



**HL7 Version 3 Implementation Guide:
Clinical Quality Language (CQL)-based
Health Quality Measure Format (HQMF)
Release 1, STU 3 - US Realm**

HL7 Standard for Trial Use

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Volume 3 – QDM Templates for CQL-based HQMF

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Terminology	Owner/Contact
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Logical Observation Identifiers Names & Codes (LOINC)	Regenstrief Institute
International Classification of Diseases (ICD) codes	World Health Organization (WHO)
NUCC Health Care Provider Taxonomy code set	American Medical Association. Please see www.nucc.org . AMA licensing contact: 312-464-5022 (AMA IP services)

Table of Contents

1	STRUCTURE OF THIS GUIDE	14
2	CONFORMANCE CONVENTIONS	15
2.1	Templates and Conformance Statements	15
2.2	Template Versioning.....	15
2.3	Open and Closed Templates	16
2.4	Conformance Verbs.....	16
2.5	Cardinality.....	16
2.6	Vocabulary Conformance	17
2.7	Data Types	17
2.8	QDM Attribute Mappings	17
2.9	Asserting an ActCriteria Not Met with a Reason	17
2.10	XPath Notation.....	17
2.11	XML Examples and Sample Documents.....	18
3	DOCUMENT	19
3.1	QDM Templates for CQL-Based HQMF Header (V3).....	19
4	SECTION.....	42
4.1	Data Criteria Section (V3).....	42
4.2	Measure Description Section	62
4.3	Measure Observations Section (V2).....	64
4.4	Population Criteria Section (V2).....	67
5	ENTRY	77
5.1	Admission Source	77
5.2	Adverse Event (V2)	78
5.3	Allergy Intolerance (V2)	84
5.4	Assessment, Order	90
5.5	Assessment, Performed (V2)	93
5.6	Assessment, Recommended (V2).....	97
5.7	Care Goal (V2).....	100
5.8	Cause	104
5.9	Communication, Performed	106
5.10	Component	111
5.10.1	Laboratory Test Component	113
5.11	Device, Applied (V2)	115

5.12	Device, Order	120
5.13	Device, Recommended.....	124
5.14	Diagnosis (V2).....	128
5.15	Diagnostic Study, Order (V3)	131
5.16	Diagnostic Study, Performed (V2)	134
5.17	Diagnostic Study, Recommended (V3)	140
5.18	Dosage.....	143
5.19	Encounter, Order	144
5.20	Encounter, Performed (V2)	147
5.21	Encounter, Recommended.....	153
5.22	Facility Location.....	157
5.23	Family History	159
5.24	Immunization, Administered (V3)	162
5.25	Immunization, Order (V2).....	167
5.26	Incision Datetime	172
5.27	Intervention, Order	173
5.28	Intervention, Performed (V2).....	177
5.29	Intervention, Recommended	181
5.30	Laboratory Test Reference Range	184
5.31	Laboratory Test, Order (V2)	186
5.32	Laboratory Test, Performed (V2).....	189
5.33	Laboratory Test, Recommended (V2)	194
5.34	Medication, Active (V3)	197
5.35	Medication, Administered (V3)	201
5.36	Medication, Discharge (V2)	206
5.37	Medication, Dispensed (V2)	211
5.38	Medication, Order (V3)	217
5.39	Patient Care Experience	223
5.40	Patient Characteristic (V2).....	226
5.41	Patient Characteristic Birth Date	228
5.42	Patient Characteristic Clinical Trial Participant.....	230
5.43	Patient Characteristic Ethnicity	233
5.44	Patient Characteristic Expired	235
5.45	Patient Characteristic Payer	238
5.46	Patient Characteristic Race	241
5.47	Patient Characteristic Sex	243

5.48	Physical Exam, Order (V2).....	245
5.49	Physical Exam, Performed (V2)	250
5.50	Physical Exam, Recommended (V2)	255
5.51	Principal Diagnosis	259
5.52	Procedure, Order (V3).....	261
5.53	Procedure, Performed (V3)	264
5.54	Procedure, Recommended (V2)	270
5.55	Program Participation (V2).....	273
5.56	Provider Care Experience	276
5.57	Provider Characteristic (V2)	279
5.58	Reason	283
5.59	Related To.....	285
5.60	Result (V2).....	287
5.61	Severity Observation (V2)	289
5.62	Status (V2).....	291
5.63	Substance, Administered (V3).....	293
5.64	Substance, Order (V3)	298
5.65	Substance, Recommended (V3).....	303
5.66	Supply	308
5.67	Symptom (V2)	309
5.68	Target Outcome	312
6	TEMPLATE IDS IN THIS GUIDE	315
7	VALUE SETS IN THIS GUIDE.....	325
8	CODE SYSTEMS IN THIS GUIDE	327
9	RETIRED TEMPLATES.....	328
10	NEW TEMPLATES	329
11	CHANGES FROM PREVIOUS VERSION.....	330
11.1	QDM Templates for CQL-Based HQMF Header (V3).....	330
11.2	Assessment, Recommended (V2)	331
11.3	Communication: From Patient to Provider (V3) - RETIRED	331
11.4	Communication: From Provider to Patient (V3) - RETIRED	332
11.5	Communication: From Provider to Provider (V3) - RETIRED	332
11.6	Device, Applied (V2)	333
11.7	Diagnostic Study, Order (V3)	334

11.8	Diagnostic Study, Recommended (V3)	335
11.9	Immunization, Administered (V3)	336
11.10	Laboratory Test, Order (V2)	337
11.11	Laboratory Test, Recommended (V2)	337
11.12	Medication, Active (V3)	338
11.13	Medication, Administered (V3)	339
11.14	Medication, Order (V3)	341
11.15	Physical Exam, Order (V2).....	343
11.16	Physical Exam, Recommended (V2)	343
11.17	Procedure, Order (V3).....	344
11.18	Procedure, Performed (V3)	345
11.19	Procedure, Recommended (V2)	346
11.20	Program Participation (V2).....	347
11.21	Substance, Administered (V3).....	348
11.22	Substance, Order (V3)	350
11.23	Substance, Recommended (V3).....	351
11.24	Data Criteria Section (V3).....	352
11.25	Measure Observations Section (V2).....	354

Table of Figures

Figure 1: Relationship between QDM, CQL, eCQM, and the volumes of this IG.....	14
Figure 2: Measure Description Section Example	64
Figure 3: Measure Observations Section (V2) Example.....	67
Figure 4: Admission Source Example	78
Figure 5: Adverse Event (V2) Example	84
Figure 6: Allergy Intolerance (V2) Example	89
Figure 5: Assessment, Order Example.....	93
Figure 8: Assessment, Performed (V2) Example	97
Figure 9: Assessment, Recommended Example	100
Figure 10: Care Goal (V2) Example.....	104
Figure 11: Cause Example	106
Figure 12: Communication, Performed Example	111
Figure 13: Component Example	113

Figure 14: Laboratory Test Component Example	115
Figure 15: Device, Applied (V2) Example	119
Figure 16: Device, Order Example	124
Figure 17: Device, Recommended Example.....	128
Figure 18: Diagnosis (V2) Example.....	131
Figure 19: Diagnostic Study, Order (V3) Example	134
Figure 20: Diagnostic Study, Performed (V2) Example	140
Figure 21: Diagnostic Study, Recommended (V3) Example.....	142
Figure 22: Dosage Example	144
Figure 23: Encounter, Order Example.....	147
Figure 24: Encounter, Performed (V2) Example	153
Figure 25: Encounter, Recommended Example	157
Figure 26: Facility Location Example.....	159
Figure 27: Family History Example	162
Figure 28: Immunization, Administered (V3) Example	167
Figure 29: Immunization, Order (V2) Example	171
Figure 30: Incision Datetime Example.....	173
Figure 31: Intervention, Order Example	177
Figure 32: Intervention, Performed (V2) Example.....	181
Figure 33: Intervention, Recommended Example	184
Figure 34: Laboratory Test Reference Range Example	186
Figure 35: Laboratory Test, Order (V2) Example	189
Figure 36: Laboratory Test, Performed (V2) Example	194
Figure 37: Laboratory Test, Recommended (V2) Example	197
Figure 38: Medication, Active (V3) Example	200
Figure 39: Medication, Administered (V3) Example	206
Figure 40: Medication, Discharge (V2) Example	211
Figure 41: Medication, Dispensed (V2) Example	217
Figure 42: Medication, Order (V3) Example	223
Figure 43: Patient Care Experience Example	225
Figure 44: Patient Characteristic (V2) Example.....	228
Figure 45: Patient Characteristic Birth Date Example.....	230
Figure 46: Patient Characteristic Clinical Trial Participant Example.....	233

Figure 47: Patient Characteristic Ethnicity Example.....	235
Figure 48: Patient Characteristic Expired Example	238
Figure 49: Patient Characteristic Payer Example	240
Figure 50: Patient Characteristic Race Example	243
Figure 51: Patient Characteristic Sex Example	245
Figure 52: Physical Exam, Order (V2) Example.....	249
Figure 53: Physical Exam, Performed (V2) Example	254
Figure 54: Physical Exam, Recommended (V2) Example	258
Figure 55: Principal Diagnosis Example	261
Figure 56: Procedure, Order (V3) Example.....	264
Figure 57: Procedure, Performed (V3) Example	270
Figure 58: Procedure, Recommended (V2) Example	273
Figure 59: Program Participation (V2) Example	275
Figure 60: Provider Care Experience Example	278
Figure 61: Provider Characteristic (V2) Example	282
Figure 62: Reason Example	285
Figure 63: Related To Example	287
Figure 64: Result (V2) Example.....	289
Figure 65: Severity Observation (V2) Example	291
Figure 66: Status (V2) Example.....	293
Figure 67: Substance, Administered (V3) Example.....	297
Figure 68: Substance, Order (V3) Example	302
Figure 69: Substance, Recommended (V3) Example.....	307
Figure 70: Supply Example	309
Figure 71: Symptom (V2) Example	312
Figure 72: Target Outcome Example	314

Table of Tables

Table 1: QDM Templates for CQL-Based HQMF Header (V3) Contexts	19
Table 2: QDM Templates for CQL-Based HQMF Header (V3) Constraints Overview.....	20
Table 3: Data Criteria Section (V3) Contexts	42
Table 4: Data Criteria Section (V3) Constraints Overview	44

