physician providers
NUCC	Healthcare Provider Taxonomy Code
ONC	Office of National Coordinator
PCP	primary care provider
PDF	portable document format
PHCR	Public Health case reports
PHQ	Patient Health Questionnaire
PHR	personal health record

PPRF	primary performers
RIM	Reference Information Model
RTF	rich text format
S&I	Standards and Interoperability
SCOORD	Spatial Coordinates
SDWG	Structured Documents Working Group
SDO	Standards Development Organization
SNOMED CT	Systemized Nomenclature for Medicine – Clinical Terms
SOP	Service Object Pair
SR	Structured Report
Tdb	Template Database
TIFF	tagged-image file format
UCUM	Unified Code for Units of Measure
UD	Unstructured Document
UDI	Unique Device Identification
UML	Unified Modeling Language
URL	Uniform Resource Locator
VIS	Vaccine Information Statement
WADO	Web Access to Persistent DICOM Objects
XPath	XML Path Language

APPENDIX B — CHANGES FROM PREVIOUS GUIDES

The first subsection below lists the changes in the May 2012 ballot. The remainder of the sections in this appendix explain all changes in the consolidation of the HL7 Health Story guides, HITSP C32, related components of IHE PCC, and CCD.

New and Updated Templates

Table 312: Templates Added and Updated in May 2012 Ballot

Template	Type	TemplateID
The following templates were updated for this version.		
US Realm Header documentOf/serviceEvent	Header	Not applicable
DIR Header documentOf	Header	Not applicable
Assessment Section	Section	2.16.840.1.113883.10.20.22.2.8
Functional Status Section	Section	2.16.840.1.113883.10.20.22.2.14
Plan of Care Section	Section	2.16.840.1.113883.10.20.22.2.10
Social History Section	Section	2.16.840.1.113883.10.20.22.2.17
Instructions Section	Section	2.16.840.1.113883.10.20.22.2.45
Encounter Activities	Entry	2.16.840.1.113883.10.20.22.4.49
Result Observation	Entry	2.16.840.1.113883.10.20.22.4.2
Result Organizer	Entry	2.16.840.1.113883.10.20.22.4.1
The following templates were added for this version.		
Assessment Scale Observation	Entry	2.16.840.1.113883.10.20.22.4.69
Deceased Observation	Entry	2.16.840.1.113883.10.20.22.4.79
Caregiver Characteristics	Entry	2.16.840.1.113883.10.20.22.4.72
Cognitive Status Problem Observation	Entry	2.16.840.1.113883.10.20.22.4.73
Cognitive Status Result Observation	Entry	2.16.840.1.113883.10.20.22.4.74
Cognitive Status Result Organizer	Entry	2.16.840.1.113883.10.20.22.4.75
Encounter Diagnosis	Entry	2.16.840.1.113883.10.20.22.4.80
Functional Status Problem Observation	Entry	2.16.840.1.113883.10.20.22.4.68
Functional Status Result Observation	Entry	2.16.840.1.113883.10.20.22.4.67
Functional Status Result Organizer	Entry	2.16.840.1.113883.10.20.22.4.66
Health Status Observation	Entry	2.16.840.1.113883.10.20.22.4.5
Highest Pressure Ulcer Stage	Entry	2.16.840.1.113883.10.20.22.4.77
Number of Pressure Ulcers Observation	Entry	2.16.840.1.113883.10.20.22.4.76

Template	Type	TemplateID
Pressure Ulcer Observation	Entry	2.16.840.1.113883.10.20.22.4.70
Smoking Status Observation	Entry	2.16.840.1.113883.10.22.4.78

Cardinality Changes

The next three tables show updates for H&P, Consultation Note, and Discharge Summary cardinality.

Table 313: H&P Cardinality Updates

Sections Names	HITSP (C84)	HL7 (H&P)	Current Cardinality
Problems	R	O	O
Resolved Problems	R	-	
Vital Signs	-	R	R
Past Medical History	-	R	R

Table 314: Consultation Note Cardinality Updates

Sections Names	HITSP (C84)	HL7 (H&P)	Current Cardinality
Active Problems		O	O – Problems
Resolved Problems	R2	-	
Allergies	R	O	O
Current Meds	R	O	O
Past Medical History	-	O	O
Chief Complaint	-	O	O
Functional Status	R2	-	-
Advance Directives	R	-	-
Pertinent Insurance Information (Payers)	R2	-	-

Table 315: Discharge Summary Cardinality Updates

Sections Names	HITSP (C48)	HL7 (H&P)	Current Cardinality
Problems	R	O	O
Hospital Admission Diagnosis Section	R	-	O

Section Code Changes

The following table documents changes to section codes used in the current Operative Note templates to conform to those in use for general procedures.

Table 316: Surgical Operative Codes Mapping to Generic Procedure Codes

Sections Names	Section Codes	Sections Names	Section Codes
Previous Operative Section Codes		Now Using	
Surgical Operation Note Anesthesia	10213-7	Anesthesia	59774-0
Surgical Operation Note Description	8724-7	Procedure Description	29554-3
Surgical Operation Note Disposition	55102-8	Procedure Disposition	59775-7
Surgical Operation Note Estimated Blood Loss	55103-6	Procedure Estimated Blood Loss	59770-8
Surgical Operation Note Findings	10215-2	Procedure Findings	59776-5
Surgical Operation Note Indications	10217-8	Procedure Indications	59768-2
Surgical Operation Note Planned Procedure	55104-4	Planned Procedure	59772-4
Surgical Operation Note Specimens Taken	10221-0	Procedure Specimens taken	59773-2

Conformance Verbs

The next table represents a matrix of the conformance verbs used across the standards reviewed for the consolidation guide. Cells with a dash (-) did not have an equivalent conformance convention.

Table 317: Consolidated Conformance Verb Matrix

RFC 2119	HL7	IHE	HITSP	Workgroup Consensus
SHALL Absolute requirement of the specification	SHALL Required/Mandatory	R (Required) Element must be present but can be NULL	R (Required) Data elements must always be sent. A NULL can be sent.	SHALL Element must be present but can be NULL Where necessary to explicitly preclude nullFlavor (e.g. where you want to preclude nullFlavor on observation/value), can include something like "SHALL NOT include nullFlavor". Where SHALL is applied to an attribute, it must be present and cannot be a NULL
SHALL NOT Absolute prohibition of the specification	SHALL NOT Not Required/Mandatory	-	-	SHALL NOT Absolute prohibition against inclusion

RFC 2119	HL7	IHE	HITSP	Workgroup Consensus
SHOULD Recommended There may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.	SHOULD Best Practice or Recommendation	R2 (Required if known) The sending application must be able to demonstrate that it can send all required if known elements, unless it does not in fact gather that data. If the information cannot be transmitted, the data element shall contain a value indicating the reason for omission of the data.	R2 (Required if known) If the sending application has data for the data element, it is REQUIRED to populate the data element. If the value is not known, the data element need not be sent	SHOULD Best Practice or Recommendation There may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course
SHOULD NOT Not Recommended	SHOULD NOT Not Recommended	-	-	SHOULD NOT Not Recommended
MAY Optional	MAY Accepted/Permitted	O (Optional)	O (Optional)	MAY Optional
-	-	C (Conditional) A conditional data element is one that is required, required if known or optional depending upon other conditions.	C (Conditional) Required to be sent when the conditions specified in the HITSP additional specifications column are true	-

Template ID Changes

The following table tracks changes in template IDs, for the most part representing a consolidation of separate templates into a single template. In some cases, two new template IDs are assigned to distinguish sections where computable data entries are required and those where entries are optional and only the human-readable narrative is required. To meet future requirements, an Entry Required template may be added to a section that doesn't currently contain one.

Table 318: Section Template Change Tracking

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Medications Category					
Medications Section	10160-0	2.16.840.1.113883.10.20.22.2 .1	2.16.840.1.113883.10.20.22.2 1.1	2.16.840.1.113883.10.20.1.8 (CCD)	HL7
				2.16.840.1.113883.3.88.11.83.112	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.19	IHE
Hospital Discharge Medications Section	10183-2	2.16.840.1.113883.10.20.22.2 .11	2.16.840.1.113883.10.20.22.2 11.1	2.16.840.1.113883.10.20.16.2.2 (DS)	HL7
				2.16.840.1.113883.3.88.11.83.114	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.22	IHE

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Medications Administered Section ³⁷	29549-3 18610-6	2.16.840.1.113883.10.20.22.2 .38	Future assignment	2.16.840.1.113883.10.20.18.2.8 (Proc Note)	HL7
				2.16.840.1.113883.3.88.11.83.115	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.21	IHE
Immunizations Section	11369-6	2.16.840.1.113883.10.20.22.2 .2	Future assignment	2.16.840.1.113883.10.20.1.6 (CCD)	HL7
				2.16.840.1.113883.3.88.11.83.117	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.23	IHE
Conditions/Concern Category					
Allergies Section (2.2.1.2)	48765-2	2.16.840.1.113883.10.20.22.2 .6	2.16.840.1.113883.10.20.22.2 6.1	2.16.840.1.113883.10.20.1.2 (CCD)	HL7
				2.16.840.1.113883.3.88.11.83.102	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.13	IHE
Problem Section	11450-4	2.16.840.1.113883.10.20.22.2 .5	2.16.840.1.113883.10.20.22.2 5.1	2.16.840.1.113883.10.20.1.11	HL7
				2.16.840.1.113883.3.88.11.83.103	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.6	IHE
History of Past Illness Section (2.2.1.4)	11348-0	2.16.840.1.113883.10.20.22.2 .20		2.16.840.1.113883.10.20.2.9 (H&P)	HL7
				2.16.840.1.113883.3.88.11.83.104	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.8	IHE
Hospital Discharge Diagnosis Section	11535-2	2.16.840.1.113883.10.20.22.2 .24		2.16.840.1.113883.10.20.16.2.1 (DS)	HL7
				2.16.840.1.113883.3.88.11.83.111	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.7	IHE
Preoperative Diagnosis Section	10219-4	2.16.840.1.113883.10.20.22.2 .34		2.16.840.1.113883.10.20.7.1 (OpNote)	HL7
				2.16.840.1.113883.3.88.11.83.129	HITSP
Post-operative Diagnosis Section	10218-6	2.16.840.1.113883.10.20.22.2 .35		2.16.840.1.113883.10.20.7.2 (OpNote)	HL7
				2.16.840.1.113883.3.88.11.83.130	HITSP

³⁷ Requires further discussion and resolution.

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Chief Complaint Section / Reason for Visit	10154-3 29299-5 46239-0	Chief complaint (1.3.6.1.4.1.19376.1.5.3.1.1.3.2.1) Reason for Visit (2.16.840.1.113883.10.20.22.2.12) Chief Complaint + Reason for Visit (2.16.840.1.113883.10.20.22.2.13)	N/A (narrative-only)	2.16.840.1.113883.10.20.2.8 (H&P) 2.16.840.1.113883.10.20.18.2.16 (Proc Note)	HL7
		2.16.840.1.113883.3.88.11.83.105		HITSP	
		1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1		IHE	
Reason for Referral Section	42349-1	1.3.6.1.4.1.19376.1.5.3.1.3.1	N/A (narrative-only)	2.16.840.1.113883.10.20.4.8 (Consult Note)	HL7
				2.16.840.1.113883.3.88.11.83.106	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.1 (narrative-only) 1.3.6.1.4.1.19376.1.5.3.1.3.2 (coded)	IHE
History of Present Illness Section	10164-2	N/A (use IHE 1.3.6.1.4.1.19376.1.5.3.1.3.4)	N/A (narrative-only)	1.3.6.1.4.1.19376.1.5.3.1.3.4	HL7
				2.16.840.1.113883.3.88.11.83.107	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.4	IHE
Medical (General) History Section	11329-0	2.16.840.1.113883.10.20.22.2.39		2.16.840.1.113883.10.20.18.2.5 (Proc Note)	HL7
Procedure and Surgery Category					
Procedures Section (List of Surgeries) (History of Procedures)	47519-4	2.16.840.1.113883.10.20.22.2.7	N/A (narrative-only)	2.16.840.1.113883.10.20.1.12 (CCD) HL7:2.16.840.1.113883.10.20.18.2.18 (Proc Note)	HL7
				2.16.840.1.113883.3.88.11.83.108	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.12	IHE
Operative Note Fluids Section	10216-0	2.16.840.1.113883.10.20.7.12		2.16.840.1.113883.10.20.7.12 (OpNote)	HL7

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Operative Note Surgical Procedure Section	10223-6	2.16.840.1.113883.10.20.7.14		2.16.840.1.113883.10.20.7.14 (OpNote)	HL7
Surgical Drains Section	11537-8	2.16.840.1.113883.10.20.7.13		2.16.840.1.113883.10.20.7.13 (OpNote)	HL7
Procedure Indications Section	59768-2	2.16.840.1.113883.10.20.22.2 .29		2.16.840.1.113883.10.20.18.2.1 (Proc Note)	HL7
Procedure Description Section	29554-3	2.16.840.1.113883.10.20.22.2 .27		2.16.840.1.113883.10.20.18.2.2 (Proc Note)	HL7
Post-procedure Diagnosis Section	59769-0	2.16.840.1.113883.10.20.22.2 .36		2.16.840.1.113883.10.20.18.2.3 (Proc Note)	HL7
Complications Section	55109-3	2.16.840.1.113883.10.20.22.2 .37		2.16.840.1.113883.10.20.18.2.4 (Proc Note) 2.16.840.1.113883.10.20.7.10 (OpNote)	HL7
Anesthesia Section	59774-0	2.16.840.1.113883.10.20.22.2 .25		2.16.840.1.113883.10.20.18.2.7 (Proc Note) 2.16.840.1.113883.10.20.7.5 (OpNote)	HL7
Procedure Disposition Section	59775-7	2.16.840.1.113883.10.20.18.2 .12		2.16.840.1.113883.10.20.18.2.12 (Proc Note)	HL7
Procedure Estimated Blood Loss Section	59770-8	2.16.840.1.113883.10.20.18.2 .9		2.16.840.1.113883.10.20.18.2.9 (Proc Note)	HL7
Procedure Findings	59776-5	2.16.840.1.113883.10.20.22.2 .28		2.16.840.1.113883.10.20.18.2.15 (Proc Note)	HL7