Table 5: Measure Description Section Contexts	62
Table 6: Measure Description Section Constraints Overview	63
Table 7: Measure Observations Section (V2) Contexts	64
Table 8: Measure Observations Section (V2) Constraints Overview.....	65
Table 9: Population Criteria Section (V2) Contexts	67
Table 10: Population Criteria Section (V2) Constraints Overview	68
Table 11: Admission Source Contexts	77
Table 12: Admission Source Constraints Overview	77
Table 13: Adverse Event (V2) Contexts	78
Table 14: Adverse Event (V2) Constraints Overview	79
Table 15: Allergy Intolerance (V2) Contexts.....	84
Table 16: Allergy Intolerance (V2) Constraints Overview.....	85
Table 17: Assessment, Order Contexts	90
Table 18: Assessment, Order Constraints Overview	91
Table 19: Assessment, Performed (V2) Contexts	93
Table 20: Assessment, Performed (V2) Constraints Overview.....	94
Table 21: Assessment, Recommended (V2) Contexts	97
Table 22: Assessment, Recommended (V2) Constraints Overview	98
Table 23: Care Goal (V2) Contexts.....	100
Table 24: Care Goal (V2) Constraints Overview.....	102
Table 25: Cause Contexts	104
Table 26: Cause Constraints Overview	105
Table 27: Communication, Performed Contexts	106
Table 28: Communication, Performed Constraints Overview	107
Table 29: Component Contexts	111
Table 30: Component Constraints Overview	112
Table 31: Laboratory Test Component Contexts.....	113
Table 32: Laboratory Test Component Constraints Overview.....	114
Table 33: Device, Applied (V2) Contexts.....	115
Table 34: Device, Applied (V2) Constraints Overview.....	116
Table 35: Device, Order Contexts	120
Table 36: Device, Order Constraints Overview	121
Table 37: Device, Recommended Contexts	124

Table 38: Device, Recommended Constraints Overview	125
Table 39: Diagnosis (V2) Contexts	128
Table 40: Diagnosis (V2) Constraints Overview	129
Table 41: Diagnostic Study, Order (V3) Contexts	131
Table 42: Diagnostic Study, Order (V3) Constraints Overview	132
Table 43: Diagnostic Study, Performed (V2) Contexts.....	134
Table 44: Diagnostic Study, Performed (V2) Constraints Overview.....	136
Table 45: Diagnostic Study, Recommended (V3) Contexts	140
Table 46: Diagnostic Study, Recommended (V3) Constraints Overview	141
Table 47: Dosage Contexts.....	143
Table 48: Dosage Constraints Overview.....	143
Table 49: Encounter, Order Contexts	144
Table 50: Encounter, Order Constraints Overview	145
Table 51: Encounter, Performed (V2) Contexts	147
Table 52: Encounter, Performed (V2) Constraints Overview	149
Table 53: Encounter, Recommended Contexts	153
Table 54: Encounter, Recommended Constraints Overview	155
Table 55: Facility Location Contexts	157
Table 56: Facility Location Constraints Overview.....	158
Table 57: Family History Contexts	159
Table 58: Family History Constraints Overview.....	160
Table 59: Immunization, Administered (V3) Contexts.....	162
Table 60: Immunization, Administered (V3) Constraints Overview.....	164
Table 61: Immunization, Order (V2) Contexts	167
Table 62: Immunization, Order (V2) Constraints Overview	168
Table 63: Incision Datetime Contexts	172
Table 64: Incision Datetime Constraints Overview	172
Table 63: Intervention, Order Contexts.....	173
Table 66: Intervention, Order Constraints Overview.....	175
Table 67: Intervention, Performed (V2) Contexts	177
Table 68: Intervention, Performed (V2) Constraints Overview	178
Table 69: Intervention, Recommended Contexts	181
Table 70: Intervention, Recommended Constraints Overview	182

Table 71: Laboratory Test Reference Range Contexts	184
Table 72: Laboratory Test Reference Range Constraints Overview	185
Table 73: Laboratory Test, Order (V2) Contexts	186
Table 74: Laboratory Test, Order (V2) Constraints Overview	187
Table 75: Laboratory Test, Performed (V2) Contexts.....	189
Table 76: Laboratory Test, Performed (V2) Constraints Overview	190
Table 77: Laboratory Test, Recommended (V2) Contexts	194
Table 78: Laboratory Test, Recommended (V2) Constraints Overview	195
Table 79: Medication, Active (V3) Contexts	197
Table 80: Medication, Active (V3) Constraints Overview	198
Table 81: Medication, Administered (V3) Contexts	201
Table 82: Medication, Administered (V3) Constraints Overview	202
Table 83: Medication, Discharge (V2) Contexts	206
Table 84: Medication, Discharge (V2) Constraints Overview	207
Table 85: Medication, Dispensed (V2) Contexts	211
Table 86: Medication, Dispensed (V2) Constraints Overview.....	213
Table 87: Medication, Order (V3) Contexts	217
Table 88: Medication, Order (V3) Constraints Overview.....	219
Table 89: Patient Care Experience Contexts	223
Table 90: Patient Care Experience Constraints Overview	224
Table 91: Patient Characteristic (V2) Contexts	226
Table 92: Patient Characteristic (V2) Constraints Overview	227
Table 93: Patient Characteristic Birth Date Contexts	228
Table 94: Patient Characteristic Birth Date Constraints Overview	229
Table 95: Patient Characteristic Clinical Trial Participant Contexts	230
Table 96: Patient Characteristic Clinical Trial Participant Constraints Overview	231
Table 97: Patient Characteristic Ethnicity Contexts	233
Table 98: Patient Characteristic Ethnicity Constraints Overview	234
Table 99: Patient Characteristic Expired Contexts	235
Table 100: Patient Characteristic Expired Constraints Overview	236
Table 101: Patient Characteristic Payer Contexts.....	238
Table 102: Patient Characteristic Payer Constraints Overview.....	239
Table 103: Patient Characteristic Race Contexts.....	241

Table 104: Patient Characteristic Race Constraints Overview.....	242
Table 105: Patient Characteristic Sex Contexts	243
Table 106: Patient Characteristic Sex Constraints Overview.....	244
Table 107: Physical Exam, Order (V2) Contexts	245
Table 108: Physical Exam, Order (V2) Constraints Overview	247
Table 109: Physical Exam, Performed (V2) Contexts	250
Table 110: Physical Exam, Performed (V2) Constraints Overview	251
Table 111: Physical Exam, Recommended (V2) Contexts.....	255
Table 112: Physical Exam, Recommended (V2) Constraints Overview.....	256
Table 113: Principal Diagnosis Contexts.....	259
Table 114: Principal Diagnosis Constraints Overview.....	260
Table 115: Procedure, Order (V3) Contexts	261
Table 116: Procedure, Order (V3) Constraints Overview	262
Table 117: Procedure, Performed (V3) Contexts	264
Table 118: Procedure, Performed (V3) Constraints Overview	266
Table 119: Procedure, Recommended (V2) Contexts.....	270
Table 120: Procedure, Recommended (V2) Constraints Overview.....	271
Table 121: Program Participation (V2) Contexts.....	273
Table 122: Program Participation (V2) Constraints Overview.....	274
Table 123: Provider Care Experience Contexts.....	276
Table 124: Provider Care Experience Constraints Overview.....	277
Table 125: Provider Characteristic (V2) Contexts	279
Table 126: Provider Characteristic (V2) Constraints Overview	280
Table 127: Reason Contexts.....	283
Table 128: Reason Constraints Overview.....	284
Table 129: Related To Contexts	285
Table 129: Related To Constraints Overview	286
Table 131: Result (V2) Contexts	287
Table 132: Result (V2) Constraints Overview	288
Table 133: Severity Observation (V2) Contexts.....	289
Table 134: Severity Observation (V2) Constraints Overview.....	290
Table 135: Status (V2) Contexts	291
Table 136: Status (V2) Constraints Overview	292

Table 137: Substance, Administered (V3) Contexts	293
Table 138: Substance, Administered (V3) Constraints Overview	294
Table 139: Substance, Order (V3) Contexts	298
Table 139: Substance, Order (V3) Constraints Overview	299
Table 141: Substance, Recommended (V3) Contexts	303
Table 141: Substance, Recommended (V3) Constraints Overview	304
Table 143: Supply Contexts	308
Table 144: Supply Constraints Overview	308
Table 145: Symptom (V2) Contexts	309
Table 146: Symptom (V2) Constraints Overview.....	310
Table 147: Target Outcome Contexts.....	312
Table 148: Target Outcome Constraints Overview.....	313
Table 149: Template List.....	315
Table 147: Template Containments	319
Table 151: ObservationMeasureScoring.....	325
Table 152: ObservationMeasureType	325
Table 153: RoleClassServiceDeliveryLocation.....	326
Table 154: Code Systems	327
Table 155 Retired Templates	328
Table 156 New Templates	329

1 STRUCTURE OF THIS GUIDE

Three volumes comprise this *HL7 Version 3 Implementation Guide: Clinical Quality Language (CQL)-based Health Quality Measure Format (HQMF), Release 1 (US Realm), Standard for Trial Use (STU) 3:*

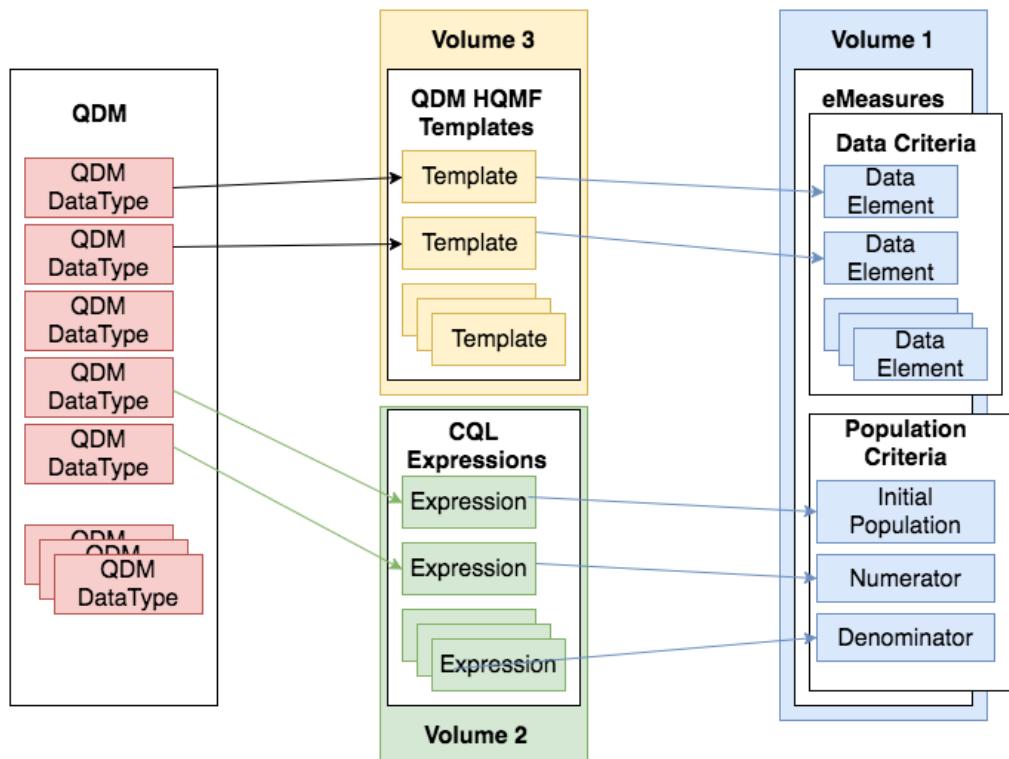


Figure 1: Relationship between QDM, CQL, eCQM, and the volumes of this IG.