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Section					
Procedure Implants Section	59771-6	2.16.840.1.113883.10.20.22.2 .40		2.16.840.1.113883.10.20.18.2.11 (Proc Note)	HL7
Planned Procedure Section	59772-4	2.16.840.1.113883.10.20.22.2 .30		2.16.840.1.113883.10.20.18.2.6 (Proc Note)	HL7
Procedure Specimens Taken Section	59773-2	2.16.840.1.113883.10.20.22.2 .31		2.16.840.1.113883.10.20.18.2.10 (Proc Note)	HL7
Care Planning/Assessment Category					
Assessments Section	51848-0	2.16.840.1.113883.10.20.22.2 .8	-	2.16.840.1.113883.10.20.2.7 (H&P) 2.16.840.1.113883.10.20.18.2.13 (Proc Note)	HL7
				1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4	IHE
Assessment and Plan Section	51847-2	2.16.840.1.113883.10.20.22.2 .9	-	2.16.840.1.113883.10.20.2.7 (H&P) 2.16.840.1.113883.10.20.18.2.14 (Proc Note)	HL7
				1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5	IHE
				2.16.840.1.113883.10.20.2.7 (H&P) 2.16.840.1.113883.10.20.1.10 (CCD)	HL7
Plan of Care Section <i>(may be used for Discharge Instructions)</i>	18776-5	2.16.840.1.113883.10.20.22.2 .10	-	2.16.840.1.113883.3.88.11.83.124	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.31	IHE
				2.16.840.1.113883.10.20.1.5 (CCD)	HL7
Functional Status Section	47420-5	2.16.840.1.113883.10.20.22.2 .14	-	2.16.840.1.113883.3.88.11.83.109	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.17	IHE
				2.16.840.1.113883.10.20.1.14	HL7
Results Category					
Results	30954-2	2.16.840.1.113883.10.20.22.2	2.16.840.1.113883.10.20.22.2	2.16.840.1.113883.10.20.1.14	HL7

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Section (Diagnostic Results in HITSP)		.3	3.1	(CCD)	
				2.16.840.1.113883.3.88.11.83.122	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.28	IHE
Vital Signs Section	8716-3	2.16.840.1.113883.10.20.22.2 .4	2.16.840.1.113883.10.20.22.2. 4.1	2.16.840.1.113883.10.20.1.16 (CCD) 2.16.840.1.113883.10.20.2.4 (H&P)	HL7
				2.16.840.1.113883.3.88.11.83.119	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.25	IHE
DICOM Object Catalog Section	121181	N/A	2.16.840.1.113883.10.20.6.1.1	2.16.840.1.113883.10.20.6.1.1	HL7
Findings (DIR) (Radiology Comparison Study - Observation) Section	18782-3	2.16.840.1.113883.10.20.6.1. 2		2.16.840.1.113883.10.20.6.1.2	HL7
<i>Other Templates</i>					
Payers Section	48768-6	2.16.840.1.113883.10.20.22.2 .18	-	2.16.840.1.113883.10.20.1.9 (CCD)	HL7
				2.16.840.1.113883.3.88.11.83.101. 1	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7	IHE
Advance Directives Section	42348-3	2.16.840.1.113883.10.20.22.2 .21	-	2.16.840.1.113883.10.20.1.1 (CCD)	HL7
				2.16.840.1.113883.3.88.11.83.116	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.34 (narrative-only) 1.3.6.1.4.1.19376.1.5.3.1.3.35 (coded)	IHE
Physical Exam	29545-1	2.16.840.1.113883.10.20.2.10	-	2.16.840.1.113883.10.20.2.10 (H&P)	HL7

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Section				2.16.840.1.113883.3.88.11.83.118	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.24 (narrative-only) 1.3.6.1.4.1.19376.1.5.3.1.1.9.15 (coded)	IHE
Review of Systems Section	10187-3	1.3.6.1.4.1.19376.1.5.3.1.3.18	N/A (narrative-only)	2.16.840.1.113883.10.20.4.10 (Consult)	HL7
				2.16.840.1.113883.3.88.11.83.120	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.18	IHE
Hospital Course Section <i>(may be used as part of Discharge Summary)</i>	8648-8	1.3.6.1.4.1.19376.1.5.3.1.3.5	N/A (narrative-only)	1.3.6.1.4.1.19376.1.5.3.1.3.5	HL7
				2.16.840.1.113883.3.88.11.83.121	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.5	IHE
Family History Section	10157-6	2.16.840.1.113883.10.20.22.2 .15	-	2.16.840.1.113883.10.20.1.4 (CCD) 2.16.840.1.113883.10.20.18.2.17 (Proc Note)	HL7
				2.16.840.1.113883.3.88.11.83.125	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.14 (narrative-only) 1.3.6.1.4.1.19376.1.5.3.1.3.15 (coded)	IHE
				2.16.840.1.113883.10.20.1.15 (CCD)	HL7
Social History Section(incl. smoking)	29762-2	2.16.840.1.113883.10.20.22.2 .17	N/A (no stds require entry)	2.16.840.1.113883.3.88.11.83.126	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.3.16	IHE
				2.16.840.1.113883.10.20.1.3 (CCD)	HL7
Encounters Section	46240-8	2.16.840.1.113883.10.20.22.2 .22	-	2.16.840.1.113883.3.88.11.83.127	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3	IHE
				2.16.840.1.113883.10.20.1.7 (CCD)	HL7

Section	LOINC Code(s)	Consolidated Entry Optional templateId	Consolidated Entry Required templateId	Previous templateIds	Was
Equipment Section		.23		2.16.840.1.113883.3.88.11.83.128	HITSP
				1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5	IHE
Hospital Discharge Physical Section	10184-0	N/A (1.3.6.1.4.1.19376.1.5.3.1.3.26)	N/A (narrative-only)	N/A – Used IHE	HL7
				1.3.6.1.4.1.19376.1.5.3.1.3.26	IHE
General Status Section	10210-3	N/A (2.16.840.1.113883.10.20.2.5)	N/A (narrative-only)	2.16.840.1.113883.10.20.2.5 (H&P)	HL7
Objective Section	61149-1	N/A (2.16.840.1.113883.10.20.21.2.1)	N/A (narrative-only)	2.16.840.1.113883.10.20.22.2.1 (Prog Note)	HL7
Subjective Section	61150-9	N/A (2.16.840.1.113883.10.20.21.2.2)	N/A (narrative-only)	2.16.840.1.113883.10.20.22.2.2 (Prog Note)	HL7
Discharge Diet	42344-2	N/A (1.3.6.1.4.1.19376.1.5.3.1.3.33)	N/A (narrative-only)	N/A – Used IHE	HL7
				1.3.6.1.4.1.19376.1.5.3.1.3.33	IHE
Hospital Discharge Studies Summary Section	11493-4	2.16.840.1.113883.10.20.22.2.16	N/A (no stds require entry)	2.16.840.1.113883.10.20.16.2.3 (DS)	HL7

Consolidated Entries

The following table tracks changes made to consolidate templates originating in HL7, IHE, and HITSP.

Table 319: Entry Change Tracking Table

Entry	New templateId	Previous Title	Previous templateId	Previous Template Organization
Result Organizer	2.16.840.1.113883.10.20.22.4.1	Result Organizer	2.16.840.1.113883.10.20.1.32	CCD
Result Observation	2.16.840.1.113883.10.20.22.4.2	Result Observation Result Entry Content Module	2.16.840.1.113883.10.20.1.31 2.16.840.1.113883.3.88.11.83.15.1	CCD HITSP C83
Problem Concern Act (Condition)	2.16.840.1.113883.10.20.22.4.3	Problem Act Concern Entry Problem Concern Entry Condition Entry Module	2.16.840.1.113883.10.20.1.27 1.3.6.1.4.1.19376.1.5.3.1.4.5.1 1.3.6.1.4.1.19376.1.5.3.1.4.5.2 2.16.840.1.113883.3.88.11.83.7	CCD IHE PCC R6-0 V2 IHE PCC R6-0 V2 HITSP C83
Problem Observation	2.16.840.1.113883.10.20.22.4.4	Problem Observation Problem Entry	2.16.840.1.113883.10.20.1.28 1.3.6.1.4.1.19376.1.5.3.1.4.5	CCD IHE PCC R6-0 V2
Health Status Observation	2.16.840.1.113883.10.20.22.4.5	Problem Healthstatus observation Health Status	2.16.840.1.113883.10.20.1.51 1.3.6.1.4.1.19376.1.5.3.1.4.1.2	CCD IHE PCC R6-0 V2
Problem Status Observation	2.16.840.1.113883.10.20.22.4.6	Problem status observation Problem Status Observation	2.16.840.1.113883.10.20.1.50 1.3.6.1.4.1.19376.1.5.3.1.4.1.1	CCD IHE PCC R6-0 V2
Allergy - Intolerance Observation	2.16.840.1.113883.10.20.22.4.7	Allergy/Alert Observation Alert observation Allergy and Intolerance Concern Allergy/Drug Sensitivity Module	2.16.840.1.113883.10.20.22.4.7 2.16.840.1.113883.10.20.1.18 1.3.6.1.4.1.19376.1.5.3.1.4.5.3 2.16.840.1.113883.3.88.11.83.6	Consolidated IG CCD IHE PCC R6-0 V2 HITSP C83
Severity Observation	2.16.840.1.113883.10.20.22.4.8	Severity observation Severity	2.16.840.1.113883.10.20.1.55 1.3.6.1.4.1.19376.1.5.3.1.4.1	CCD IHE PCC R6-0 V2

Entry	New templateId	Previous Title	Previous templateId	Previous Template Organization
Reaction Observation	2.16.840.1.113883.10.20.22.4.9	Reaction Observation	2.16.840.1.113883.10.20.1.54	CCD
Procedure Activity	2.16.840.1.113883.10.20.22.4.12	Procedure activity	2.16.840.1.113883.10.20.1.29	CCD
Procedure Activity Observation	2.16.840.1.113883.10.20.22.4.13	Procedure activity	2.16.840.1.113883.10.20.1.29	CCD
Procedure Activity Procedure	2.16.840.1.113883.10.20.22.4.14	Procedure activity Procedure Entry Procedure	2.16.840.1.113883.10.20.1.29 1.3.6.1.4.1.19376.1.5.3.1.4.19 2.16.840.1.113883.3.88.11.83.17	CCD IHE PCC R6-0 V2 HITSP C83
Immunization SubstanceAdministration	2.16.840.1.113883.10.20.22.4.52	Medication Activity (for immunization) Immunization Immunization	2.16.840.1.113883.10.20.1.24 1.3.6.1.4.1.19376.1.5.3.1.4.12 2.16.840.1.113883.3.88.11.83.13	CCD IHE PCC R6-0 V2 HITSP C83
Medication Activity	2.16.840.1.113883.10.20.22.4.16	Medication Activity Medication Medication	2.16.840.1.113883.10.20.1.24 1.3.6.1.4.1.19376.1.5.3.1.4.7 2.16.840.1.113883.3.88.11.83.8	CCD IHE PCC R6-0 V2 HITSP C83
Medication Supply Order	2.16.840.1.113883.10.20.22.4.17	Supply Activity Supply entry Order Information Constraint	2.16.840.1.113883.10.20.1.34 1.3.6.1.4.1.19376.1.5.3.1.4.7.3 2.16.840.1.113883.3.88.11.83.8.3	CCD IHE PCC R6-0 V2 HITSP C83
Medication Dispense	2.16.840.1.113883.10.20.22.4.18	Supply Activity Supply entry	2.16.840.1.113883.10.20.1.34 1.3.6.1.4.1.19376.1.5.3.1.4.7.3	CCD IHE PCC R6-0 V2
Indication	2.16.840.1.113883.10.20.22.4.19	Indications	2.16.840.1.113883.3.88.11.83.138	HITSP C83
Instructions	2.16.840.1.113883.10.20.22.4.20	Patient instruction Patient Medication Instructions	2.16.840.1.113883.10.20.1.49 1.3.6.1.4.1.19376.1.5.3.1.4.3	CCD IHE PCC R6-0 V2
Sequence Number	2.16.840.1.113883.10.20.22.4.22			
Medication Information (manufacturedMaterial)	2.16.840.1.113883.10.20.22.4.23	Product Product Entry Medication Information Constraints	2.16.840.1.113883.10.20.1.53 1.3.6.1.4.1.19376.1.5.3.1.4.7.2 2.16.840.1.113883.3.88.11.83.8.2	CCD IHE PCC R6-0 V2 HITSP C83