Volume 1 : Provides narrative introduction, background material, and conformance requirements for representing CQL-based eCQMs in HQMF.

Volume 2 : Describes how to incorporate version 5.4 of the Quality Data Model into a CQL- based eCQM in accordance with accepted formatting and usage conventions.

Volume 3 : Contains the QDM templates for the CQL-based HQMF for QDM data types, necessary for constructing CQL-based HQMF measures that use the QDM.

2 CONFORMANCE CONVENTIONS

2.1 Templates and Conformance Statements

Conformance statements within this IG are presented as constraints from the Trifolia Workbench, a template repository. An algorithm converts constraints recorded in Trifolia to a printable presentation. Each constraint is uniquely identified by conformance number at or near the end of the constraint (e.g., CONF:3335-31306). The digits in the conformance number before the hyphen identify which implementation guide the template belongs to and the number after the hyphen is unique to the owning implementation guide. Together, these two numbers uniquely identify each constraint. These identifiers are persistent but not sequential. Conformance numbers in this guide associated with a conformance statement that is carried forward from a previous version of this guide will carry the same conformance number from the previous version. This is true even if the previous conformance statement has been edited. If a conformance statement is entirely new it will have a new conformance number.

Bracketed information following each template title indicates the template type (dataCriteriaSection, populationCriteriaSection, actCriteria, observationCriteria, etc.), the object identifier (OID) or uniform resource name (URN), and whether the template is open or closed. The identifier OID is the templateId/@root value; all templateIds have an @root value. Updated templates also have an @extension value, which is a date identifying the version of this template; such templates are identified by URN and the HL7 version (urn:hl7ii). The URN identifier includes both the @root and @extension value for the templateId (for example, identifier urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2018-05-01).

Each section and entry template in the guide includes a context table. The "Contained By" column indicates which documents or sections use this template and if the template is optional or required in the containing template. The "Contains" column indicates templates contained within this template. Each template also includes a constraint overview table to summarize the constraints in the template. Value set tables, where applicable, and brief XML example figures are included with most explanations.

2.2 Template Versioning

A new version of an existing implementation guide reuses templates from the previous version. During the ballot phase or update phase, templates carry the designation “Published” to indicate the template is unchanged from the previous version or “Draft” to indicate a new or revised template. Substantial revisions to previously published templates are indicated by the version number (V2, V3, etc.) in all phases: ballot, update, and published guides.

If there are no substantive changes to a template that has been successfully published, the template will carry the same templateId/@root (identifier oid) and templateId/@extension as in the previous implementation guide. (In the case of older templates, the @extension attribute will not be present.) During a new ballot or update phase, “Published” is appended to the main heading for the template to indicate that the template cannot be commented on in the ballot or update. The “Published” designation is removed in the final publication versions.

2.3 Open and Closed Templates

In open templates, all of the features of the HQMF Release 1 Normative base specification are allowed except as constrained by the templates. By contrast, a closed template specifies what is allowed and nothing further may be included. Templates in an HQMF Release 1 Normative document are open. However measure developers should be cautioned that only the elements described in these templates are supported by the Measure Authoring Tool (MAT)¹.

2.4 Conformance Verbs

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*.

- **SHALL**: an absolute requirement for the particular element. Where a **SHALL** constraint is applied to an XML element, that element must be present in an instance, but may have an exceptional value (i.e., may have a nullFlavor), unless explicitly precluded. Where a **SHALL** constraint is applied to an XML attribute, that attribute must be present, and must contain a conformant value.
- **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

2.5 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 to 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 code is to be present. The subordinate constraint specifies some additional characteristics of that code.

¹Measure Authoring Tool. <https://www.emesuretool.cms.gov/>

2.6 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.

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.

In a QDM-based HQMF document, a QDM data type is coupled with a single value set, a grouping value set, or a directly referenced code to become a QDM element. This guide uses the notation “{\$QDMElementValueSetOID}” in lieu of a real value set OID to indicate that this is where the value set binding should occur during creation of a QDM element.

A full discussion of the representation of vocabulary is outside the scope of this document; for more information, see the *HL7 Version 3*, Normative Edition sections on Abstract Data Types and XML Data Types R2.

2.7 Data Types

HQMF Normative uses the HL7 Version 3 Data Types, Release 2 abstract and Release 2 XML-specific specification. All attributes of a data type are allowed unless explicitly prohibited by this specification.

2.8 QDM Attribute Mappings

In a QDM-HQMF template, the QDM data type is mapped to the template, and QDM attributes of the QDM data type are mapped to attributes of the QDM-HQMF template. Attribute-level mapping is indicated within the template via a note.

2.9 Asserting an ActCriteria Not Met with a Reason

To specify a QDM element as not done, such as to say a patient was not prescribed with antithrombotic therapy because of contraindication (“Medication, Not Ordered”), this is done through the use of the actionNegationInd attribute (The QDM attribute negation rationale is represented using the actionNegationInd).

The actionNegationInd if true, specifies that the actCriteria indicated was not met. A nested reason for the actCriteria not being met can be represented through an outboundRelationship type of “RSON” to the Reason entry QDM-HQMF template.

2.10 XPath Notation

Instead of the traditional dotted notation used by HL7 to represent RIM classes, this document uses XML Path Language (XPath) notation in conformance statements and elsewhere to identify

the XML elements and attributes within the HQMF Release 1 Normative 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 an '@') and concatenated with a '/' symbol.

2.11 XML Examples and Sample Documents

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 (...).

Within the narrative, XML element (code, measureAttribute, etc.) and attribute (SNOMED CT, 282291009, etc.) names also appear in this monospace font.

3 DOCUMENT

3.1 QDM Templates for CQL-Based HQMF Header (V3)

[QualityMeasureDocument: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2018-05-01 (open)]

Table 1: QDM Templates for CQL-Based HQMF Header (V3) Contexts

Contained By:	Contains:
	Measure Description Section (optional) Population Criteria Section (V2) (required) Measure Observations Section (V2) (optional) Data Criteria Section (V3) (required)

This is the document header template for a CQL-based HQMF document that contains QDM-based entry templates (QDM Version 5.4).

Table 2: QDM Templates for CQL-Based HQMF Header (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
QualityMeasureDocument (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2018-05-01)					
typeId	1..1	SHALL		3372-18786	
@root	1..1	SHALL		3372-18787	2.16.840.1.113883.1.3
@extension	1..1	SHALL		3372-18788	POQM_HD000001UV02
templateId	1..1	SHALL		3372-18771	
item	1..1	SHALL		3372-18772	
@root	1..1	SHALL		3372-18773	2.16.840.1.113883.10.20.28.1.2
@extension	0..1	SHALL		3372-33755	2018-05-01
id	1..1	SHALL		3372-18542	
code	1..1	SHALL		3372-18575	
@code	1..1	SHALL		3372-18576	57024-2
@codeSystem	1..1	SHALL		3372-33757	urn:oid:2.16.840.1.113883.6.1 (LOINC)
title	1..1	SHALL		3372-18541	
text	0..1	SHOULD		3372-18578	
statusCode	1..1	SHALL		3372-18579	
@code	1..1	SHALL		3372-32666	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY		3372-18789	
availabilityTime	0..1	MAY		3372-18790	
languageCode	0..1	MAY		3372-18791	
setId	1..1	SHALL		3372-18543	
versionNumber	0..1	SHOULD		3372-18544	
author	0..*	SHOULD		3372-18563	

responsibleParty	1..1	SHALL		3372-18564	
representedResponsibleOrganization	1..1	SHALL		3372-18565	
id	1..1	SHALL		3372-18566	
item	1..1	SHALL		3372-18567	
name	1..1	SHALL		3372-18568	
custodian	1..1	SHALL		3372-18555	
responsibleParty	1..1	SHALL		3372-18556	
@classCode	1..1	SHALL		3372-29933	ASSIGNED
representedResponsibleOrganization	1..1	SHALL		3372-18557	
id	1..1	SHALL		3372-18558	
item	1..1	SHALL		3372-18559	
name	1..1	SHALL		3372-18560	
verifier	0..1	SHOULD		3372-18754	
responsibleParty	1..1	SHALL		3372-18755	
representedResponsibleOrganization	1..1	SHALL		3372-18756	
id	1..1	SHALL		3372-18757	
item	1..1	SHALL		3372-18758	
name	1..1	SHALL		3372-18759	
relatedDocument	1..*	SHALL		3372-34627	
expressionDocument	1..1	SHALL		3372-34628	
text	1..1	SHALL		3372-34629	
@mediaType	1..1	SHALL		3372-34631	text/cql
reference	1..1	SHALL		3372-	

				34630	
@value	1..1	SHALL		3372-34632	
controlVariable	1..1	SHALL		3372-18545	
measurePeriod	1..1	SHALL		3372-18546	
code	1..1	SHALL		3372-18547	
@code	1..1	SHALL		3372-18548	MSRTP
@codeSystem	1..1	SHALL		3372-30056	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL		3372-18550	
subjectOf	1..1	SHALL		3372-18580	
measureAttribute	1..1	SHALL		3372-18581	
code	1..1	SHALL		3372-18582	
@code	1..1	SHALL		3372-18583	MSRSCORE
@codeSystem	1..1	SHALL		3372-30057	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	CD	3372-29935	
@code	1..1	SHALL		3372-29936	urn:oid:2.16.840.1.113883.1.11. 20367 (ObservationMeasureScoring)
subjectOf	1..*	SHALL		3372-18588	
measureAttribute	1..1	SHALL		3372-18590	
code	1..1	SHALL		3372-18591	
@code	1..1	SHALL		3372-29934	MSRTYPE
@codeSystem	1..1	SHALL		3372-30058	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	CD	3372-29938	
@code	1..1	SHALL		3372-29939	urn:oid:2.16.840.1.113883.1.11. 20368 (ObservationMeasureType)
subjectOf	0..1	SHOULD		3372-18603	

measureAttribute	1..1	SHALL		3372-18604	
code	1..1	SHALL		3372-18605	
@code	1..1	SHALL		3372-29941	COPY
@codeSystem	1..1	SHALL		3372-30060	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18609	
subjectOf	0..1	SHOULD		3372-18610	
measureAttribute	1..1	SHALL		3372-18611	
code	1..1	SHALL		3372-18612	
@code	1..1	SHALL		3372-18613	CRS
@codeSystem	1..1	SHALL		3372-30061	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-29942	
subjectOf	0..1	SHOULD		3372-18617	
measureAttribute	1..1	SHALL		3372-18618	
code	1..1	SHALL		3372-18619	
@code	1..1	SHALL		3372-18620	GUIDE
@codeSystem	1..1	SHALL		3372-30062	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-29943	
subjectOf	0..1	SHOULD		3372-18624	
measureAttribute	1..1	SHALL		3372-18625	
code	1..1	SHALL		3372-18626	
@code	1..1	SHALL		3372-18627	DEF
@codeSystem	1..1	SHALL		3372-30063	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18690	
subjectOf	0..1	SHOULD		3372-	