Entry	New templateId	Previous Title	Previous templateId	Previous Template Organization
Drug Vehicle (participant)	2.16.840.1.113883.10.20.22.4.24			
Precondition (criterion)	2.16.840.1.113883.10.20.22.4.25			
Medication Use – None known (deprecated)	2.16.840.1.113883.10.20.22.4.29			
Vital Signs Organizer	2.16.840.1.113883.10.20.22.4.26	Vital signs organizer Vital Signs Organizer	2.16.840.1.113883.10.20.1.35 1.3.6.1.4.1.19376.1.5.3.1.4.13.1	CCD IHE PCC R6-0 V2
Vital Signs Observation	2.16.840.1.113883.10.20.22.4.27	Vital Signs Observation	1.3.6.1.4.1.19376.1.5.3.1.4.13.2	IHE PCC R6-0 V2
Allergy Status Observation	2.16.840.1.113883.10.20.22.4.28	Alert Status	2.16.840.1.113883.10.20.1.39	CCD
Allergy Problem Act	2.16.840.1.113883.10.20.22.4.30			
Age Observation	2.16.840.1.113883.10.20.22.4.31	Age Observation	2.16.840.1.113883.10.20.22.4.38	CCD
Encounter Location	2.16.840.1.113883.10.20.22.4.32	Encounter Location	2.16.840.1.113883.10.20.1.45	CCD
Hospital Discharge Diagnosis	2.16.840.1.113883.10.20.22.4.33	Discharge Diagnosis		
Hospital Admission Diagnosis	2.16.840.1.113883.10.20.22.4.34	Admission Diagnosis		
Discharge medication	2.16.840.1.113883.10.20.22.4.35			
Admission medication	2.16.840.1.113883.10.20.22.4.36			
Product Instance	2.16.840.1.113883.10.20.22.4.37			
Social History Observation	2.16.840.1.113883.10.20.22.4.38	Social History Observation Social History Social History Observation	2.16.840.1.113883.10.20.1.33 2.16.840.1.113883.3.88.11.83.19 1.3.6.1.4.1.19376.1.5.3.1.4.13.4	CCD HITSP C83 IHE PCC R6-0 V2
Family History Organizer	2.16.840.1.113883.10.20.22.4.45	Family History Organizer Family Member Information	2.16.840.1.113883.10.20.1.23 2.16.840.1.113883.3.88.11.83.18	CCD HITSP C83

Entry	New templateId	Previous Title	Previous templateId	Previous Template Organization
Family History Observation	2.16.840.1.113883.10.20.22.4.46	Family History Observation	2.16.840.1.113883.10.20.1.22	CCD
Family History Death Observation	2.16.840.1.113883.10.20.22.4.47	Family History Cause of Death Observation	2.16.840.1.113883.10.20.1.42	CCD
Advance Directive Observation	2.16.840.1.113883.10.20.22.4.48	Advance Directive Observation	2.16.840.1.113883.10.20.1.17	CCD
Comment Template	2.16.840.1.113883.10.20.22.4.64	Comments Comment Module IHE Comment Module	2.16.840.1.113883.10.20.1.40 2.16.840.1.113883.3.88.11.83.11 1.3.6.1.4.1.19376.1.5.3.1.4.2	CCD HITSP C83 IHE PCC R6-0 V2

Changes Within Sections

The next five tables show changes in the [Results](#), [Problems](#), [Vital Signs](#), [Procedures](#), and [Medications](#) sections.

Table 320: Result Section Changes

Title	Previous Templates	New Templates	Changes from HITSP C83	Changes from CCD
Results Section	2.16.840.1.113883.10.20.1.14 (HL7) 2.16.840.1.113883.3.88.11.83.122 (HITSP) 1.3.6.1.4.1.19376.1.5.3.1.3.28 (IHE)	2.16.840.1.113883.10.20.22.2.3 (optional entries) 2.16.840.1.113883.10.20.22.2.3.1 (requires entries)	1. IHE Coded Results template (1.3.6.1.4.1.19376.1.5.3.1.3.28) is not required 2. The C83 Procedure Module (2.16.840.1.113883.3.88.11.83.17) is not required 3. Result Organizer (section/entry/organizer) is required for all coded results	1. Result Organizer (section/entry/organizer) is required for all coded results
Result Organizer	2.16.840.1.113883.10.20.1.32 (CCD)	2.16.840.1.113883.10.20.22.4.1	1. Requires new Result Observation (2.16.840.1.113883.10.20.22.4.2)	1. Requires new Result Observation (2.16.840.1.113883.10.20.22.4.2)
Result Observation	2.16.840.1.113883.10.20.1.31 (CCD) 2.16.840.1.113883.3.88.11.83.15.1 (HITSP) 1.3.6.1.4.1.19376.1.5.3.1.4.13 (IHE)	2.16.840.1.113883.10.20.22.4.2	1. Narrative-entry link is not required. 2. observation “INT” and “PRP” @moodCodes no longer included	1. Requires observation/statusCode 2. Requires observation/effectiveTime

Table 321: Problems Section Changes

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Problems Section (Entries Optional) (2.16.840.1.11388 3.10.20.22.2.5)	2.16.840.1.113883.10.20.1.11 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.3.6 (IHE) 2.16.840.1.113883.3.88.11.83.103 (C83)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. title updated to SHALL [1..1] be present 3. entry should be present and contain Problem Concern Act 	<ul style="list-style-type: none"> 1. C83 templateId(s) no longer required 2. title updated to SHALL [1..1] be present 3. entry should be present and contain Problem Concern Act 	<ul style="list-style-type: none"> 1. CCD templateId no longer required 2. title updated to not require inclusion of "problems" 3. text updated to SHALL [1..1] be present 4. entry should be present and contain Problem Concern Act
Problems Section (Entries Required) (2.16.840.1.11388 3.10.20.22.2.5.1)	2.16.840.1.113883.10.20.1.11 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.3.6 (IHE) 2.16.840.1.113883.3.88.11.83.103 (C83)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. title updated to SHALL [1..1] be present 3. entry updated to SHALL [1..*] contain Problem Concern Act 	<ul style="list-style-type: none"> 1. C83 templateId(s) no longer required 2. title updated to SHALL [1..1] be present 3. entry updated to SHALL [1..*] contain Problem Concern Act 	<ul style="list-style-type: none"> 1. CCD templateId no longer required 2. title updated to not require inclusion of "problems" 3. entry updated to SHALL [1..*] contain Problem Concern Act
Problem Concern Act (2.16.840.1.11388 3.10.20.22.4.3)	2.16.840.1.113883.10.20.1.27 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.5.1 (IHE) 1.3.6.1.4.1.19376.1.5.3.1.4.5.2 (IHE) 2.16.840.1.113883.3.88.11.83.7 (C83)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. id updated to SHALL [1..*] 3. code updated to SHALL [1..1] 'CONC' from 2.16.840.1.113883.5.6 4. statusCode updated to SHALL [1..1] be from 2.16.840.1.113883.11.20.9.19 5. effectiveTime/high updated to remove dependency on status 	<ul style="list-style-type: none"> 1. C83 templateId(s) no longer required 2. id updated to SHALL [1..*] 3. code updated to SHALL [1..1] 'CONC' from 2.16.840.1.113883.5.6 4. statusCode updated to SHALL [1..1] be from 2.16.840.1.113883.11.20.9.19 5. effectiveTime updated to SHALL [1..1] 	<ul style="list-style-type: none"> 1. CCD templateId no longer required 2. id updated to SHALL [1..*] 3. code updated to SHALL [1..1] 'CONC' from 2.16.840.1.113883.5.6 4. statusCode updated to SHALL [1..1] be from 2.16.840.1.113883.11.20.9.19 5. effectiveTime updated to SHALL [1..1]

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Problem Observation (2.16.840.1.11388 3.10.20.22.4.4)	2.16.840.1.113883.10.20.1.28 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.5 (IHE)	<ol style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. id updated to SHALL [1..*] 3. code updated to SHALL [1..1] be from 2.16.840.1.113883.3.88.12.3221.7.2 4. Text and text/reference/@value updated to SHOULD [0..1] be present 5. effectiveTime must be updated for semantic differences 6. value updated to SHALL [1..1] be CD from 2.16.840.1.113883.3.88.12.3221.7.4 7. entryRelationships must be updated for differences 	New requirement, no mappings required	<ol style="list-style-type: none"> 1. CCD templateId no longer required 2. id updated to SHALL [1..*] 3. code updated to SHALL [1..1] be from 2.16.840.1.113883.3.88.12.3221.7.2 4. Text and text/reference/@value SHOULD be present 5. effectiveTime and child elements updated to SHOULD [0..1] be present 6. value updated to SHALL [1..1] be CD from 2.16.840.1.113883.3.88.12.3221.7.4 7. entryRelationships must be updated for differences 8. Sources of information differences are allowed under open template rules.
Problem Status Entry (2.16.840.1.11388 3.10.20.22.4.6)	2.16.840.1.113883.10.20.1.50 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.1.1 (IHE)	<ol style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. text updated to SHOULD [0..1] (not SHALL) 3. value updated to SHALL be [1..1] CD from 2.16.840.1.113883.3.88.12.80.68 	New requirement, no mappings required	<ol style="list-style-type: none"> 1. CCD templateId no longer required 2. text updated to SHOULD [0..1] be present 3. value updated to SHALL be [1..1] CD from 2.16.840.1.113883.3.88.12.80.68

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Health Status Observation (2.16.840.1.11388 3.10.20.22.4.5)	2.16.840.1.113883.10.20.1.51 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.1.2 (IHE)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. text and text/reference/@value updated to SHOULD [0..1] be present 3. value updated to SHALL be [1..1] CD from 2.16.840.1.113883.3.88.12.8 .68 4. entryRelationships must be updated for differences 	New requirement, no mappings required	<ul style="list-style-type: none"> 1.CCD templateId no longer required 2.id updated to SHALL [1..*] 3.text and text/@value updated to SHOULD [0..1] be present 4.effectiveTime and child elements updated to SHOULD [0..1] be present 5.value updated to SHALL be [1..1] CD from 2.16.840.1.113883.3.88 .12.80.68 6.entryRelationships must be updated for differences 7.Sources of information differences are allowed under open template rules.

Table 322: Vital Signs Section Changes

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Vital Signs Section (Entries Optional) (2.16.840.1.11388 3.10.20.22.4)	2.16.840.1.113883.10.20.1.16 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.25 (IHE) 2.16.840.1.113883.3.88.11.83.119 (C83)	1. IHE templateId(s) no longer required 2. title updated to not require inclusion of "vital signs"	1. HITSP templateID(s) no longer required 2. code/@code updated to SHALL be [1..1] 8716-3 from 2.16.840.1.113883.6.1 3. title updated to SHALL [1..1] occur	1. CCD templateId no longer required 2. title updated to not require inclusion of "vital signs"
Vital Signs Section (Entries Required) (2.16.840.1.11388 3.10.20.22.4.1)	2.16.840.1.113883.10.20.1.16 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.25 (IHE) 2.16.840.1.113883.3.88.11.83.119 (C83)	1. IHE templateId(s) no longer required 2. title updated to not require inclusion of "vital signs" 3. Section updated to SHALL contain [1..*] Vital Signs Organizer	1. HITSP templateID(s) no longer required 2. code/@code updated to SHALL be [1..1] 8716-3 from 2.16.840.1.113883.6.1 3. title updated to SHALL [1..1] occur 4. Section updated to SHALL contain [1..*] Vital Signs Organizer	1. CCD templateId no longer required 2. title updated to not require inclusion of "vital signs" 3. Section updated to SHALL contain [1..*] Vital Signs Organizer
Vital Signs Organizer (2.16.840.1.11388 3.10.20.22.4.26)	1.3.6.1.4.1.19376.1.5.3.1.4.13.1 (IHE) 2.16.840.1.113883.10.20.1.35 (CCD)	1. IHE templateId(s) no longer required 2. Requires [1..*] organizer/id 3. effectiveTime updated to SHALL [1..1]	1. HITSP templateID(s) no longer required 2. Requires [1..*] organizer/id 3. effectiveTime updated to SHALL [1..1]	1. CCD templateId no longer required 2. @classCode updated to CLUSTER 3. code updated to 46680005 from 2.16.840.1.113883.6.9 6 4. statusCode updated to "completed" 5. effectiveTime updated to SHALL [1..1]

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Vital Signs Observation (2.16.840.1.11388 3.10.20.22.4.27)	1.3.6.1.4.1.19376.1.5.3.1.4.13.2 (IHE)	<ol style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. id updated to SHALL [1..*] 3. code replaced with value from value set 2.16.840.1.113883.3.88.12.80.62 4. text updated to SHOULD [0..1] 5. text/reference/@value updated to SHOULD [0..1] 6. statusCode updated to SHALL [1..1] 'completed' 7. effectiveTime updated to SHALL [1..1] 	New requirement, no mappings required	New requirement, no mappings required

Table 323: Procedures Section Changes

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Procedures Section (Entries Optional) (2.16.840.1.11388 3.10.20.22.2.7)	2.16.840.1.113883.10.20.1.12 (CCD)	No equivalent template	No equivalent template	1.CCD templateId no longer required 2.Remove title requirements CONF-425 and CONF 426 3.Add SHALL requirement for text
Procedures Section (Entries Required) (2.16.840.1.11388 3.10.20.22.2.7.1)	2.16.840.1.113883.10.20.1.12 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.3.11 (IHE) 1.3.6.1.4.1.19376.1.5.3.1.3.12 (IHE) 2.16.840.1.113883.3.88.11.83.145 (C83)	1.IHE templateId(s) no longer required 2.Explicit that multiple entries are allowed. 3.Remove constraint for References Entry 4.Add text SHALL be [1..1] present	1.C83 templateId(s) no longer required 2.Add SHALL be [1..1] present and @code='45719-4' LOINC. 3.Add text SHALL be [1..1] present	1.CCD templateId no longer required 2.Remove title requirements CONF-425 and CONF 426 3.Add text SHALL be [1..1] present 4.Add requirement for at least one Procedure Activity Act, Procedure Activity Observation, or Procedure Activity Procedure.
Procedure Activity Procedure Entry (2.16.840.1.11388 3.10.20.22.4.14)	2.16.840.1.113883.10.20.1.29 (CCD) 2.16.840.1.113883.11.83.17 (C83) 1.3.6.1.4.1.19376.1.5.3.1.4.19 (C83)	No template supplied in guide.	1. C83 templateId(s) no longer required. 2. Constrain @classCode to PROC 3. Replace @moodCode with value from 2.16.840.1.113883.11.20.9.18 4. Relax code/originalText to SHOULD contain reference/@value 5. Add statusCode SHALL be [1..1] present from 2.16.840.1.113883.11.20.9.22 6. Add priorityCode MAY be [0..1] present from 2.16.840.1.113883.1.11.16866 6. Add priorityCode MAY be [0..1] present from 2.16.840.1.113883.1.11.16866 7. Add priorityCode MAY be [0..1] present from 2.16.840.1.113883.1.11.16866 8. Constrain methodCode to MAY [0..1] 9. Replace targetSiteCode with	1.CCD templateId no longer required 2.Constrain @classCode to PROC 3.Replace @moodCode with value from 2.16.840.1.113883.11.20.9.18 4.Add code SHOULD contain originalText 5.Add code/originalText SHOULD contain reference/@value 6.Replace statusCode with value from 2.16.840.1.113883.11.20.9.22 7.Add priorityCode MAY [0..1] be present from 2.16.840.1.113883.1.11.16866 8.Constrain methodCode to MAY [0..1] 9.Replace targetSiteCode with

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
			<p>7. Add methodCode MAY be [0..1] present</p> <p>8. Add specimen and children MAY be [0..*] present.</p> <p>9. Add required attributes for performer/assignedEntity</p> <p>10. Add MAY [0..*] participant/@typeCode='DEV' and allow corresponding Product Instance</p> <p>11. Add MAY [0..*] participant/@typeCode='LOC' and allow corresponding Service Delivery Location</p> <p>12. Add MAY [0..1] entryRelationship with @typeCode='COMP' @inversionInd='TRUE' to encounter with required id.</p> <p>13. Add MAY [0..1] entryRelationship with @typeCode='SUBJ' @inversionInd='TRUE' to Instructions with required templateId.</p> <p>14. Add MAY [0..1] entryRelationship with @typeCode='RSON' to Indication with required templateId.</p> <p>15. Add MAY [0..1] entryRelationship with @typeCode='COMP' to Medication Activity with</p>	<p>SHOULD [0..1] from 2.16.840.1.113883.3.88.12.322 1.8.9</p> <p>10. Add required attributes for performer/assignedEntity</p> <p>11. Add MAY [0..*] participant/@typeCode='DEV' and allow corresponding Product Instance</p> <p>12. Add MAY [0..1] entryRelationship with @typeCode='COMP' @inversionInd='TRUE' to encounter with required templateId.</p> <p>13. Add required attributes for entryRelationship/encounter</p> <p>14. Replace templateId for Encounter Location with that of Service Delivery Location</p> <p>15. Constrain entryRelationship to instructions to [0..1]</p> <p>16. Replace Instructions templateId with 2.16.840.1.113883.10.20.22.4. 20</p> <p>17. Add templateId 2.16.840.1.113883.10.20.22.4. 19 entryRelationship/Indication (if required) and remove existing templateId(s).</p> <p>18. Replace 2.16.840.1.113883.10.20.1.24. 20 templateId with 2.16.840.1.113883.10.20.22.4. 16 Medication Activity and constrain to MAY be [0..1]</p>

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
			required templateId.	present.
ProcedureActivity Observation Entry (2.16.840.1.11388 3.10.20.22.4.13)	2.16.840.1.113883.10.20.1.29 (CCD) 2.16.840.1.113883.11.83.17 (C83) 1.3.6.1.4.1.19376.1.5.3.1.4.19 (C83)	No template supplied in guide.	Same as 2.16.840.1.113883.11.83.17 changes EXCEPT: 1. Constrain @classCode to OBS 2. specimen and children MAY be [0..*] present constraint is not applicable 3. participant/@typeCode='DEV' and corresponding Product Instance template are not applicable.	Same as 2.16.840.1.113883.10.20.1.29 changes EXCEPT: 1.Constrain @classCode to OBS 2.specimen and children MAY be [0..*] present constraint is not applicable 3.participant/@typeCode='DEV' and corresponding Product Instance template are not applicable.
ProcedureActivity Act Entry (2.16.840.1.11388 3.10.20.22.4.12)	2.16.840.1.113883.10.20.1.29 (CCD) 2.16.840.1.113883.11.83.17 (C83) 1.3.6.1.4.1.19376.1.5.3.1.4.19 (C83)	No template supplied in guide.	Same as 2.16.840.1.113883.11.83.17 changes EXCEPT: 1. Constrain @classCode to ACT 2. specimen and children MAY be [0..*] present constraint is not applicable 3. participant/@typeCode='DEV' and corresponding Product Instance template are not applicable. 4. methodCode constraint is not applicable 5. targetSiteCode constraint is not applicable	Same as 2.16.840.1.113883.10.20.1.29 changes EXCEPT: 1.Constrain @classCode to ACT 2.specimen and children MAY be [0..*] present constraint is not applicable 3.participant/@typeCode='DEV' and corresponding Product Instance template are not applicable. 4.methodCode constraint is not applicable 5.targetSiteCode constraint is not applicable

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Service Delivery Location Entry (2.16.840.1.11388 3.10.20.22.4.32)	2.16.840.1.113883.10.20.1.45 (CCD)	No equivalent template.	No equivalent template.	<ol style="list-style-type: none"> CCD templateId no longer required. Constrain code to SHALL be [1..1] from 2.16.840.1.113883.1.11.20275 Update addr to SHOULD be [0..1] present Update telecom to SHOULD be [0..1] present Add playingEntity/name MAY be [0..1] present.
Product Instance Entry (2.16.840.1.11388 3.10.20.22.4.37)	2.16.840.1.113883.10.20.1.53 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.7. 2 (IHE)	<ol style="list-style-type: none"> IHE templateId(s) no longer required. Replace entire IHE template with Consolidated template and templateId. (differences in classes in templates – IHE product entry cannot be attached to procedures in CDA) 	<ol style="list-style-type: none"> C83 templateId(s) no longer required. Replace entire C83 template with Consolidated template and templateId. (differences in classes in templates – C83 product form cannot be attached to procedures in CDA) 	<ol style="list-style-type: none"> CCD templateId no longer required. Replace entire CCD template with Consolidated template and templateId. (differences in classes in templates – CCD product instance cannot be attached to procedures in CDA)

Table 324: Medications Section Changes

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Medications Section (Entries Optional) (2.16.840.1.113883.10.20.22.2.1)	2.16.840.1.113883.10.20.1.8 (CCD)	No equivalent template	No equivalent template	<ol style="list-style-type: none"> CCD templateId no longer required title updated to not require inclusion of "medication" text updated to SHALL [1..1] be present

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
				<ul style="list-style-type: none"> 4. entry should be present and contain Medication Activity 5. entry should be present and contain Medication Use – None Known. This is in place of the simple statement that absence of known medications SHALL be explicitly asserted
Medications Section (Entries Required) (2.16.840.1.113883.10.20.22.2.1.1)	1.3.6.1.4.1.19376.1.5.3.1.3.19 (IHE) 2.16.840.1.113883.3.88.11.83.112 (C83)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. title updated to SHALL [1..1] be present 3. text updated to SHALL [1..1] be present 4. entry SHALL be present and contain Medication Activity or and contain Medication Use – None Known 	<ul style="list-style-type: none"> 1. C83 templateId(s) no longer required 2. title updated to SHALL [1..1] be present 3. text updated to SHALL [1..1] be present 4. entry SHALL be present and contain Medication Activity or and contain Medication Use – None Known 	No equivalent template
Medication Activity (2.16.840.1.113883.10.20.22.4.16)	2.16.840.1.113883.10.20.1.24 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.7 (IHE) 1.3.6.1.4.1.19376.1.5.3.1.4.7.1 (IHE) 1.3.6.1.4.1.19376.1.5.3.1.4.8 (IHE) 1.3.6.1.4.1.19376.1.5.3.1.4.9 (IHE) 1.3.6.1.4.1.19376.1.5.3.1.4.10 (IHE) 1.3.6.1.4.1.19376.1.5.3.1.4.11 (IHE) 2.16.840.1.113883.3.88.11.83.8 (C83)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. @moodCode changed to require value from 2.16.840.1.113883.11.20.9.18 (effect is same). 3. id SHALL [1..*] be present 4. relax code to MAY BE [0..1] present, and use template Medication Use – None Known to assert no meds. 5. Relax text/reference/@value to SHOULD [0..1] be present. 6. Add statusCode SHALL be [1..1] present 7. effectiveTime updated to SHALL be [1..1] present 6. Relax statusCode to 	<ul style="list-style-type: none"> 1. C83 templateId(s) no longer required 2. @moodCode changed to require value from 2.16.840.1.113883.11.20.9.18 (effect is same). 3. id SHALL [1..*] be present 4. relax entry SHALL to SHOULD be present and contain Medication Activity 5. Relax text/reference/@value to SHOULD [0..1] be present. 6. Replace statusCode SHOULD with SHALL be [1..1] present. 7. effectiveTime updated to SHALL be [1..1] present and SHOULD [0..*]. See guides for usage. 	<ul style="list-style-type: none"> 1. CCD templateId no longer required 2. @classsCode updated to SHALL [1..1] be 'SBADM' 3. @moodCode changed to require value from 2.16.840.1.113883.11.20.9.18 (effect is same). 4. code may be present 5. add text SHOULD [0..1] be present. 6. Replace statusCode SHOULD with SHALL be [1..1] present. 7. effectiveTime updated to SHALL be [1..1] present and SHOULD [0..*]. See guides for usage.

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
		<p>SHALL be [1..1] present</p> <p>7. effectiveTime updated to SHALL be [1..1] present and SHOULD [0..*]. See guides for usage.</p> <p>8. Add repeatNumber MAY [0..1] be present</p> <p>9. Constrain routeCode to values from 2.16.840.1.113883.3.88.12.321.8.7</p> <p>10. Constrain approachSiteCode to values from 2.16.840.1.113883.3.88.12.3221.8.9</p> <p>11. Simplify doseQuantity to single element. See guides for usage.</p> <p>12. Update rateQuantity to MAY be [0..1] present. See guides for usage.</p> <p>13. Update rateQuantity to contain @unit from 2.16.840.1.113883.1.11.12839</p> <p>14. add constraint that exactly one doseQuantity or rateQuantity SHOULD be present</p> <p>15. add maxDoseQuantity MAY be [0..1] present</p> <p>16. add administrationUnitCode MAY be [0..1] present</p> <p>17. update consumable to include Medication Information template. C83 templateId is no longer required.</p>	<p>and SHOULD [0..*]. See guides for usage.</p> <p>8. Add repeatNumber MAY [0..1] be present</p> <p>9. Update routeCode constraint to MAY be [0..1]</p> <p>10. update doseQuantity to SHOULD be [0..1] present</p> <p>11. add rateQuantity MAY be [0..1] present and contain @unit from 2.16.840.1.113883.1.11.12839</p> <p>12. add constraint that exactly one doseQuantity or rateQuantity SHOULD be present</p> <p>13. update maxDoseQuantity to MAY be [0..1] present</p> <p>14. update consumable to include Medication Information template. C83 templateId is no longer required.</p> <p>15. Add performer MAY be [0..1] be present.</p> <p>16. Update participant to Drug Vehicle template, replacing inline constraints.</p> <p>17. Replace entryRelationship/[RSON] distal end with Indication template. CCD templateId no longer required.</p> <p>18. Replace entryRelationship/[SUBJ] distal end with Instructions template. CCD templateId(s) no</p>	<p>8. Add repeatNumber MAY [0..1] be present</p> <p>9. Relax routeCode to MAY be [0..1] present and update to values from 2.16.840.1.113883.3.88.12.321.8.7</p> <p>10. approachSiteCode MAY be [0..1] present with values from 2.16.840.1.113883.3.88.12.321.8.9</p> <p>11. add doseQuantity SHOULD [0..1] contain @unit and be from 2.16.840.1.113883.1.11.12839</p> <p>12. update rateQuantity to MAY be [0..1] present and contain @unit from 2.16.840.1.113883.1.11.12839</p> <p>13. add administrationUnitCode MAY be [0..1] present</p> <p>14. add consumable SHALL [1..1] to include Medication Information</p> <p>15. update performer MAY be [0..1] be present.</p> <p>16. Add participant MAY be [0..*] present to Drug Vehicle</p> <p>17. Replace entryRelationship/[RSON] distal end with Indication template. CCD templateId no longer required.</p> <p>18. Replace entryRelationship/[SUBJ] distal end with Instructions template. CCD templateId(s) no</p>