				18630	
measureAttribute	1..1	SHALL		3372-18631	
code	1..1	SHALL		3372-18632	
@code	1..1	SHALL		3372-18633	IDUR
@codeSystem	1..1	SHALL		3372-30064	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18636	
subjectOf	0..1	SHOULD		3372-18637	
measureAttribute	1..1	SHALL		3372-18638	
code	1..1	SHALL		3372-18639	
@code	1..1	SHALL		3372-18640	KEY
@codeSystem	1..1	SHALL		3372-30065	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
subjectOf	0..1	SHOULD		3372-18644	
measureAttribute	1..1	SHALL		3372-18645	
code	1..1	SHALL		3372-18646	
@code	1..1	SHALL		3372-18647	MSRAGG
@codeSystem	1..1	SHALL		3372-30066	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18649	
subjectOf	0..1	SHOULD		3372-18650	
measureAttribute	1..1	SHALL		3372-18651	
code	1..1	SHALL		3372-18652	
@code	1..1	SHALL		3372-18653	MSRADJ
@codeSystem	1..1	SHALL		3372-30067	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18656	
subjectOf	0..1	SHOULD		3372-18657	

measureAttribute	1..1	SHALL		3372-18658	
code	1..1	SHALL		3372-18659	
@code	1..1	SHALL		3372-18663	RAT
@codeSystem	1..1	SHALL		3372-30068	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18662	
subjectOf	0..*	SHOULD		3372-18664	
measureAttribute	1..1	SHALL		3372-18665	
code	1..1	SHALL		3372-18666	
@code	1..1	SHALL		3372-18667	REF
@codeSystem	1..1	SHALL		3372-30069	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18668	
subjectOf	0..*	SHOULD		3372-18669	
measureAttribute	1..1	SHALL		3372-18670	
code	1..1	SHALL		3372-18671	
@code	1..1	SHALL		3372-18672	MSRSET
@codeSystem	1..1	SHALL		3372-30070	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	CD	3372-29950	urn:oid:2.16.840.1.113883.1.11. 16927 (RoleClassServiceDeliveryLocatio n)
subjectOf	0..1	SHOULD		3372-18674	
measureAttribute	1..1	SHALL		3372-18675	
code	1..1	SHALL		3372-18676	
@code	1..1	SHALL		3372-18677	MSRJUR
@codeSystem	1..1	SHALL		3372-30071	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	CD	3372-29951	

subjectOf	0..1	SHOULD		3372-18679	
measureAttribute	1..1	SHALL		3372-18680	
code	1..1	SHALL		3372-18681	
@code	1..1	SHALL		3372-29952	MSRTOPIC
@codeSystem	1..1	SHALL		3372-30072	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	CD	3372-29953	
subjectOf	0..1	SHOULD		3372-18691	
measureAttribute	1..1	SHALL		3372-18692	
code	1..1	SHALL		3372-18693	
@code	1..1	SHALL		3372-18694	MSRRPTR
@codeSystem	1..1	SHALL		3372-30073	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	CD	3372-29954	
subjectOf	0..1	SHOULD		3372-18698	
measureAttribute	1..1	SHALL		3372-18699	
code	1..1	SHALL		3372-18700	
@code	1..1	SHALL		3372-18701	MSRRPTTIME
@codeSystem	1..1	SHALL		3372-30074	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	PQ	3372-29955	
subjectOf	0..1	SHOULD		3372-18705	
measureAttribute	1..1	SHALL		3372-18706	
code	1..1	SHALL		3372-18707	
@code	1..1	SHALL		3372-30075	USE
@codeSystem	1..1	SHALL		3372-30076	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-	

				18711	
subjectOf	0..1	SHOULD		3372-18712	
measureAttribute	1..1	SHALL		3372-18713	
code	1..1	SHALL		3372-18714	
@code	1..1	SHALL		3372-18715	SDE
@codeSystem	1..1	SHALL		3372-30077	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18718	
subjectOf	0..1	SHOULD		3372-18719	
measureAttribute	1..1	SHALL		3372-18720	
code	1..1	SHALL		3372-18721	
@code	1..1	SHALL		3372-29956	TRANF
@codeSystem	1..1	SHALL		3372-30078	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18725	
subjectOf	0..1	SHOULD		3372-18726	
measureAttribute	1..1	SHALL		3372-18727	
code	1..1	SHALL		3372-18728	
@code	1..1	SHALL		3372-18729	STRAT
@codeSystem	1..1	SHALL		3372-30079	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18732	
subjectOf	0..1	SHOULD		3372-18733	
measureAttribute	1..1	SHALL		3372-18734	
code	1..1	SHALL		3372-18735	
@code	1..1	SHALL		3372-18736	IPOP
@codeSystem	1..1	SHALL		3372-30080	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)

value	1..1	SHALL	ED	3372-18739	
subjectOf	0..1	SHOULD		3372-18740	
measureAttribute	1..1	SHALL		3372-18741	
code	1..1	SHALL		3372-18742	
@code	1..1	SHALL		3372-29957	DENOM
@codeSystem	1..1	SHALL		3372-30081	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18746	
subjectOf	0..1	SHOULD		3372-18747	
measureAttribute	1..1	SHALL		3372-18748	
code	1..1	SHALL		3372-18749	
@code	1..1	SHALL		3372-29958	DENEX
@codeSystem	1..1	SHALL		3372-30082	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-18753	
subjectOf	0..1	SHOULD		3372-29959	
measureAttribute	1..1	SHALL		3372-29960	
code	1..1	SHALL		3372-30083	
@code	1..1	SHALL		3372-30084	NUMER
@codeSystem	1..1	SHALL		3372-30085	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-29962	
subjectOf	0..1	SHOULD		3372-29963	
measureAttribute	1..1	SHALL		3372-29964	
code	1..1	SHALL		3372-29965	
@code	1..1	SHALL		3372-29967	NUMEX
@codeSystem	1..1	SHALL		3372-	urn:oid:2.16.840.1.113883.5.4

				30086	(HL7ActCode)
value	1..1	SHALL	ED	3372-29966	
subjectOf	0..1	SHOULD		3372-29968	
measureAttribute	1..1	SHALL		3372-29969	
code	1..1	SHALL		3372-29970	
@code	1..1	SHALL		3372-29971	DENEXCEP
@codeSystem	1..1	SHALL		3372-30087	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-29972	
subjectOf	0..1	SHOULD		3372-29973	
measureAttribute	1..1	SHALL		3372-29974	
code	1..1	SHALL		3372-29975	
@code	1..1	SHALL		3372-29976	MSRPOPL
@codeSystem	1..1	SHALL		3372-30088	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-29977	
subjectOf	0..1	SHOULD		3372-29978	
measureAttribute	1..1	SHALL		3372-29979	
code	1..1	SHALL		3372-29980	
@code	1..1	SHALL		3372-29981	MSRPOPLEX
@codeSystem	1..1	SHALL		3372-30089	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-29982	
subjectOf	0..1	SHOULD		3372-29984	
measureAttribute	1..1	SHALL		3372-29985	
code	1..1	SHALL		3372-29986	
@code	1..1	SHALL		3372-29987	DISC

@codeSystem	1..1	SHALL		3372-30090	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
value	1..1	SHALL	ED	3372-29988	
subjectOf	0..1	MAY		3372-34637	
measureAttribute	1..1	SHALL		3372-34638	
code	1..1	SHALL		3372-34639	
@code	1..1	SHALL		3372-34640	CMPMSRSCR
@codeSystem	1..1	SHALL		3372-34641	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
value	1..1	SHALL	CD	3372-34642	
@code	1..1	SHALL		3372-34643	
component	1..*	SHALL		3372-18813	
component	1..1	SHALL		3372-18815	
dataCriteriaSection	1..1	SHALL		3372-18833	Data Criteria Section (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.2.6:2018-05-01
component	1..*	SHALL		3372-19057	
populationCriteriaSection	1..1	SHALL		3372-19058	Population Criteria Section (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.2.7:2017-08-01
component	0..1	MAY		3372-29989	
measureDescriptionSection	1..1	SHALL		3372-29990	Measure Description Section (identifier: urn:oid:2.16.840.1.113883.10.2 0.28.2.3
component	0..1	MAY		3372-29991	
measureObservationsSection	1..1	SHALL		3372-29992	Measure Observations Section (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.2.4:2018-05-01

1. **SHALL** contain exactly one [1..1] **typeId** (CONF:3372-18786).

- a. This typeId **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.1.3"` (CONF:3372-18787).
 - b. This typeId **SHALL** contain exactly one [1..1] `@extension="POQM_HD000001UV02"` (CONF:3372-18788).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-18771).
- a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:3372-18772) such that it
 - i. **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.28.1.2"` (CONF:3372-18773).
 - ii. **SHALL** contain zero or one [0..1] `@extension="2018-05-01"` (CONF:3372-33755).
3. **SHALL** contain exactly one [1..1] **id** (CONF:3372-18542).
4. **SHALL** contain exactly one [1..1] **code** (CONF:3372-18575).
- a. This code **SHALL** contain exactly one [1..1] `@code="57024-2"` Health Quality Measure Document (CONF:3372-18576).
 - b. This code **SHALL** contain exactly one [1..1] `@codeSystem` (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3372-33757).
5. **SHALL** contain exactly one [1..1] **title** (CONF:3372-18541).
6. **SHOULD** contain zero or one [0..1] **text** (CONF:3372-18578).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-18579).
- a. This statusCode **SHALL** contain exactly one [1..1] `@code="completed"` Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-32666).
8. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-18789).
9. **MAY** contain zero or one [0..1] **availabilityTime** (CONF:3372-18790).
10. **MAY** contain zero or one [0..1] **languageCode** (CONF:3372-18791).
11. **SHALL** contain exactly one [1..1] **setId** (CONF:3372-18543).
12. **SHOULD** contain zero or one [0..1] **versionNumber** (CONF:3372-18544).
13. **SHOULD** contain zero or more [0..*] **author** (CONF:3372-18563).
- a. The author, if present, **SHALL** contain exactly one [1..1] **responsibleParty** (CONF:3372-18564).
 - i. This responsibleParty **SHALL** contain exactly one [1..1] **representedResponsibleOrganization** (CONF:3372-18565).
 - 1. This representedResponsibleOrganization **SHALL** contain exactly one [1..1] **id** (CONF:3372-18566).
 - a. This id **SHALL** contain exactly one [1..1] **item** (CONF:3372-18567).
 - 2. This representedResponsibleOrganization **SHALL** contain exactly one [1..1] **name** (CONF:3372-18568).
14. **SHALL** contain exactly one [1..1] **custodian** (CONF:3372-18555).
- a. This custodian **SHALL** contain exactly one [1..1] **responsibleParty** (CONF:3372-18556).
 - i. This responsibleParty **SHALL** contain exactly one [1..1] `@classCode="ASSIGNED"` (CONF:3372-29933).