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
		<p>Information template. IHE templateId is no longer required.</p> <p>18.Add performer MAY be [0..1] be present.</p> <p>19.Add participant MAY be [0..*] present to Drug Vehicle</p> <p>20.Replace entryRelationship/[RSO N] distal Act with Indication template. IHE templateId no longer required.</p> <p>21.Replace entryRelationship/[SUBJ] distal end with Instructions template. IHE templateId no longer required.</p> <p>22.Replace entryRelationship/[REFR] distal end with Medication Supply Order template. IHE templateId(s) no longer required.</p> <p>23.Add entryRelationship/[REFR] to Medication Dispense template MAY be [0..1] present.</p> <p>24.Add entryRelationship/ [CAUS] to Reaction Observation template MAY be [0..1] present.</p> <p>25.Update precondition to use Precondition for</p>	<p>entryRelationship/[SUBJ] distal end with Instructions template. C83 templateId(s) no longer required.</p> <p>19.Replace entryRelationship/[REFR] distal end with Medication Supply Order template. C83 templateId(s) no longer required.</p> <p>20.Replace entryRelationship/[REFR] with Medication Dispense template. C83 templateId(s) no longer required.</p> <p>21.Replace entryRelationship/[CAUS] with Reaction Observation template. C83 templateId(s) no longer required.</p> <p>22.Add precondition to Precondition for Substance Administration template.</p>	<p>longer required.</p> <p>19.Replace entryRelationship/[REFR] distal end with Medication Supply Order template. CCD templateId(s) no longer required.</p> <p>20.Add entryRelationship/[REFR] to Medication Dispense template MAY be [0..1] present.</p> <p>21.Add entryRelationship/[CAUS] to Reaction Observation template MAY be [0..1] present.</p> <p>22.Add precondition to Precondition for Substance Administration template.</p>

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
		<p>Substance Administration template. Remove existing precondition elements.</p> <p>26. Remove entryRelationship/[COMP] constraint.</p>		
Medication Use – None Known (2.16.840.1.113883.10.20.22.4.29)		No equivalent template.	No equivalent template.	No equivalent template.
Medication Information (2.16.840.1.113883.10.20.22.4.23)	2.16.840.1.113883.10.20.1.53 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.7.2 (IHE) 2.16.840.1.113883.3.88.11.83.8.2 (C83)	<ol style="list-style-type: none"> 1. IHE templateId(s) no longer required 2. consumable/manufacturedProduct/manufacturedMaterial/code SHALL be selected from 2.16.1.113883.3.88.12.80.17. Remove any conflicting code constraints. 	<ol style="list-style-type: none"> 1. C83 templateId(s) no longer required. 2. consumable/manufacturedProduct/manufacturedMaterial/code SHALL be selected from 2.16.1.113883.3.88.12.80.17. Remove any conflicting code constraints. 	<ol style="list-style-type: none"> 1. CCD templateId no longer required 2. consumable/manufacturedProduct/manufacturedMaterial/code SHALL be selected from 2.16.1.113883.3.88.12.80.17. Remove any conflicting code constraints.
Drug Vehicle (2.16.840.1.113883.10.20.22.4.24)		No equivalent template.	<ol style="list-style-type: none"> 1. relax name element to MAY be [0..1] present (in playingEntity) 2. update code element to SHALL be [1..1] present (in playingEntity). 	No equivalent template.
Indication (2.16.840.1.113883.10.20.22.4.19)	2.16.840.1.113883.10.20.1.27 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.4.1 (IHE) 2.16.840.1.113883.10.20.1.28 (C83)	<ol style="list-style-type: none"> 1. IHE templateId(s) no longer required. 2. Replace IHE template with Indication template. 	<ol style="list-style-type: none"> 1. C83 templateId(s) no longer required 2. Remove observation/text constraint 	<ol style="list-style-type: none"> 1. CCD templateId(s) no longer required. 2. Replace CCD template with Indication.

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
Instructions (2.16.840.1.113 883.10.20.22.4. 20)	2.16.840.1.113883.10.20.1.49 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.3 (IHE)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required. 2. Remove code SHOULD be 'PINSTRUCT' codeSystem 1.3.6.1.4.1.19376.1.5.3.2 	<ul style="list-style-type: none"> 1. C83 templateId(s) no longer required 2. Remove code SHOULD be 'PINSTRUCT' codeSystem 1.3.6.1.4.1.19376.1.5.3.2 	<ul style="list-style-type: none"> 1. CCD templateId(s) no longer required. 2. Add text SHOULD be [0..1] present and add dependent constraints 3. Add statusCode SHALL be [1..1] present with value 'completed'.
Precondition for Substance Administration (2.16.840.1.113 883.10.20.22.4. 25)		No equivalent template.	No equivalent template.	No equivalent template.
Reaction Observation (2.16.840.1.113 883.10.20.22.4. 9)	2.16.840.1.113883.10.20.1.54 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.5 (IHE)	<ul style="list-style-type: none"> 1. IHE templateId(s) no longer required. 2. Add id SHALL be [1..1] present 3. Add code SHALL be [1..1] present 4. Add text SHOULD be [0..1] present, and child constraints 5. Add effectiveTime SHOULD be [0..1] present and child constraints 6. Add value SHALL be [1..1] present with type of 'CD' and value from 2.16.3.88.12.3221.7.4 7. Replace entryRelationship/[SUBJ] templateId with Severity Observation 2.16.840.1.113883.10.2 	No existing template.	<ul style="list-style-type: none"> 1. CCD templateId(s) no longer required. 2. Add id SHALL be [1..1] present 3. Add code SHALL be [1..1] present 4. Add text SHOULD be [0..1] present, and child constraints 5. Add effectiveTime SHOULD be [0..1] present and child constraints 6. Add value SHALL be [1..1] present with type of 'CD' and value from 2.16.3.88.12.3221.7.4 7. Add entryRelationship/[RSON] to template Procedure Activity Procedure MAY be [0..1] present 8. Add entryRelationship/[RSON] to template Medication Activity MAY be [0..1] present.

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
		<p>0.22.4.8</p> <p>8. Add entryRelationship/[RSO N] to template Procedure Activity Procedure MAY be [0..1] present</p> <p>9. Add entryRelationship/[RSO N] to template Medication Activity MAY be [0..1] present.</p> <p>10. Remove entryRelationship/[REFR] constraint</p> <p>11. Remove entryRelationship/[SUBJ] to comments template constraint.</p>		
Severity Observation (2.16.840.1.113883.10.20.22.4.8)	2.16.840.1.113883.10.20.1.55 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.1 (IHE)	<p>1. IHE templateId(s) no longer required.</p> <p>2. Relax text to SHOULD be [0..1] present</p> <p>3. Update value to be from 2.16.840.1.113883.3.88.12.321.6.8</p>	No existing template.	<p>1. CCD templateId(s) no longer required.</p> <p>2. Add text SHOULD be [0..1] present and child constraints.</p> <p>3. Update value to be from 2.16.840.1.113883.3.88.12.321.6.8</p>
Medication Supply Order Entry (2.16.840.1.113883.10.20.22.4.17)	2.16.840.1.113883.10.20.1.34 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.7.3 (IHE) 2.16.840.1.113883.3.88.11.83.8.3 (C83)	<p>1. IHE templateId(s) no longer required.</p> <p>2. Constrain @moodCode to INT</p> <p>3. Update id to SHALL [1..*]</p> <p>4. Add statusCode SHALL be [1..1] present</p> <p>5. Add effectiveTime/high SHOULD be [0..1] present</p> <p>6. Add constraint that at</p>	<p>1. C83 templateId(s) no longer required.</p> <p>2. Constrain @moodCode to INT</p> <p>3. Update statusCode to SHALL be [1..1] present</p> <p>4. Add effectiveTime/high SHOULD be [0..1] present</p> <p>5. Add effectiveTime/high SHOULD be [0..1] present</p> <p>6. Update repeatNumber to SHOULD be [0..1] present</p>	<p>1. CCD templateId(s) no longer required.</p> <p>2. Constrain @moodCode to INT</p> <p>3. Update statusCode to SHALL be [1..1] present</p> <p>4. Add effectiveTime/high SHOULD be [0..1] present</p> <p>5. Update repeatNumber to SHOULD be [0..1] present</p> <p>6. Update quantity to SHOULD be [0..1] present</p>

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
		<p>least 1 of product/Medication Information or product/Immunization Medication Information SHALL be [1..1] present</p> <p>7. Add entryRelationship/[SUBJ] to Instructions MAY be [0..1] present along with child constraints</p> <p>8. Remove all other differing constraints</p>	<p>6. Update repeatNumber to SHOULD be [0..1] present</p> <p>7. Update quantity to SHOULD be [0..1] present</p> <p>8. Add constraint that at least 1 of product/Medication Information or product/Immunization Medication Information SHALL be [1..1] present</p> <p>9. Add entryRelationship/[SUBJ] to Instructions MAY be [0..1] present along with child constraints</p> <p>10. Remove all other differing constraints</p>	<p>7. Add constraint that at least 1 of product/Medication Information or product/Immunization Medication Information SHALL be [1..1] present</p> <p>8. Add entryRelationship/[SUBJ] to Instructions MAY be [0..1] present along with child constraints</p> <p>9. Remove all other differing constraints</p>
Medication Dispense Entry (2.16.840.1.113883.10.20.1.34 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.7.3 (IHE) 2.16.840.1.113883.3.88.11.83.8.3 (C83)	2.16.840.1.113883.10.20.1.34 (CCD) 1.3.6.1.4.1.19376.1.5.3.1.4.7.3 (IHE) 2.16.840.1.113883.3.88.11.83.8.3 (C83)	<p>1. IHE templateId(s) no longer required.</p> <p>2. Constrain @moodCode to EVN</p> <p>3. Update id to SHALL [1..*]</p> <p>4. Add statusCode SHALL be [1..1] present and from 2.16.840.1.113883.3.88.12.80.64</p> <p>5. Add effectiveTime SHOULD be [0..1] present</p> <p>6. Add constraint that at least 1 of product/Medication Information or product/Immunization Medication Information</p>	<p>1. C83 templateId(s) no longer required.</p> <p>2. Constrain @moodCode to EVN</p> <p>3. Update id to SHALL [1..*]; remove additional constraints</p> <p>4. Add statusCode SHALL be [1..1] present and from 2.16.840.1.113883.3.88.12.80.64</p> <p>5. Add effectiveTime SHOULD be [0..1] present</p> <p>6. update repeatNumber SHOULD be [0..1] present</p> <p>7. Update quantity to SHOULD be [0..1] present</p> <p>8. Add constraint that at least 1 of</p>	<p>1. CCD templateId(s) no longer required.</p> <p>2. Constrain @moodCode to EVN</p> <p>3. Update statusCode to SHALL be [1..1] present</p> <p>4. Update repeatNumber to SHOULD be [0..1] present</p> <p>5. Update quantity to SHOULD be [0..1] present</p> <p>6. Add constraint that at least 1 of product/Medication Information or product/Immunization Medication Information SHALL be [1..1] present</p> <p>7. Add entryRelationship/[REFR] to Medication Supply Order MAY be [0..1] present along with child constraints</p>

Title (templateId)	Previous templateId	Changes from IHE	Changes from HITSP C83	Changes from CCD
		<p>SHALL be [1..1] present</p> <p>7. Add entryRelationship/[REFR] to Medication Supply Order MAY be [0..1] present along with child constraints</p> <p>8. Add assignedEntity/Consolidated US Realm Header Address template SHOULD be [0..1] present</p> <p>9. Remove all other differing constraints</p>	<p>product/Medication Information or product/Immunization Medication Information SHALL be [1..1] present</p> <p>9. Add performer MAY be [0..1] present</p> <p>10. Add entryRelationship/[REFR] to Medication Supply Order MAY be [0..1] present along with child constraints</p> <p>11. Add assignedEntity/Consolidated US Realm Header Address template SHOULD be [0..1] present</p> <p>12. Remove all other differing constraints</p>	<p>8. Add assignedEntity/Consolidated US Realm Header Address template SHOULD be [0..1] present</p> <p>9. Remove all other differing constraints</p>

APPENDIX C — TEMPLATE IDS IN THIS GUIDE

The following table lists all templateIDs in this guide. The sections for document types include tables showing the template containment within each document type:

- [CCD](#)
- [Consultation Note](#)
- [Diagnostic Imaging Report](#)
- [Discharge Summary](#)
- [History and Physical](#)
- [Operative Note](#)
- [Procedure Note](#)
- [Progress Note](#)

Table 325: Template Ids Alphabetically by Template Type

Template Title	Template Type	templateId
US Realm Address (AD.US.FIELDDED)	header	2.16.840.1.113883.10.20.22.5.2
US Realm Date and Time (DT.US.FIELDDED)		2.16.840.1.113883.10.20.22.5.3
US Realm Date and Time (DTM.US.FIELDDED)		2.16.840.1.113883.10.20.22.5.4
US Realm Patient Name (PTN.US.FIELDDED)		2.16.840.1.113883.10.20.22.5.1
US Realm Person Name (PN.US.FIELDDED)		2.16.840.1.113883.10.20.22.5.1.1
Consultation Note	document	2.16.840.1.113883.10.20.22.1.4
Continuity of Care Document (CCD)	document	2.16.840.1.113883.10.20.22.1.2
Diagnostic Imaging Report	document	2.16.840.1.113883.10.20.22.1.5
Discharge Summary	document	2.16.840.1.113883.10.20.22.1.8
History and Physical	document	2.16.840.1.113883.10.20.22.1.3
Operative Note	document	2.16.840.1.113883.10.20.22.1.7
Procedure Note	document	2.16.840.1.113883.10.20.22.1.6
Progress Note	document	2.16.840.1.113883.10.20.22.1.9
Unstructured Document	document	2.16.840.1.113883.10.20.22.1.10
US Realm Header	document	2.16.840.1.113883.10.20.22.1.1
Advance Directives Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.21
Advance Directives Section (entries required)	section	2.16.840.1.113883.10.20.22.2.21.1
Allergies Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.6
Allergies Section (entries required)	section	2.16.840.1.113883.10.20.22.2.6.1

Template Title	Template Type	templateId
Anesthesia Section	section	2.16.840.1.113883.10.20.22.2.25
Assessment and Plan Section	section	2.16.840.1.113883.10.20.22.2.9
Assessment Section	section	2.16.840.1.113883.10.20.22.2.8
Chief Complaint and Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.13
Chief Complaint Section	section	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
Complications Section	section	2.16.840.1.113883.10.20.22.2.37
DICOM Object Catalog Section - DCM 121181	section	2.16.840.1.113883.10.20.6.1.1
Discharge Diet Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.33
Encounters Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.22
Encounters Section (entries required)	section	2.16.840.1.113883.10.20.22.2.22.1
Family History Section	section	2.16.840.1.113883.10.20.22.2.15
Fetus Subject Context	section	2.16.840.1.113883.10.20.6.2.3
Findings Section (DIR)	section	2.16.840.1.113883.10.20.6.1.2
Functional Status Section	section	2.16.840.1.113883.10.20.22.2.14
General Status Section	section	2.16.840.1.113883.10.20.2.5
History of Past Illness Section	section	2.16.840.1.113883.10.20.22.2.20
History of Present Illness Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.4
Hospital Admission Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.43
Hospital Admission Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.44
Hospital Consultations Section	section	2.16.840.1.113883.10.20.22.2.42
Hospital Course Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.5
Hospital Discharge Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.24
Hospital Discharge Instructions Section	section	2.16.840.1.113883.10.20.22.2.41
Hospital Discharge Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.11
Hospital Discharge Medications Section (entries required)	section	2.16.840.1.113883.10.20.22.2.11.1
Hospital Discharge Physical Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.26
Hospital Discharge Studies Summary Section	section	2.16.840.1.113883.10.20.22.2.16
Immunizations Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.2
Immunizations Section (entries required)	section	2.16.840.1.113883.10.20.22.2.2.1
Implants Section	section	2.16.840.1.113883.10.20.22.2.33
Instructions Section	section	2.16.840.1.113883.10.20.22.2.45
Interventions Section	section	2.16.840.1.113883.10.20.21.2.3
Medical (General) History Section	section	2.16.840.1.113883.10.20.22.2.39
Medical Equipment Section	section	2.16.840.1.113883.10.20.22.2.23

Template Title	Template Type	templateId
Medications Administered Section	section	2.16.840.1.113883.10.20.22.2.38
Medications Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.1
Medications Section (entries required)	section	2.16.840.1.113883.10.20.22.2.1.1
Objective Section	section	2.16.840.1.113883.10.20.21.2.1
Observer Context	section	2.16.840.1.113883.10.20.6.2.4
Operative Note Fluids Section	section	2.16.840.1.113883.10.20.7.12
Operative Note Surgical Procedure Section	section	2.16.840.1.113883.10.20.7.14
Payers Section	section	2.16.840.1.113883.10.20.22.2.18
Physical Exam Section	section	2.16.840.1.113883.10.20.2.10
Plan of Care Section	section	2.16.840.1.113883.10.20.22.2.10
Planned Procedure Section	section	2.16.840.1.113883.10.20.22.2.30
Postoperative Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.35
Postprocedure Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.36
Preoperative Diagnosis Section	section	2.16.840.1.113883.10.20.22.2.34
Problem Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.5
Problem Section (entries required)	section	2.16.840.1.113883.10.20.22.2.5.1
Procedure Description Section	section	2.16.840.1.113883.10.20.22.2.27
Procedure Disposition Section	section	2.16.840.1.113883.10.20.18.2.12
Procedure Estimated Blood Loss Section	section	2.16.840.1.113883.10.20.18.2.9
Procedure Findings Section	section	2.16.840.1.113883.10.20.22.2.28
Procedure Implants Section	section	2.16.840.1.113883.10.20.22.2.40
Procedure Indications Section	section	2.16.840.1.113883.10.20.22.2.29
Procedure Specimens Taken Section	section	2.16.840.1.113883.10.20.22.2.31
Procedures Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.7
Procedures Section (entries required)	section	2.16.840.1.113883.10.20.22.2.7.1
Reason for Referral Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.1
Reason for Visit Section	section	2.16.840.1.113883.10.20.22.2.12
Results Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.3
Results Section (entries required)	section	2.16.840.1.113883.10.20.22.2.3.1
Review of Systems Section	section	1.3.6.1.4.1.19376.1.5.3.1.3.18
Social History Section	section	2.16.840.1.113883.10.20.22.2.17
Subjective Section	section	2.16.840.1.113883.10.20.21.2.2
Surgery Description Section	section	2.16.840.1.113883.10.20.22.2.26
Surgical Drains Section	section	2.16.840.1.113883.10.20.7.13
Vital Signs Section (entries optional)	section	2.16.840.1.113883.10.20.22.2.4
Vital Signs Section (entries required)	section	2.16.840.1.113883.10.20.22.2.4.1
Admission Medication	entry	2.16.840.1.113883.10.20.22.4.36
Advance Directive Observation	entry	2.16.840.1.113883.10.20.22.4.48

Template Title	Template Type	templateId
Age Observation	entry	2.16.840.1.113883.10.20.22.4.31
Allergy - Intolerance Observation	entry	2.16.840.1.113883.10.20.22.4.7
Allergy Problem Act	entry	2.16.840.1.113883.10.20.22.4.30
Allergy Status Observation	entry	2.16.840.1.113883.10.20.22.4.28
Assessment Scale Observation	entry	2.16.840.1.113883.10.20.22.4.69
Authorization Activity	entry	2.16.840.1.113883.10.20.1.19
Boundary Observation	entry	2.16.840.1.113883.10.20.6.2.11
Caregiver Characteristics	entry	2.16.840.1.113883.10.20.22.4.72
Code Observations	entry	2.16.840.1.113883.10.20.6.2.13
Cognitive Status Problem Observation	entry	2.16.840.1.113883.10.20.22.4.73
Cognitive Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.74
Cognitive Status Result Organizer	entry	2.16.840.1.113883.10.20.22.4.75
Comment Activity	entry	2.16.840.1.113883.10.20.22.4.64
Coverage Activity	entry	2.16.840.1.113883.10.20.22.4.60
Deceased Observation	entry	2.16.840.1.113883.10.20.22.4.79
Discharge Medication	entry	2.16.840.1.113883.10.20.22.4.35
Drug Vehicle	entry	2.16.840.1.113883.10.20.22.4.24
Encounter Activities	entry	2.16.840.1.113883.10.20.22.4.49
Encounter Diagnosis	entry	2.16.840.1.113883.10.20.22.4.80
Estimated Date of Delivery	entry	2.16.840.1.113883.10.20.15.3.1
Family History Death Observation	entry	2.16.840.1.113883.10.20.22.4.47
Family History Observation	entry	2.16.840.1.113883.10.20.22.4.46
Family History Organizer	entry	2.16.840.1.113883.10.20.22.4.45
Functional Status Problem Observation	entry	2.16.840.1.113883.10.20.22.4.68
Functional Status Result Observation	entry	2.16.840.1.113883.10.20.22.4.67
Functional Status Result Organizer	entry	2.16.840.1.113883.10.20.22.4.66
5.19 Observation	entry	2.16.840.1.113883.10.20.22.4.5
Highest Pressure Ulcer Stage	entry	2.16.840.1.113883.10.20.22.4.77
Hospital Admission Diagnosis	entry	2.16.840.1.113883.10.20.22.4.34
Hospital Discharge Diagnosis	entry	2.16.840.1.113883.10.20.22.4.33
Immunization Activity	entry	2.16.840.1.113883.10.20.22.4.52
Immunization Medication Information	entry	2.16.840.1.113883.10.20.22.4.54
Immunization Refusal Reason	entry	2.16.840.1.113883.10.20.22.4.53
Indication	entry	2.16.840.1.113883.10.20.22.4.19
Instructions	entry	2.16.840.1.113883.10.20.22.4.20
Medication Activity	entry	2.16.840.1.113883.10.20.22.4.16
Medication Dispense	entry	2.16.840.1.113883.10.20.22.4.18
Medication Information	entry	2.16.840.1.113883.10.20.22.4.23

Template Title	Template Type	templateId
Medication Supply Order	entry	2.16.840.1.113883.10.20.22.4.17
Medication Use - None Known (deprecated)	entry	2.16.840.1.113883.10.20.22.4.29
Non-Medicinal Supply Activity	entry	2.16.840.1.113883.10.20.22.4.50
Number of Pressure Ulcers Observation	entry	2.16.840.1.113883.10.20.22.4.76
Plan of Care Activity Act	entry	2.16.840.1.113883.10.20.22.4.39
Plan of Care Activity Encounter	entry	2.16.840.1.113883.10.20.22.4.40
Plan of Care Activity Observation	entry	2.16.840.1.113883.10.20.22.4.44
Plan of Care Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.41
Plan of Care Activity Substance Administration	entry	2.16.840.1.113883.10.20.22.4.42
Plan of Care Activity Supply	entry	2.16.840.1.113883.10.20.22.4.43
Policy Activity	entry	2.16.840.1.113883.10.20.22.4.61
Postprocedure Diagnosis	entry	2.16.840.1.113883.10.20.22.4.51
Precondition for Substance Administration	entry	2.16.840.1.113883.10.20.22.4.25
Pregnancy Observation	entry	2.16.840.1.113883.10.20.15.3.8
Preoperative Diagnosis	entry	2.16.840.1.113883.10.20.22.4.65
Pressure Ulcer Observation	entry	2.16.840.1.113883.10.20.22.4.70
Problem Concern Act (Condition)	entry	2.16.840.1.113883.10.20.22.4.3
Problem Observation	entry	2.16.840.1.113883.10.20.22.4.4
Problem Status	entry	2.16.840.1.113883.10.20.22.4.6
Procedure Activity Act	entry	2.16.840.1.113883.10.20.22.4.12
Procedure Activity Observation	entry	2.16.840.1.113883.10.20.22.4.13
Procedure Activity Procedure	entry	2.16.840.1.113883.10.20.22.4.14
Procedure Context	entry	2.16.840.1.113883.10.20.6.2.5
Product Instance	entry	2.16.840.1.113883.10.20.22.4.37
Purpose of Reference Observation	entry	2.16.840.1.113883.10.20.6.2.9
Quantity Measurement Observation	entry	2.16.840.1.113883.10.20.6.2.14
Reaction Observation	entry	2.16.840.1.113883.10.20.22.4.9
Referenced Frames Observation	entry	2.16.840.1.113883.10.20.6.2.10
Result Observation	entry	2.16.840.1.113883.10.20.22.4.2
Result Organizer	entry	2.16.840.1.113883.10.20.22.4.1
Series Act	entry	2.16.840.1.113883.10.20.22.4.63
Service Delivery Location	entry	2.16.840.1.113883.10.20.22.4.32
Severity Observation	entry	2.16.840.1.113883.10.20.22.4.8
Smoking Status Observation	entry	2.16.840.1.113883.10.22.4.78
Social History Observation	entry	2.16.840.1.113883.10.20.22.4.38
SOP Instance Observation	entry	2.16.840.1.113883.10.20.6.2.8

Template Title	Template Type	templateId
<u>Study Act</u>	entry	2.16.840.1.113883.10.20.6.2.6
<u>Text Observation</u>	entry	2.16.840.1.113883.10.20.6.2.12
<u>Tobacco Use</u>	entry	2.16.840.1.113883.10.20.22.4.85
<u>Vital Sign Observation</u>	entry	2.16.840.1.113883.10.20.22.4.27
<u>Vital Signs Organizer</u>	entry	2.16.840.1.113883.10.20.22.4.26
<u>Physician of Record Participant</u>	unspecified	2.16.840.1.113883.10.20.6.2.2
<u>Physician Reading Study Performer</u>	unspecified	2.16.840.1.113883.10.20.6.2.1

APPENDIX D — CODE SYSTEMS IN THIS GUIDE

The following table lists all the code systems in this guide. The next two appendices list all value sets (vocabularies) and single-value bindings.

Table 326: Code Systems in This Guide

Code System OID	Code System Name
1.0.3166.1	ISO 3166-1 Country Codes
1.2.840.10008.2.16.4	DCM
2.16.840.1.113883.1.11.11526	Internet Society Language
2.16.840.1.113883.12.292	Vaccines administered (CVX)
2.16.840.1.113883.5.1	Administrative Gender
2.16.840.1.113883.5.1001	ActMood
2.16.840.1.113883.5.1076	Religious Affiliation
2.16.840.1.113883.5.110	RoleClass
2.16.840.1.113883.5.111	RoleCode
2.16.840.1.113883.5.1119	AddressUse
2.16.840.1.113883.5.14	ActStatus
2.16.840.1.113883.5.2	MaritalStatus
2.16.840.1.113883.6.1	LOINC
2.16.840.1.113883.6.101	NUCC Health Care Provider Taxonomy
2.16.840.1.113883.6.104	ICD9 CM Procedures
2.16.840.1.113883.6.12	CPT-4
2.16.840.1.113883.5.25	Confidentiality Code
2.16.840.1.113883.3.26.1.1	National Cancer Institute (NCI) Thesaurus
2.16.840.1.113883.6.231	US Postal Codes
2.16.840.1.113883.6.238	Race and Ethnicity - CDC
2.16.840.1.113883.6.259	HealthcareServiceLocation
2.16.840.1.113883.5.4	ActCode
2.16.840.1.113883.5.43	EntityNamePartQualifier
2.16.840.1.113883.5.45	EntityNameUse
2.16.840.1.113883.6.255.1336	ASC X12
2.16.840.1.113883.5.6	HL7ActClass
2.16.840.1.113883.5.60	LanguageAbilityMode
2.16.840.1.113883.5.61	LanguageAbilityProficiency
2.16.840.1.113883.3.26.1.5	NDF-RT
2.16.840.1.113883.5.7	ActPriority
2.16.840.1.113883.4.9	Unique Ingredient Identifier (UNII)
2.16.840.1.113883.5.8	ActReason
2.16.840.1.113883.5.83	ObservationInterpretation
2.16.840.1.113883.5.88	ParticipationFunction

Code System OID	Code System Name
2.16.840.1.113883.5.89	Participationsignature
2.16.840.1.113883.6.8	Unified Code for Units of Measure (UCUM)
2.16.840.1.113883.6.88	RXNorm
2.16.840.1.113883.6.92	FIPS 5-2 (State)
2.16.840.1.113883.6.96	SNOMED CT
2.16.840.1.113883.4.6	National Provider ID (NPI)

APPENDIX E — VALUE SETS IN THIS GUIDE

The following table lists all the value sets (vocabularies) in this guide.