- ii. This responsibleParty **SHALL** contain exactly one [1..1] **representedResponsibleOrganization** (CONF:3372-18557).
 - 1. This representedResponsibleOrganization **SHALL** contain exactly one [1..1] **id** (CONF:3372-18558).
 - a. This id **SHALL** contain exactly one [1..1] **item** (CONF:3372-18559).
 - 2. This representedResponsibleOrganization **SHALL** contain exactly one [1..1] **name** (CONF:3372-18560).
15. **SHOULD** contain zero or one [0..1] **verifier** (CONF:3372-18754).
- a. The verifier, if present, **SHALL** contain exactly one [1..1] **responsibleParty** (CONF:3372-18755).
 - i. This responsibleParty **SHALL** contain exactly one [1..1] **representedResponsibleOrganization** (CONF:3372-18756).
 - 1. This representedResponsibleOrganization **SHALL** contain exactly one [1..1] **id** (CONF:3372-18757).
 - a. This id **SHALL** contain exactly one [1..1] **item** (CONF:3372-18758).
 - 2. This representedResponsibleOrganization **SHALL** contain exactly one [1..1] **name** (CONF:3372-18759).
16. **SHALL** contain at least one [1..*] **relatedDocument** (CONF:3372-34627).
- a. Such relatedDocuments **SHALL** contain exactly one [1..1] **expressionDocument** (CONF:3372-34628).
 - i. This expressionDocument **SHALL** contain exactly one [1..1] **text** (CONF:3372-34629).
 - 1. This text **SHALL** contain exactly one [1..1] **@mediaType="text/cql"** (CONF:3372-34631).
 - 2. This text **SHALL** contain exactly one [1..1] **reference** (CONF:3372-34630).
 - a. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:3372-34632).

Note: This value contains a URI (relative or absolute) that identifies the CQL expression document.
17. **SHALL** contain exactly one [1..1] **controlVariable** (CONF:3372-18545).
- a. This controlVariable **SHALL** contain exactly one [1..1] **measurePeriod** (CONF:3372-18546).
 - i. This measurePeriod **SHALL** contain exactly one [1..1] **code** (CONF:3372-18547).
 - 1. This code **SHALL** contain exactly one [1..1] **@code="MSRTP"** Measurement Period (CONF:3372-18548).
 - 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30056).
 - ii. This measurePeriod **SHALL** contain exactly one [1..1] **value** (CONF:3372-18550).

Note: Measure period could be either an IVL_TS or a PIVL_TS data type.
Refer to the HQMF Normative Release 1 standard for details.

18. **SHALL** contain exactly one [1..1] **subjectOf** (CONF:3372-18580) such that it
 - a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18581).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18582).
 1. This code **SHALL** contain exactly one [1..1] @code="MSRSCORE" Measure Scoring (CONF:3372-18583).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30057).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3372-29935).
 1. This value **SHALL** contain exactly one [1..1] @code (ValueSet: ObservationMeasureScoring urn:oid:2.16.840.1.113883.1.11.20367) (CONF:3372-29936).
19. **SHALL** contain at least one [1..*] **subjectOf** (CONF:3372-18588) such that it
 - a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18590).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18591).
 1. This code **SHALL** contain exactly one [1..1] @code="MSRTYPE" Measure Type (CONF:3372-29934).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30058).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3372-29938).
 1. This value **SHALL** contain exactly one [1..1] @code (ValueSet: ObservationMeasureType urn:oid:2.16.840.1.113883.1.11.20368) (CONF:3372-29939).
20. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18603) such that it
 - a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18604).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18605).
 1. This code **SHALL** contain exactly one [1..1] @code="COPY" Copyright (CONF:3372-29941).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30060).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-18609).
21. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18610) such that it
 - a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18611).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18612).

1. This code **SHALL** contain exactly one [1..1] @code="CRS" Clinical Recommendation Statement (CONF:3372-18613).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30061).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-29942).
22. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18617) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18618).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18619).
 1. This code **SHALL** contain exactly one [1..1] @code="GUIDE" Guide (CONF:3372-18620).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30062).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-29943).
23. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18624) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18625).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18626).
 1. This code **SHALL** contain exactly one [1..1] @code="DEF" Definition (CONF:3372-18627).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30063).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-18690).
24. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18630) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18631).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18632).
 1. This code **SHALL** contain exactly one [1..1] @code="IDUR" Improvement Notation (CONF:3372-18633).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30064).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-18636).
25. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18637) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18638).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18639).

1. This code **SHALL** contain exactly one [1..1] **@code="KEY"** Keyword (CONF:3372-18640).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30065).
26. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18644) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18645).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18646).
 1. This code **SHALL** contain exactly one [1..1] **@code="MSRAGG"** Rate Aggregation (CONF:3372-18647).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30066).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with **@xsi:type="ED"** (CONF:3372-18649).
27. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18650) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18651).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18652).
 1. This code **SHALL** contain exactly one [1..1] **@code="MSRADJ"** Risk Adjustment (CONF:3372-18653).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30067).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with **@xsi:type="ED"** (CONF:3372-18656).
28. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18657) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18658).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18659).
 1. This code **SHALL** contain exactly one [1..1] **@code="RAT"** Rationale (CONF:3372-18663).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30068).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with **@xsi:type="ED"** (CONF:3372-18662).
29. **SHOULD** contain zero or more [0..*] **subjectOf** (CONF:3372-18664) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18665).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18666).
 1. This code **SHALL** contain exactly one [1..1] **@code="REF"** Reference (CONF:3372-18667).

- 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30069).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-18668).
30. **SHOULD** contain zero or more [0..*] **subjectOf** (CONF:3372-18669) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18670).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18671).
 - 1. This code **SHALL** contain exactly one [1..1] **@code**="MSRSET" Care Setting (CONF:3372-18672).
 - 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30070).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (ValueSet: RoleClassServiceDeliveryLocation urn:oid:2.16.840.1.113883.1.11.16927) (CONF:3372-29950).
31. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18674) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18675).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18676).
 - 1. This code **SHALL** contain exactly one [1..1] **@code**="MSRJUR" Jurisdiction (CONF:3372-18677).
 - 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30071).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3372-29951).
32. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18679) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18680).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18681).
 - 1. This code **SHALL** contain exactly one [1..1] **@code**="MSRTOPIC" Topic Type (CONF:3372-29952).
 - 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30072).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3372-29953).
33. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18691) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18692).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18693).
 - 1. This code **SHALL** contain exactly one [1..1] **@code**="MSRRPTR" Reporter Type (CONF:3372-18694).

2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
(CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
(CONF:3372-30073).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
@xsi:type="CD" (CONF:3372-29954).
34. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18698) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18699).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18700).
 1. This code **SHALL** contain exactly one [1..1] **@code="MSRRPTTIME"** Timeframe for Reporting (CONF:3372-18701).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
(CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
(CONF:3372-30074).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
@xsi:type="PQ" (CONF:3372-29955).
35. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18705) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18706).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18707).
 1. This code **SHALL** contain exactly one [1..1] **@code="USE"** Notice of Use (CONF:3372-30075).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
(CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
(CONF:3372-30076).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
@xsi:type="ED" (CONF:3372-18711).
36. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18712) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18713).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18714).
 1. This code **SHALL** contain exactly one [1..1] **@code="SDE"** Supplemental Data Elements (CONF:3372-18715).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
(CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
(CONF:3372-30077).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
@xsi:type="ED" (CONF:3372-18718).
37. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18719) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18720).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18721).
 1. This code **SHALL** contain exactly one [1..1] **@code="TRANF"** Transmission Format (CONF:3372-29956).

2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30078).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-18725).
38. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18726) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18727).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18728).
 1. This code **SHALL** contain exactly one [1..1] **@code="STRAT"**
 Stratification (CONF:3372-18729).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30079).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-18732).
39. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18733) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18734).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18735).
 1. This code **SHALL** contain exactly one [1..1] **@code="IPOP"** Initial Population (CONF:3372-18736).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30080).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-18739).
40. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18740) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18741).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18742).
 1. This code **SHALL** contain exactly one [1..1] **@code="DENOM"**
 Denominator (CONF:3372-29957).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30081).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-18746).
41. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-18747) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-18748).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-18749).
 1. This code **SHALL** contain exactly one [1..1] **@code="DENEX"**
 Denominator Exclusion (CONF:3372-29958).

2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30082).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-18753).
42. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-29959) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-29960).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-30083).
 1. This code **SHALL** contain exactly one [1..1] **@code="NUMER"**
 Numerator (CONF:3372-30084).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30085).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-29962).
43. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-29963) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-29964).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-29965).
 1. This code **SHALL** contain exactly one [1..1] **@code="NUMEX"**
 Numerator Exclusion (CONF:3372-29967).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30086).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-29966).
44. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-29968) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-29969).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-29970).
 1. This code **SHALL** contain exactly one [1..1] **@code="DENEXCEP"**
 Denominator Exception (CONF:3372-29971).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3372-30087).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with
`@xsi:type="ED"` (CONF:3372-29972).
45. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-29973) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-29974).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-29975).
 1. This code **SHALL** contain exactly one [1..1] **@code="MSRPOPL"**
 Measure Population (CONF:3372-29976).

2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30088).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-29977).
46. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-29978) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-29979).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-29980).
 1. This code **SHALL** contain exactly one [1..1] **@code="MSRPOPLEX"** Measure Population Exclusions (CONF:3372-29981).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30089).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-29982).
47. **SHOULD** contain zero or one [0..1] **subjectOf** (CONF:3372-29984) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-29985).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-29986).
 1. This code **SHALL** contain exactly one [1..1] **@code="DISC"** Disclaimer (CONF:3372-29987).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-30090).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="ED" (CONF:3372-29988).
48. **MAY** contain zero or one [0..1] **subjectof** (CONF:3372-34637) such that it
- a. **SHALL** contain exactly one [1..1] **measureAttribute** (CONF:3372-34638).
 - i. This measureAttribute **SHALL** contain exactly one [1..1] **code** (CONF:3372-34639).
 1. This code **SHALL** contain exactly one [1..1] **@code="CMPMSRSCR"** Composite measure scoring (CONF:3372-34640).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.5.4"** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-34641).
 - ii. This measureAttribute **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3372-34642).
 1. This value **SHALL** contain exactly one [1..1] **@code** (CONF:3372-34643).
 Note: Will add a valueset that contain the following codes: "OPPORSCR", "ALLORNONESCR", "LINEARSCR", "WEIGHTSCR"
49. **SHALL** contain at least one [1..*] **component** (CONF:3372-18813).
50. **SHALL** contain exactly one [1..1] **component** (CONF:3372-18815) such that it

- a. **SHALL** contain exactly one [1..1] [Data Criteria Section \(V3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2018-05-01) (CONF:3372-18833).
- 51. **SHALL** contain at least one [1..*] **component** (CONF:3372-19057) such that it
 - a. **SHALL** contain exactly one [1..1] [Population Criteria Section \(V2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.2.7:2017-08-01) (CONF:3372-19058).
- 52. **MAY** contain zero or one [0..1] **component** (CONF:3372-29989) such that it
 - a. **SHALL** contain exactly one [1..1] [Measure Description Section](#) (identifier: urn:oid:2.16.840.1.113883.10.20.28.2.3) (CONF:3372-29990).
- 53. **MAY** contain zero or one [0..1] **component** (CONF:3372-29991) such that it
 - a. **SHALL** contain exactly one [1..1] [Measure Observations Section \(V2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.2.4:2018-05-01) (CONF:3372-29992).

4 SECTION

4.1 Data Criteria Section (V3)

[dataCriteriaSection: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2018-05-01 (open)]

Table 3: Data Criteria Section (V3) Contexts

Contained By:	Contains:
QDM Templates for CQL-Based HQMF Header (V3) (required)	Device, Order (optional) Device, Recommended (optional) Encounter, Order (optional) Encounter, Recommended (optional) Family History (optional) Intervention, Order (optional) Intervention, Recommended (optional) Patient Care Experience (optional) Patient Characteristic Clinical Trial Participant (optional) Patient Characteristic Birth Date (optional) Patient Characteristic Ethnicity (optional) Patient Characteristic Expired (optional) Patient Characteristic Payer (optional) Patient Characteristic Race (optional) Patient Characteristic Sex (optional) Provider Care Experience (optional) Adverse Event (V2) (optional) Allergy Intolerance (V2) (optional) Assessment, Performed (V2) (optional) Care Goal (V2) (optional) Diagnostic Study, Performed (V2) (optional) Encounter, Performed (V2) (optional) Laboratory Test, Performed (V2) (optional) Immunization, Order (V2) (optional) Medication, Discharge (V2) (optional) Patient Characteristic (V2) (optional) Provider Characteristic (V2) (optional) Symptom (V2) (optional) Diagnosis (V2) (optional) Intervention, Performed (V2) (optional) Physical Exam, Performed (V2) (optional) Medication, Dispensed (V2) (optional) Assessment, Order (optional) Assessment, Recommended (V2) (optional) Communication: Performed (optional) Device, Applied (V2) (optional)

Contained By:	Contains:
	<p>Diagnostic Study, Order (V3) (optional)</p> <p>Diagnostic Study, Recommended (V3) (optional)</p> <p>Immunization, Administered (V3) (optional)</p> <p>Laboratory Test, Order (V2) (optional)</p> <p>Laboratory Test, Recommended (V2) (optional)</p> <p>Medication, Active (V3) (optional)</p> <p>Medication, Administered (V3) (optional)</p> <p>Physical Exam, Order (V2) (optional)</p> <p>Physical Exam, Recommended (V2) (optional)</p> <p>Procedure, Order (V3) (optional)</p> <p>Procedure, Recommended (V2) (optional)</p> <p>Procedure, Performed (V3) (optional)</p> <p>Substance, Administered (V3) (optional)</p> <p>Substance, Order (V3) (optional)</p> <p>Substance, Recommended (V3) (optional)</p> <p>Medication, Order (V3) (optional)</p> <p>Program Participation (V2) (optional)</p>

The Data Criteria Section contains the criteria describing the data of interest to a measure.

Table 4: Data Criteria Section (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
dataCriteriaSection (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2018-05-01)					
templateId	1..1	SHALL		3372-18804	
item	1..1	SHALL		3372-18805	
@root	1..1	SHALL		3372-18806	2.16.840.1.113883.10.20.28.2.6
@extension	1..1	SHALL		3372-33440	2018-05-01
id	0..1	MAY		3372-18856	
code	1..1	SHALL		3372-18807	
@code	1..1	SHALL		3372-18808	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 57025-9
@codeSystem	1..1	SHALL		3372-30091	urn:oid:2.16.840.1.113883.6.1 (LOINC)
title	1..1	SHALL		3372-18857	
@value	1..1	SHALL		3372-18964	Data Criteria Section
text	1..1	SHALL		3372-18858	
entry	1..*	SHALL		3372-18853	
entry	0..*	MAY		3372-34258	
@typeCode	1..1	SHALL		3372-34259	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
observationCriteria	1..1	SHALL		3372-34260	Adverse Event (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.120:2017-08-01)
entry	0..*	MAY		3372-34261	
@typeCode	1..1	SHALL		3372-34262	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
observationCriteria	1..1	SHALL		3372-34263	Allergy Intolerance (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.119:2017-08-01)
entry	0..*	MAY		3372-34176	

@typeCode	1..1	SHALL		3372-34177	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-34178	Assessment, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.117:2017-08-01
entry	0..*	MAY		3372-34179	
typeId	1..1	SHALL		3372-34180	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-34181	Assessment, Recommended (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.118:2018-05-01
entry	0..*	MAY		3372-34678	
typeId	1..1	SHALL		3372-34680	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-34679	Assessment, Order (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.131:2018-05-01
entry	0..*	MAY		3372-32667	
@typeCode	1..1	SHALL		3372-32668	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32669	Care Goal (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.7:2017-08-01
entry	0..*	MAY		3372-34850	
@typeCode	1..1	SHALL		3372-34852	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
actCriteria	1..1	SHALL		3372-34851	Communication: Performed (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.132:2018-05-01
entry	0..*	MAY		3372-32685	
@typeCode	1..1	SHALL		3372-32686	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
procedureCriteria	1..1	SHALL		3372-32687	Device, Applied (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.13:2018-05-01
entry	0..*	MAY		3372-	

				32691	
@typeCode	1..1	SHALL		3372-32692	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
supplyCriteria	1..1	SHALL		3372-32693	Device, Order (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.15:2017-05-01
entry	0..*	MAY		3372-32694	
@typeCode	1..1	SHALL		3372-32695	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
supplyCriteria	1..1	SHALL		3372-32696	Device, Recommended (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.16:2017-05-01
entry	0..*	MAY		3372-34055	
@typeCode	1..1	SHALL		3372-34056	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-34057	Diagnosis (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.110:2017-08-01
entry	0..*	MAY		3372-34038	
@typeCode	1..1	SHALL		3372-34039	DRIV
observationCriteria	1..1	SHALL		3372-34040	Family History (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.111:2017-05-01
entry	0..*	MAY		3372-32715	
@typeCode	1..1	SHALL		3372-32716	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32717	Diagnostic Study, Order (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.22:2018-05-01
entry	0..*	MAY		3372-32718	
@typeCode	1..1	SHALL		3372-32719	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32720	Diagnostic Study, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.23:2017-08-01

entry	0..*	MAY		3372-32721	
@typeCode	1..1	SHALL		3372-32722	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32723	Diagnostic Study, Recommended (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2018-05-01
entry	0..*	MAY		3372-32730	
@typeCode	1..1	SHALL		3372-32731	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
encounterCriteria	1..1	SHALL		3372-32732	Encounter, Order (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.27:2017-05-01
entry	0..*	MAY		3372-32733	
@typeCode	1..1	SHALL		3372-32734	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
encounterCriteria	1..1	SHALL		3372-32735	Encounter, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.5:2017-08-01
entry	0..*	MAY		3372-32736	
@typeCode	1..1	SHALL		3372-32737	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
encounterCriteria	1..1	SHALL		3372-32738	Encounter, Recommended (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.28:2017-05-01
entry	0..*	MAY		3372-32757	
@typeCode	1..1	SHALL		3372-32758	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
actCriteria	1..1	SHALL		3372-32759	Intervention, Order (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.35:2017-05-01
entry	0..*	MAY		3372-32760	
@typeCode	1..1	SHALL		3372-32761	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
actCriteria	1..1	SHALL		3372-32762	Intervention, Performed (V2) (identifier:

				urn:hl7ii:2.16.840.1.113883.10.20.28.4.36:2017-08-01
entry	0..*	MAY	3372-32763	
@typeCode	1..1	SHALL	3372-32764	urn:oid:2.16.840.1.113883.5.10.02 (HL7ActRelationshipType) = DRIV
actCriteria	1..1	SHALL	3372-32765	Intervention, Recommended (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.37:2017-05-01)
entry	0..*	MAY	3372-32775	
@typeCode	1..1	SHALL	3372-32776	urn:oid:2.16.840.1.113883.5.10.02 (HL7ActRelationshipType) = DRIV
procedureCriteria	1..1	SHALL	3372-32777	Laboratory Test, Order (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2018-05-01)
entry	0..*	MAY	3372-32778	
@typeCode	1..1	SHALL	3372-32779	urn:oid:2.16.840.1.113883.5.10.02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL	3372-32780	Laboratory Test, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.42:2017-08-01)
entry	0..*	MAY	3372-32781	
@typeCode	1..1	SHALL	3372-32782	DRIV
observationCriteria	1..1	SHALL	3372-32783	Laboratory Test, Recommended (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2018-05-01)
entry	0..*	MAY	3372-32787	
@typeCode	1..1	SHALL	3372-32788	urn:oid:2.16.840.1.113883.5.10.02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL	3372-32789	Medication, Active (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2018-05-01)
entry	0..*	MAY	3372-32790	
@typeCode	1..1	SHALL	3372-32791	urn:oid:2.16.840.1.113883.5.10.02 (HL7ActRelationshipType) =

					DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-32792	Medication, Administered (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.45:2018-05-01
entry	0..*	MAY		3372-33949	
@typeCode	1..1	SHALL		3372-33950	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-33951	Immunization, Administered (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.112:2018-05-01
entry	0..*	MAY		3372-32797	
@typeCode	1..1	SHALL		3372-32803	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-32804	Medication, Discharge (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.48:2017-08-01
entry	0..*	MAY		3372-32798	
@typeCode	1..1	SHALL		3372-32805	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-32806	Medication, Order (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.51:2018-05-01
entry	0..*	MAY		3372-33955	
@typeCode	1..1	SHALL		3372-33956	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-34037	Immunization, Order (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.113:2017-08-01
entry	0..*	MAY		3372-32799	
@typeCode	1..1	SHALL		3372-32807	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
supplyCriteria	1..1	SHALL		3372-32808	Medication, Dispensed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.49:2017-08-01

entry	0..*	MAY		3372-32811	
@typeCode	1..1	SHALL		3372-32821	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32822	Patient Care Experience (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.52:2017-05-01
entry	0..*	MAY		3372-32812	
@typeCode	1..1	SHALL		3372-32823	DRIV
observationCriteria	1..1	SHALL		3372-32824	Patient Characteristic (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.53:2017-08-01
entry	0..*	MAY		3372-32813	
@typeCode	1..1	SHALL		3372-32825	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32826	Patient Characteristic Clinical Trial Participant (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.6:2017-05-01
entry	0..*	MAY		3372-32814	
@typeCode	1..1	SHALL		3372-32827	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32828	Patient Characteristic Birth Date (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.54:2017-05-01
entry	0..*	MAY		3372-32815	
@typeCode	1..1	SHALL		3372-32829	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-32830	Patient Characteristic Ethnicity (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.56:2017-05-01
entry	0..*	MAY		3372-32816	
@typeCode	1..1	SHALL		3372-32831	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-	Patient Characteristic Expired