2.16.840.1.113883.11.20.9.41

Table 327: Value Sets in This Guide

ValueSet OID	ValueSet Name	Binding
2.16.840.1.113883.1.11.16866	ActPriority	DYNAMIC
2.16.840.1.113883.1.11.1	Administrative Gender (HL7 V3)	DYNAMIC
2.16.840.1.113883.1.11.20.2	AdvanceDirectiveTypeCode	STATIC
2.16.840.1.113883.11.20.9.21	AgePQ_UCUM	DYNAMIC
2.16.840.1.113883.3.88.12.3221.6.2	Allergy/Adverse Event Type	DYNAMIC
2.16.840.1.113883.3.88.12.3221.8.9	Body Site Value Set	DYNAMIC
2.16.840.1.113883.11.20.9.31	ConsultDocumentType	DYNAMIC
2.16.840.1.113883.3.88.12.80.63	CountryValueSet	DYNAMIC
2.16.840.1.113883.1.11.18877	Coverage Role Type Value Set	DYNAMIC
2.16.840.1.113883.11.20.9.28	DICOMPurposeOfReference	DYNAMIC
2.16.840.1.113883.11.20.9.30	DICOMQuantityMeasurementType Codes	DYNAMIC
2.16.840.1.113883.11.20.9.32	DIRDocumentTypeCodes	DYNAMIC
2.16.840.1.113883.11.20.9.29	DIRQuantityMeasurementTypeCodes	DYNAMIC
2.16.840.1.113883.11.20.4.1	DischargeSummary DocumentTypeCode	DYNAMIC
2.16.840.1.113883.3.88.12.80.32	EncounterTypeCode	DYNAMIC
2.16.840.1.113883.1.11.15913	EntityNameUse	STATIC
2.16.840.1.113883.11.20.9.26	EntityPersonNamePartQualifier	STATIC
2.16.840.1.113883.1.11.19579	FamilyHistoryRelatedSubjectCode	DYNAMIC
2.16.840.1.113883.1.11.10416	FinanciallyResponsiblePartyType	DYNAMIC
2.16.840.1.113883.3.88.12.3221.5.2	Health Insurance Type Value Set	DYNAMIC
2.16.840.1.114222.4.11.1066	Healthcare Provider Taxonomy (NUCC – HIPAA)	DYNAMIC
2.16.840.1.113883.1.11.20275	HealthcareServiceLocation	DYNAMIC
2.16.840.1.113883.1.11.20.12	HealthStatus	DYNAMIC
2.16.840.1.113883.1.11.15836	HITSP Ethnicity Value Set	DYNAMIC
2.16.840.1.113883.3.88.12.80.62	HITSP Vital Sign Result Type	DYNAMIC

ValueSet OID	ValueSet Name	Binding
2.16.840.1.113883.3.88.12.80.68	HITSPProblemStatus	DYNAMIC
2.16.840.1.113883.1.11.16926	HL7 BasicConfidentialityKind	STATIC
2.16.840.1.113883.1.11.12249	HL7 LanguageAbilityMode	DYNAMIC
2.16.840.1.113883.1.11.12212	HL7 Marital Status	DYNAMIC
2.16.840.1.113883.1.11.19185	HL7 Religious Affiliation	DYNAMIC
2.16.840.1.113883.1.11.20.22	HPDocumentType	DYNAMIC
2.16.840.1.113883.11.20.9.33	INDRoleclassCodes	STATIC
2.16.840.1.113883.3.88.12.80.20	Ingredient Name	DYNAMIC
2.16.840.1.113883.1.11.11526	Language	DYNAMIC
2.16.840.1.113883.1.11.12199	LanguageAbilityProficiency	DYNAMIC
2.16.840.1.113883.3.88.12.80.16	Medication Brand Name	DYNAMIC
2.16.840.1.113883.3.88.12.80.17	Medication Clinical Drug	DYNAMIC
2.16.840.1.113883.3.88.12.80.18	Medication Drug Class	DYNAMIC
2.16.840.1.113883.3.88.12.80.64	Medication Fill Status	DYNAMIC
2.16.840.1.113883.3.88.12.3221.8.11	Medication Product Form	DYNAMIC
2.16.840.1.113883.3.88.12.3221.8.7	Medication Route FDA Value Set	DYNAMIC
2.16.840.1.113883.11.20.9.18	MoodCodeEvnInt	STATIC
2.16.840.1.113883.1.11.19717	No Immunization Reason Value Set	DYNAMIC
2.16.840.1.113883.3.88.12.80.33	NUBC UB-04 FL17-Patient Status	DYNAMIC
2.16.840.1.113883.11.20.9.34	Patient Education	DYNAMIC
2.16.840.1.113883.1.11.19563	Personal Relationship Role Type	DYNAMIC
2.16.840.1.113883.11.20.9.23	Plan of Care moodCode (Act/Encounter/Procedure)	STATIC
2.16.840.1.113883.11.20.9.25	Plan of Care moodCode (Observation)	STATIC
2.16.840.1.113883.11.20.9.24	Plan of Care moodCode (SubstanceAdministration/Supply)	STATIC
2.16.840.1.113883.1.11.10637	PostalAddressUse	STATIC
2.16.840.1.113883.3.88.12.80.2	PostalCodeValueSet	DYNAMIC
2.16.840.1.113883.11.20.9.36	Pressure Point	DYNAMIC
2.16.840.1.113883.11.20.9.35	Pressure Ulcer Stage	DYNAMIC
2.16.840.1.113883.3.88.12.3221.7.4	Problem	STATIC
2.16.840.1.113883.3.88.12.3221.6.8	Problem Severity	DYNAMIC
2.16.840.1.113883.3.88.12.3221.7.2	Problem Type	STATIC

ValueSet OID	ValueSet Name	Binding
2.16.840.1.113883.11.20.9.19	ProblemAct statusCode	STATIC
2.16.840.1.113883.3.88.12.80.28	Procedure	DYNAMIC
2.16.840.1.113883.11.20.9.22	ProcedureAct statusCode	DYNAMIC
2.16.840.1.113883.11.20.6.1	ProcedureNoteDocument TypeCodes	DYNAMIC
2.16.840.1.113883.11.20.8.1	ProgressNoteDocumentTypeCode	DYNAMIC
2.16.840.1.113883.3.88.12.3221.4	Provider Type	DYNAMIC
2.16.840.1.113883.1.11.14914	Race	DYNAMIC
2.16.840.1.113883.11.20.9.39	Result Status	STATIC
2.16.840.1.113883.11.20.9.38	Smoking Status	STATIC
2.16.840.1.113883.3.88.12.80.60	Social History Type Set Definition	STATIC
2.16.840.1.113883.3.88.12.80.1	StateValueSet	DYNAMIC
2.16.840.1.113883.11.20.7.1	SupportedFileFormats	STATIC
2.16.840.1.113883.11.20.1.1	SurgicalOperationNote DocumentTypeCode	DYNAMIC
2.16.840.1.113883.11.20.9.37	TargetSite Qualifiers	DYNAMIC
2.16.840.1.113883.11.20.9.20	Telecom Use (US Realm Header)	DYNAMIC
2.16.840.1.113883.11.20.9.41	Tobacco Use	DYNAMIC
2.16.840.1.113883.1.11.12839	UCUM Units of Measure (case sensitive)	DYNAMIC
2.16.840.1.113883.3.88.12.80.22	Vaccine Administered Value Set	DYNAMIC

APPENDIX F — SINGLE-VALUE BINDINGS IN THIS GUIDE

Table 328: Single-Value Bindings in This Guide

Code	Display Name	Code System OID
121181	Dicom Object Catalog	1.2.840.10008.2.16.4
182904002	Drug treatment unknown	2.16.840.1.113883.6.96
397659008	Age at Onset	2.16.840.1.113883.6.96
412307009	Drug vehicle	2.16.840.1.113883.6.96
419099009	Dead	2.16.840.1.113883.6.96
46680005	Vital Signs	2.16.840.1.113883.6.96
77386006	Pregnant	2.16.840.1.113883.6.96
ASSERTION	Assertion	2.16.840.1.113883.5.4
SEV	Severity Observation	2.16.840.1.113883.5.4
S		2.16.840.1.113883.5.89

APPENDIX G — EXTENSIONS TO CDA R2

Where there is a need to communicate information for which there is no suitable representation in CDA R2, extensions to CDA R2 have been developed. These extensions are described above in the context of the section where they are used. This section serves to summarize the extensions and provide implementation guidance.

Extensions created for this guide include:

- sdtc:raceCode - The raceCode extension allows for multiple races to be reported for a patient.
- sdtc:id - The id extension in the family history organizer on the related subject allows for unique identification of the family member(s).
- sdtc:deceasedInd - The deceasedInd extension (= “true” or “false”) in the family history organizer on the related subject is used inside to indicate if a family member is deceased.
- sdtc:deceasedTime - The deceasedTime extension in the family history organizer on the related subject allows for reporting the date and time a family member died.
- sdtc:birthTime - The `<sdtc:birthTime>` element allows for the birth date of any person to be recorded. The purpose of this extension is to allow the recording of the subscriber or member of a health plan in cases where the health plan eligibility system has different information on file than the provider does for the patient.
- sdtc:dischargeDispositionCode - The `sdtc:dischargeDispositionCode` element allows the provider to record a discharge disposition in an encounter activity.

To resolve issues that need to be addressed by extension, the developers of this guide chose to approach extensions as follows:

- An extension is a collection of element or attribute declarations and rules for their application to the CDA Release 2.0.
- All extensions are optional. An extension may be used, but need not be under this guide.
- A single namespace for all extension elements or attributes that may be used by this guide will be defined.
- The namespace for extensions created by the HL7 Structured Documents Working Group (formerly Structured Documents Technical Committee) shall be `urn:hl7-org:sdtc`.
- This namespace shall be used as the namespace for any extension elements or attributes that are defined by this implementation guide.
- Each extension element shall use the same HL7 vocabularies and data types used by CDA Release 2.0.

- Each extension element shall use the same conventions for order and naming as is used by the current HL7 tooling.
- An extension element shall appear in the XML where the expected RIM element of the same name would have appeared had that element not been otherwise constrained from appearing in the CDA XML schema.

APPENDIX H — XDS-SD AND US REALM CLINICAL DOCUMENT HEADER COMPARISON

The following table can help the implementer familiar with XDS-SD decide whether to assert conformance to Unstructured Documents and the US Realm Clinical Document Header constraints specified in this guide. [See [References](#) for a link to XDS-SD (Cross-Transaction Specifications and Content Specifications, Scanned Documents Module).]

Areas where this Unstructured Document specification and the Clinical Document Header constraints are more restrictive than XDS-SD have been highlighted in yellow.

Table 329: Comparison of XDS-SD and Clinical Document Header

CDA	XDS-SD	Clinical Document Header
ClinicalDocument	SHALL	SHALL
ClinicalDocument/ realmcode	SHALL	SHALL
ClinicalDocument/ typeId	SHALL	SHALL
ClinicalDocument/ templateId	SHALL	SHALL
ClinicalDocument/ id	SHALL	SHALL
ClinicalDocument/ code	SHALL	SHALL
ClinicalDocument/ title	SHOULD	SHALL
ClinicalDocument/ effectiveTime	SHALL	SHALL
ClinicalDocument/ confidentialityCode	SHALL	SHALL
ClinicalDocument/ languageCode	SHALL	SHALL
ClinicalDocument/ documentationOf/ serviceEvent/ effectiveTime	SHALL	Not required
ClinicalDocument/ recordTarget	SHALL	SHALL
ClinicalDocument/ recordTarget/ patientRole	SHALL	SHALL
ClinicalDocument/ recordTarget/ patientRole/ addr	SHALL	SHALL
ClinicalDocument/ recordTarget/ patientRole/ telecom	Not required	SHALL
ClinicalDocument/ recordTarget/ patientRole/ patient/ name	SHALL	SHALL
ClinicalDocument/ recordTarget/ patientRole/ patient/ administrativeGenderCode	SHALL	SHALL
ClinicalDocument/ recordTarget/ patientRole/ patient/ birthTime	SHALL	SHALL
ClinicalDocument/ author/ time	Not required	SHALL
ClinicalDocument/ author/ assignedAuthor	SHALL	SHALL

CDA	XDS-SD	Clinical Document Header
ClinicalDocument/ author/ assignedAuthor/ id	assignedPerson: SHOULD assignedAuthoringDevice: SHALL	SHALL
ClinicalDocument/ author/ assignedAuthor/ addr	Not required	SHALL
ClinicalDocument/ author/ assignedAuthor/ telecom	Not required	SHALL
ClinicalDocument/ custodian	SHALL	SHALL
ClinicalDocument/ custodian/ assignedCustodian/ representedCustodianOrganization/ name	SHALL	SHALL
ClinicalDocument/ custodian/ assignedCustodian/ representedCustodianOrganization/ addr	SHALL	SHALL
ClinicalDocument/ custodian/ assignedCustodian/ representedCustodianOrganization/ telecom	Not required	SHALL
ClinicalDocument/ author (scanner)	SHALL	
ClinicalDocument/ author/ assignedAuthor/ authoringDevice (scanner)	SHALL	
ClinicalDocument/ dataEnterer	SHALL	
ClinicalDocument/ legalAuthenticator	SHOULD	
ClinicalDocument/ component/ nonXMLBody	SHALL	

APPENDIX I — MIME MULTIPART/RELATED MESSAGES

The following text is taken from the Claims Attachments Implementation Guide (AIS00000) in Section 2.4
http://www.hl7.org/documentcenter/public/wg/ca/CDAR2AIS000R030_ImplementationGuideDraft.pdf. For up-to-date guidance, refer to the latest edition of that specification.

MIME Multipart/Related Messages

An attachment is comprised of the CDA document, including any supporting files necessary to render the attested content of the document. Two Internet request for comments (RFCs) are needed to properly construct the mime multipart message. When supporting files are needed, the collection of information shall be organized using a MIME multipart/related package constructed according to RFC 2557. Within the MIME package, supporting files must be encoded using Base-64. RFC-4648 should be used when encoding the contents of the MIME package using Base-64. Finally, RFC-2392 may be used to reference other content that appears in the same X12 transaction to use the same content to answer multiple questions for a single claim. Internet RFCs can be downloaded from the RFC editor page at <http://www.rfc-editor.org>.

RFC-2557 MIME Encapsulation of Aggregate Documents, Such as HTML (MHTML)

This RFC describes how to construct a MIME multipart/related package, and how URLs are resolved within content items of that package. RFC-2557 can be obtained at:
<http://www.rfc-editor.org/rfc/rfc2557.txt>

A MIME multipart/related package is made up of individual content items. Each content item has a MIME header identifying the item. Each content item is delimited from other content items using a string of application specified text. In addition, there must be an ending boundary. The actual content is recorded between these delimiter strings using a BASE-64 encoding of the content item. There is also a MIME header for the entire package.

The first content item of a multipart/related message supporting attachments is the CDA document, containing the header and structured or non-structured body. Subsequent content items included in this package will contain additional content that appears within the body of the document. The CDA document will reference these additional content items by their URLs.

Referencing Supporting Files in Multipart/Related Messages

Because the CDA document and its supporting files may have already existed in a clinical information system, references may already exist within the CDA document to URLs that are not accessible outside of the clinical information system that created the document. When the CDA document is sent via attachments, these URLs may no longer be accessible by the receiving information system. Therefore, each content item that is referenced by a URL within the CDA document must be included as a content item in the MIME package. Each content item may specify the URL by which it is

known using the Content-Location header. The receiver of this MIME package shall translate URL references according the RFC-2557. This will ensure resolution of the original URL to the correct content item within the MIME package. Thus, URL references contained within an original document need not be rewritten when the CDA package is transmitted. Instead, these URLs are simply supplied as the value of the Content-Location header in the MIME package.

This capability allows for the same content item to be referred to more than once in a MIME multipart/related package without requiring the content item to be supplied twice. However, it does not allow a separate MIME multipart/related package to contain references to information sent in a previously recorded package.

Referencing Documents from Other Multiparts within the Same X12 Transactions

RFC-2392 is used when referencing content across MIME package boundaries, but still contained within the same X12 transaction (ST to SE). This can occur when the same document answers multiple questions for a single claim. Each component of a MIME package may be assigned a content identifier using the Content-ID header for the content item. For example, this header would appear as:

Content-ID: <07EE4DAC-76C4-4a98-967E-F6EF9667DED1>

This content identifier is a unique identifier for the content item, which means it must never be used to refer to any other content item. RFC-2392 defines the cid: URL scheme (http: and ftp: are two other URL schemes). This URL scheme allows for references by the Content-ID header to be resolved. The URL for the content item identified above would be:

cid:07EE4DAC-76C4-4a98-967E-F6EF9667DED1

Receivers of the MIME multipart message must be able to resolve a cid: URL to the content item that it identifies. Senders must ensure that they only refer to items that have already been transmitted to the receiver by their cid: URL. Thus, this implementation guide prohibits forward URL references using the cid: URL scheme.

Content items shall not be referenced across X12 transactions using the cid: URL scheme. For example, if the payer previously requested information using a 277, and the provider returned that information in a MIME multipart/related package in a 275, and then the payer requested additional information in another 277, the provider may not refer to the content item previously returned in the prior 275 transaction.

APPENDIX J — ADDITIONAL PHYSICAL EXAMINATION SUBSECTIONS

Below is the list of additional optional subsections that may be used under the [Physical Examination](#) section. Most of the codes for these subsections are included in the HL7 document titled “CDAR2AIS0004R030, Additional Information Specification 0004: Clinical Reports Attachment,” which also lists [General Status \(10210-3\)](#) and [Vital Signs \(8716-3\)](#)—defined in this guide.

- 10190-7 MENTAL STATUS
- 11451-2 PSYCHIATRIC FINDINGS
- 10199-8 HEAD, PHYSICAL FINDINGS
- 10197-2 EYE, PHYSICAL FINDINGS
- 10195-6 EAR, PHYSICAL FINDINGS
- 10203-8 NOSE, PHYSICAL FINDINGS
- 11393-6 EARS & NOSE & MOUTH & THROAT, PHYSICAL FINDINGS
- 10201-2 MOUTH & THROAT & TEETH, PHYSICAL FINDINGS
- 51850-6 HEAD & EARS & EYES & NOSE & THROAT, PHYSICAL FINDINGS
- 11411-6 NECK, PHYSICAL FINDINGS
- 10207-9 THORAX & LUNGS, PHYSICAL FINDINGS
- 11391-0 CHEST, PHYSICAL FINDINGS
- 11392-8 CHEST WALL, PHYSICAL FINDINGS
- 10200-4 HEART, PHYSICAL FINDINGS
- 10193-1 BREASTS, PHYSICAL FINDINGS
- 10192-3 BACK, PHYSICAL FINDINGS
- 10191-5 ABDOMEN, PHYSICAL FINDINGS
- 10204-6 PELVIS, PHYSICAL FINDINGS
- 11403-3 GROIN, PHYSICAL FINDINGS
- 10198-0 GENITOURINARY TRACT, PHYSICAL FINDINGS
- 11400-9 GENITALIA, PHYSICAL FINDINGS
- 11401-7 GENITALIA FEMALE, PHYSICAL FINDINGS
- 11402-5 GENITALIA MALE, PHYSICAL FINDINGS
- 11388-6 BUTTOCKS, PHYSICAL FINDINGS
- 10205-3 RECTUM, PHYSICAL FINDINGS
- 10196-4 EXTREMITIES, PHYSICAL FINDINGS
- 11413-2 SHOULDER, PHYSICAL FINDINGS
- 11387-8 AXILLA, PHYSICAL FINDINGS
- 11386-0 UPPER ARM, PHYSICAL FINDINGS
- 11394-4 ELBOW, PHYSICAL FINDINGS
- 11398-5 FOREARM, PHYSICAL FINDINGS
- 11415-7 WRIST, PHYSICAL FINDINGS
- 11404-1 HAND, PHYSICAL FINDINGS
- 11406-6 HIP, PHYSICAL FINDINGS

11414-0 THIGH, PHYSICAL FINDINGS
11407-4 KNEE, PHYSICAL FINDINGS
11389-4 CALF, PHYSICAL FINDINGS
11385-2 ANKLE, PHYSICAL FINDINGS
11397-7 FOOT, PHYSICAL FINDINGS
10209-5 BALANCE+COORDINATION, PHYSICAL FINDINGS
10212-9 STRENGTH PHYSICAL FINDINGS
10211-1 SENSATION, PHYSICAL FINDINGS
10206-1 SKIN, PHYSICAL FINDINGS
10194-9 DEEP TENDON REFLEXES, PHYSICAL FINDINGS
10208-7 VESSELS, PHYSICAL FINDINGS
11384-5 PHYSICAL EXAMINATION BY ORGAN SYSTEMS
11447-0 HEMATOLOGIC+LYMPHATIC+IMMUNOLOGIC PHYSICAL FINDINGS
11390-2 CARDIOVASCULAR SYSTEM, PHYSICAL FINDINGS
11399-3 GASTROINTESTINAL SYSTEM, PHYSICAL FINDINGS
10202-0 NEUROLOGIC SYSTEM, PHYSICAL FINDINGS
11410-8 MUSCULOSKELETAL SYSTEM, PHYSICAL FINDINGS

APPENDIX K — ADDITIONAL EXAMPLES

This appendix contains various examples of use from this guide.

Names Examples

Figure 242: Correct use of name example 1

```
<name><given>John</given><given>Q.</given><family>Doe</family></name>
```

The name element in CDA contains mixed content. In XML, this means that name can contain a mix of character data and element markup in any order. The consequence of this is that all whitespace is significant, thus tab characters, carriage returns, space characters, etc. all become “part” of the person’s name.

Figure 243: Incorrect use of name example 1 - whitespace

```
<name>
  <given>John</given>
  <given>Q.</given>
  <family>Doe</family>
</name>
```

Figure 244: Incorrect use of Patient name example 2 - no tags

```
<name>John Q. Doe</name>
```

Addresses Examples

Figure 245: Correct use telecom address example

```
<telecom use="WP" value="tel:555-555-1212"/>
```

Figure 246: Correct use postal address example

```
<addr use="H"><streetAddressLine>17 Daws Rd.</streetAddressLine><city>Blue
Bell</city><state>MA</state><postalCode>02368</postalCode><country>US</country>
</addr>
```

Time Examples

Figure 247: Correct use of IVL_TS example

```
<effectiveTime>
  <low value='20110907' />
  <high value='20110909' />
</effectiveTime>
```

Figure 248: Correct use of TS with precision to minute example

```
<effectiveTime value='201109071023' />
```

Figure 249: Correct use of TS with time zone offset example

```
<effectiveTime value='201109071023-0500' />
```

Figure 250: Incorrect use of IVL_TS example

```
<effectiveTime value='20110907' />
```

Figure 251: Incorrect use of TS - insufficient precision example

```
<effectiveTime value='20110907' /> (must be precise to the minute)
```

Figure 252: Incorrect use of TS when time zone offset required example

```
<effectiveTime value='20110907' />
```

Use of effectiveTime with time zone where not relevant (precise only to the day)

Figure 253: Incorrect use of time zone offset - not enough precision example

```
<effectiveTime value="20110907-0500" />
```

CD Examples

Figure 254: Correct use of CD with no code example

```
<code nullFlavor='NI'>
  <originalText><reference value='#problem-1' /></originalText>
</code>
```

Figure 255: Incorrect use of CD with no code - missing nullFlavor attribute example

```
<code>
  <originalText><reference value='#problem-1' /></originalText>
</code>
```

APPENDIX L — LARGE UML DIAGRAMS

This appendix provides larger versions of three hard-to-read UML diagrams.

Figure 256: Immunizations section UML diagram (larger copy)

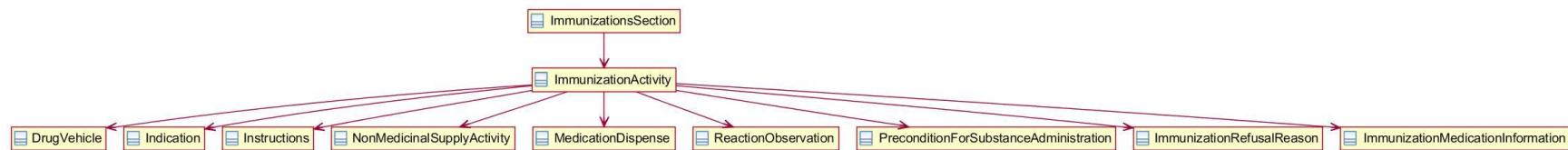


Figure 257: Functional Status section UML diagram (larger copy)

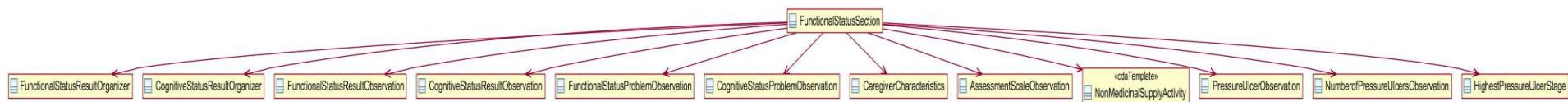


Figure 258: Medications section UML diagram (larger copy)

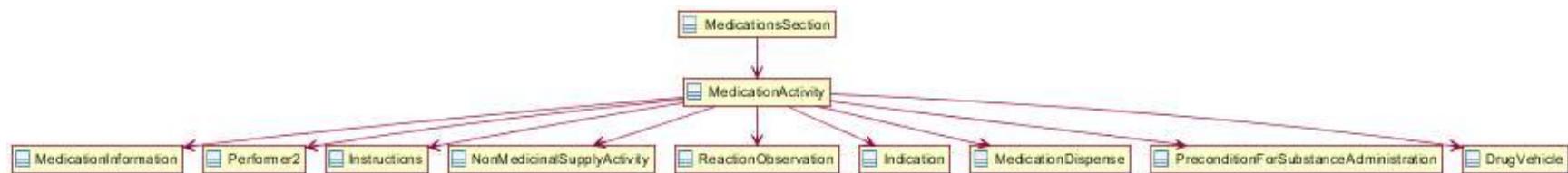


Figure 259: Plan of care section UML diagram (larger copy)