				32832	(identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.57:2017-05-01)
entry	0..*	MAY		3372- 32817	
@typeCode	1..1	SHALL		3372- 32833	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372- 32834	Patient Characteristic Payer (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.58:2017-05-01)
entry	0..*	MAY		3372- 32818	
@typeCode	1..1	SHALL		3372- 32835	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372- 32836	Patient Characteristic Race (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.59:2017-05-01)
entry	0..*	MAY		3372- 32819	
@typeCode	1..1	SHALL		3372- 32837	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372- 32838	Patient Characteristic Sex (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.55:2017-05-01)
entry	0..*	MAY		3372- 32844	
@typeCode	1..1	SHALL		3372- 32845	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372- 32846	Physical Exam, Order (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.61:2018-05-01)
entry	0..*	MAY		3372- 32847	
@typeCode	1..1	SHALL		3372- 32848	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372- 32849	Physical Exam, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.62:2017-08-01)
entry	0..*	MAY		3372- 32850	

@typeCode	1..1	SHALL		3372-32851	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
observationCriteria	1..1	SHALL		3372-32852	Physical Exam, Recommended (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2018-05-01
entry	0..*	MAY		3372-32856	
@typeCode	1..1	SHALL		3372-32857	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
procedureCriteria	1..1	SHALL		3372-32858	Procedure, Performed (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2018-05-01
entry	0..*	MAY		3372-32859	
@typeCode	1..1	SHALL		3372-32860	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
procedureCriteria	1..1	SHALL		3372-32861	Procedure, Recommended (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2018-05-01
entry	0..*	MAY		3372-32862	
@typeCode	1..1	SHALL		3372-32863	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
procedureCriteria	1..1	SHALL		3372-32864	Procedure, Order (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2018-05-01
entry	0..*	MAY		3372-32868	
@typeCode	1..1	SHALL		3372-32869	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
observationCriteria	1..1	SHALL		3372-32870	Provider Care Experience (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.70:2017-05-01
entry	0..*	MAY		3372-32871	
@typeCode	1..1	SHALL		3372-32872	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIIV
observationCriteria	1..1	SHALL		3372-32873	Provider Characteristic (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.

					20.28.4.71:2017-08-01
entry	0..*	MAY		3372-32996	
@typeCode	1..1	SHALL		3372-32997	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-32998	Substance, Administered (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.73:2018-05-01
entry	0..*	MAY		3372-33005	
@typeCode	1..1	SHALL		3372-33006	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-33007	Substance, Order (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.77:2018-05-01
entry	0..*	MAY		3372-33011	
@typeCode	1..1	SHALL		3372-33012	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
substanceAdministrationCriteria	1..1	SHALL		3372-33013	Substance, Recommended (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.78:2018-05-01
entry	0..*	MAY		3372-34058	
@typeCode	1..1	SHALL		3372-34059	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
observationCriteria	1..1	SHALL		3372-34113	Symptom (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.116:2017-08-01
entry	0..*	MAY		3372-34878	
@typeCode	1..1	SHALL		3372-34880	DRIV
observationCriteria	1..1	SHALL		3372-34879	Program Participation (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.130:2018-05-01

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-18804).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-18805) such that it
 - i. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.2.6"** (CONF:3372-18806).

- ii. **SHALL** contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33440).
- 2. **MAY** contain zero or one [0..1] **id** (CONF:3372-18856).
- 3. **SHALL** contain exactly one [1..1] **code** (CONF:3372-18807).
 - a. This code **SHALL** contain exactly one [1..1] @code="57025-9" Data Criteria (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1 **STATIC**) (CONF:3372-18808).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3372-30091).
- 4. **SHALL** contain exactly one [1..1] **title** (CONF:3372-18857).
 - a. This title **SHALL** contain exactly one [1..1] @value="Data Criteria Section" (CONF:3372-18964).
- 5. **SHALL** contain exactly one [1..1] **text** (CONF:3372-18858).
- 6. **SHALL** contain at least one [1..*] **entry** (CONF:3372-18853).
- 7. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34258) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34259).
 - b. **SHALL** contain exactly one [1..1] Adverse Event (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.120:2017-08-01) (CONF:3372-34260).
- 8. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34261) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34262).
 - b. **SHALL** contain exactly one [1..1] Allergy Intolerance (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.119:2017-08-01) (CONF:3372-34263).
- 9. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34176) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34177).
 - b. **SHALL** contain exactly one [1..1] Assessment, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.117:2017-08-01) (CONF:3372-34178).
- 10. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34179) such that it
 - a. **SHALL** contain exactly one [1..1] typeId="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34180).
 - b. **SHALL** contain exactly one [1..1] Assessment, Recommended (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2018-05-01) (CONF:3372-34181).
- 11. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34678) such that it

- a. **SHALL** contain exactly one [1..1] **typeId**="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34680).
 - b. **SHALL** contain exactly one [1..1] **Assessment, Order** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.131:2018-05-01) (CONF:3372-34679).
12. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32667) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32668).
 - b. **SHALL** contain exactly one [1..1] **Care Goal (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.7:2017-08-01) (CONF:3372-32669).
13. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34850) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34852).
 - b. **SHALL** contain exactly one [1..1] **Communication: Performed** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.132:2018-05-01) (CONF:3372-34851).
14. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32685) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32686).
 - b. **SHALL** contain exactly one [1..1] **Device, Applied (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2018-05-01) (CONF:3372-32687).
15. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32691) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32692).
 - b. **SHALL** contain exactly one [1..1] **Device, Order** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.15:2017-05-01) (CONF:3372-32693).
16. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32694) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32695).
 - b. **SHALL** contain exactly one [1..1] **Device, Recommended** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.16:2017-05-01) (CONF:3372-32696).
17. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34055) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34056).

- b. **SHALL** contain exactly one [1..1] [Diagnosis \(v2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01) (CONF:3372-34057).
18. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34038) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CONF:3372-34039).
 - b. **SHALL** contain exactly one [1..1] [Family History](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.111:2017-05-01) (CONF:3372-34040).
19. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32715) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32716).
 - b. **SHALL** contain exactly one [1..1] [Diagnostic Study, Order \(v3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2018-05-01) (CONF:3372-32717).
20. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32718) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32719).
 - b. **SHALL** contain exactly one [1..1] [Diagnostic Study, Performed \(v2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.23:2017-08-01) (CONF:3372-32720).
21. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32721) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32722).
 - b. **SHALL** contain exactly one [1..1] [Diagnostic Study, Recommended \(v3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2018-05-01) (CONF:3372-32723).
22. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32730) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32731).
 - b. **SHALL** contain exactly one [1..1] [Encounter, Order](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.27:2017-05-01) (CONF:3372-32732).
23. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32733) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32734).
 - b. **SHALL** contain exactly one [1..1] [Encounter, Performed \(v2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.5:2017-08-01) (CONF:3372-32735).
24. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32736) such that it

- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32737).
 - b. **SHALL** contain exactly one [1..1] Encounter, Recommended (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.28:2017-05-01) (CONF:3372-32738).
25. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32757) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32758).
 - b. **SHALL** contain exactly one [1..1] Intervention, Order (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.35:2017-05-01) (CONF:3372-32759).
26. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32760) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32761).
 - b. **SHALL** contain exactly one [1..1] Intervention, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.36:2017-08-01) (CONF:3372-32762).
27. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32763) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32764).
 - b. **SHALL** contain exactly one [1..1] Intervention, Recommended (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.37:2017-05-01) (CONF:3372-32765).
28. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32775) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32776).
 - b. **SHALL** contain exactly one [1..1] Laboratory Test, Order (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2018-05-01) (CONF:3372-32777).
29. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32778) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32779).
 - b. **SHALL** contain exactly one [1..1] Laboratory Test, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.42:2017-08-01) (CONF:3372-32780).
30. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32781) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CONF:3372-32782).

- b. **SHALL** contain exactly one [1..1] [Laboratory Test, Recommended \(v2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2018-05-01) (CONF:3372-32783).
31. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32787) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32788).
 - SHALL** contain exactly one [1..1] [Medication, Active \(v3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2018-05-01) (CONF:3372-32789).
32. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32790) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32791).
 - SHALL** contain exactly one [1..1] [Medication, Administered \(v3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.45:2018-05-01) (CONF:3372-32792).
33. **MAY** contain zero or more [0..*] **entry** (CONF:3372-33949) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-33950).
 - SHALL** contain exactly one [1..1] [Immunization, Administered \(v3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.112:2018-05-01) (CONF:3372-33951).
34. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32797) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32803).
 - SHALL** contain exactly one [1..1] [Medication, Discharge \(v2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.48:2017-08-01) (CONF:3372-32804).
35. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32798) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32805).
 - SHALL** contain exactly one [1..1] [Medication, Order \(v3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.51:2018-05-01) (CONF:3372-32806).
36. **MAY** contain zero or more [0..*] **entry** (CONF:3372-33955) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-33956).
 - SHALL** contain exactly one [1..1] [Immunization, Order \(v2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.113:2017-08-01) (CONF:3372-34037).

37. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32799) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32807).
 - SHALL** contain exactly one [1..1] Medication, Dispensed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.49:2017-08-01) (CONF:3372-32808).
38. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32811) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32821).
 - SHALL** contain exactly one [1..1] Patient Care Experience (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.52:2017-05-01) (CONF:3372-32822).
39. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32812) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CONF:3372-32823).
 - SHALL** contain exactly one [1..1] Patient Characteristic (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.53:2017-08-01) (CONF:3372-32824).
40. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32813) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32825).
 - SHALL** contain exactly one [1..1] Patient Characteristic Clinical Trial Participant (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.6:2017-05-01) (CONF:3372-32826).
41. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32814) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32827).
 - SHALL** contain exactly one [1..1] Patient Characteristic Birth Date (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.54:2017-05-01) (CONF:3372-32828).
42. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32815) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32829).
 - SHALL** contain exactly one [1..1] Patient Characteristic Ethnicity (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.56:2017-05-01) (CONF:3372-32830).
43. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32816) such that it

- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32831).
 - b. **SHALL** contain exactly one [1..1] Patient Characteristic Expired (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.57:2017-05-01) (CONF:3372-32832).
44. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32817) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32833).
 - b. **SHALL** contain exactly one [1..1] Patient Characteristic Payer (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.58:2017-05-01) (CONF:3372-32834).
45. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32818) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32835).
 - b. **SHALL** contain exactly one [1..1] Patient Characteristic Race (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.59:2017-05-01) (CONF:3372-32836).
46. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32819) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32837).
 - b. **SHALL** contain exactly one [1..1] Patient Characteristic Sex (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.55:2017-05-01) (CONF:3372-32838).
47. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32844) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32845).
 - b. **SHALL** contain exactly one [1..1] Physical Exam, Order (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.61:2018-05-01) (CONF:3372-32846).
48. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32847) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32848).
 - b. **SHALL** contain exactly one [1..1] Physical Exam, Performed (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.62:2017-08-01) (CONF:3372-32849).
49. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32850) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32851).

- b. **SHALL** contain exactly one [1..1] [Physical Exam, Recommended \(V2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2018-05-01) (CONF:3372-32852).
50. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32856) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32857).
 - SHALL** contain exactly one [1..1] [Procedure, Performed \(V3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2018-05-01) (CONF:3372-32858).
51. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32859) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32860).
 - SHALL** contain exactly one [1..1] [Procedure, Recommended \(V2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2018-05-01) (CONF:3372-32861).
52. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32862) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32863).
 - SHALL** contain exactly one [1..1] [Procedure, Order \(V3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2018-05-01) (CONF:3372-32864).
53. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32868) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32869).
 - SHALL** contain exactly one [1..1] [Provider Care Experience](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.70:2017-05-01) (CONF:3372-32870).
54. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32871) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32872).
 - SHALL** contain exactly one [1..1] [Provider Characteristic \(V2\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.71:2017-08-01) (CONF:3372-32873).
55. **MAY** contain zero or more [0..*] **entry** (CONF:3372-32996) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32997).
 - SHALL** contain exactly one [1..1] [Substance, Administered \(V3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.73:2018-05-01) (CONF:3372-32998).

56. **MAY** contain zero or more [0..*] **entry** (CONF:3372-33005) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-33006).
 - SHALL** contain exactly one [1..1] Substance, Order (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.77:2018-05-01) (CONF:3372-33007).
57. **MAY** contain zero or more [0..*] **entry** (CONF:3372-33011) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-33012).
 - SHALL** contain exactly one [1..1] Substance, Recommended (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.78:2018-05-01) (CONF:3372-33013).
58. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34058) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34059).
 - SHALL** contain exactly one [1..1] Symptom (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.116:2017-08-01) (CONF:3372-34113).
59. **MAY** contain zero or more [0..*] **entry** (CONF:3372-34878) such that it
- SHALL** contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CONF:3372-34880).
 - SHALL** contain exactly one [1..1] Program Participation (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.130:2018-05-01) (CONF:3372-34879).

4.2 Measure Description Section

[measureDescriptionSection: identifier urn:oid:2.16.840.1.113883.10.20.28.2.3
(open)]

Table 5: Measure Description Section Contexts

Contained By:	Contains:
<u>QDM Templates for CQL-Based HQMF Header (V3)</u> (optional)	

The Measure Description Section is used to provide a more detailed or embellished description, such as one containing images and/or flow diagrams, than that provided in QualityMeasureDocument.text.

Table 6: Measure Description Section Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
measureDescriptionSection (identifier: urn:oid:2.16.840.1.113883.10.20.28.2.3)					
templateId	1..1	SHALL		87-18897	
item	1..1	SHALL		87-18898	
@root	1..1	SHALL		87-18899	2.16.840.1.113883.10.20.28.2.3
id	0..1	MAY		87-18913	
code	1..1	SHALL		87-18914	
@code	1..1	SHALL		87-19064	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 74045-6
@codeSystem	1..1	SHALL		87-30102	urn:oid:2.16.840.1.113883.6.1 (LOINC)
title	1..1	SHALL		87-18918	
@value	1..1	SHALL		87-18919	Measure Description Section
text	1..1	SHALL		87-18920	

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:87-18897).
 - a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:87-18898) such that it
 - i. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.2.3"** (CONF:87-18899).
2. **MAY** contain zero or one [0..1] **id** (CONF:87-18913).
3. **SHALL** contain exactly one [1..1] **code** (CONF:87-18914).
 - a. This code **SHALL** contain exactly one [1..1] **@code="74045-6"** Measure Description (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1 **STATIC**) (CONF:87-19064).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:87-30102).
4. **SHALL** contain exactly one [1..1] **title** (CONF:87-18918).
 - a. This title **SHALL** contain exactly one [1..1] **@value="Measure Description Section"** (CONF:87-18919).
5. **SHALL** contain exactly one [1..1] **text** (CONF:87-18920).

Figure 2: Measure Description Section Example

```
<component>
  <measureDescriptionSection>
    <templateId>
      <item root="2.16.840.1.113883.10.20.28.2.3"/>
    </templateId>
    <code code="74045-6" codeSystem="2.16.840.1.113883.6.1">
      <displayName value="Measure Description"/>
    </code>
    <title value="Measure Description Section"/>
    <text value="...."/>
  </measureDescriptionSection>
</component>
```

4.3 Measure Observations Section (V2)

[measureObservationsSection: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.2.4:2018-05-01 (open)]

Table 7: Measure Observations Section (V2) Contexts

Contained By:	Contains:
ODM Templates for CQL-Based HQMF Header (V3) - Draft (optional)	

The Measure Observations section defines computations (e.g., time from check in to antibiotic administration) used to score particular aspects of performance. Measure observations are used in ratio and continuous variable eCQM.

Table 8: Measure Observations Section (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
measureObservationsSection (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.2.4:2018-05-01)					
templateId	1..1	SHALL		3372-18901	
item	1..1	SHALL		3372-18902	
@root	1..1	SHALL		3372-18903	2.16.840.1.113883.10.20.28.2.4
@extension	1..1	SHALL		3372-30104	2018-05-01
id	0..1	MAY		3372-18904	
code	1..1	SHALL		3372-18905	
@code	1..1	SHALL		3372-18906	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 57027-5
@codeSystem	1..1	SHALL		3372-30103	urn:oid:2.16.840.1.113883.6.1 (LOINC)
title	1..1	SHALL		3372-18910	
@value	1..1	SHALL		3372-18965	Measure Observations Section
text	1..1	SHALL		3372-18911	
definition	1..*	SHALL		3372-30105	
measureObservationDefinition	1..1	SHALL		3372-34644	
code	1..1	SHALL		3372-34650	
value	1..1	SHALL		3372-34651	
methodCode	1..1	SHALL		3372-34649	
component	1..1	SHALL		3372-34645	
criteriaReference	1..1	SHALL		3372-34646	
@classCode	1..1	SHALL		3372-34647	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3372-34648	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-18901).

- a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:3372-18902) such that it
 - i. **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.28.2.4" (CONF:3372-18903).
 - ii. **SHALL** contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-30104).
- 2. **MAY** contain zero or one [0..1] **id** (CONF:3372-18904).
- 3. **SHALL** contain exactly one [1..1] **code** (CONF:3372-18905).
 - a. This code **SHALL** contain exactly one [1..1] @code="57027-5" Measure Observation (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1 **STATIC**) (CONF:3372-18906).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3372-30103).
- 4. **SHALL** contain exactly one [1..1] **title** (CONF:3372-18910).
 - a. This title **SHALL** contain exactly one [1..1] @value="Measure Observations Section" (CONF:3372-18965).
- 5. **SHALL** contain exactly one [1..1] **text** (CONF:3372-18911).
- 6. **SHALL** contain at least one [1..*] **definition** (CONF:3372-30105).
 - a. Such definitions **SHALL** contain exactly one [1..1] **measureObservationDefinition** (CONF:3372-34644).
 - i. This measureObservationDefinition **SHALL** contain exactly one [1..1] **code** (CONF:3372-34650).
 - ii. This measureObservationDefinition **SHALL** contain exactly one [1..1] **value** (CONF:3372-34651).
 - iii. This measureObservationDefinition **SHALL** contain exactly one [1..1] **methodCode** (CONF:3372-34649).
 - iv. This measureObservationDefinition **SHALL** contain exactly one [1..1] **component** (CONF:3372-34645).
 - 1. This **component** **SHALL** contain exactly one [1..1] **criteriaReference** (CONF:3372-34646).
 - a. This **criteriaReference** **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3372-34647).
 - b. This **criteriaReference** **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-34648).

Figure 3: Measure Observations Section (V2) Example

```
<component>
  <measureObservationSection>
    <templateId>
      <item root="2.16.840.1.113883.10.20.28.2.4" extension="2018-05-01"/>
    </templateId>
    <code code="57027-5" codeSystem="2.16.840.1.113883.6.1">
      <displayName value="Measure Observation"/>
    </code>
    <title value="Measure Observation Section"/>
    <text value="...."/>
    <definition>
      <measureObservationDefinition classCode="OBS" moodCode="DEF">
        <id extension="Measure Observation"
root="8A9A47CF-45A4-4385-923C-5A045D8EA9F8"/>
        <code code="AGGREGATE" codeSystem="2.16.840.1.113883.5.4"/>
        <value nullFlavor="DER" xsi:type="INT">
          <expression value="TestCMS55v5.&quot;Measure Observation&quot;"/>
        </value>
        <component typeCode="COMP">
          <criteriaReference classCode="OBS" moodCode="EVN">
            <id extension="measurePopulation"
root="DFAAF6C1-0609-49C7-BCEA-8EEDFB65DCFF"/>
            </criteriaReference>
          </component>
        </measureObservationDefinition>
      </definition>
    </measureObservationSection>
  </component>
```

4.4 Population Criteria Section (V2)

[populationCriteriaSection: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.2.7:2017-08-01 (open)]

Table 9: Population Criteria Section (V2) Contexts

Contained By:	Contains:
QDM Templates for CQL-Based HQMF Header (V3) (required)	

The Population Criteria Section is used to formalize a measure's population types (e.g., initial population, numerator, denominator).

Please refer to Volume 1 and Volume 2 of this IG for additional constraints and examples for the Population Criteria Section.

Table 10: Population Criteria Section (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
populationCriteriaSection (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.2.7:2017-08-01)					
templateId	1..1	SHALL		3346-18774	
item	1..1	SHALL		3346-18775	
@root	1..1	SHALL		3346-18776	2.16.840.1.113883.10.20.28.2.7
@extension	1..1	SHALL		3346-34633	2017-08-01
id	0..1	MAY		3346-18960	
code	1..1	SHALL		3346-19059	
@code	1..1	SHALL		3346-19060	57026-7
@codeSystem	1..1	SHALL		3346-30092	urn:oid:2.16.840.1.113883.6.1 (LOINC)
title	1..1	SHALL		3346-18781	
@value	1..1	SHALL		3346-18782	Population Criteria Section
text	1..1	SHALL		3346-18961	
component	1..*	SHALL		3346-29995	
initialPopulationCriteria	1..1	SHALL		3346-29996	
code	1..1	SHALL		3346-30022	
@code	1..1	SHALL		3346-30023	IPOP
@codeSystem	1..1	SHALL		3346-30093	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
precondition	1..*	SHALL		3346-34868	
criteriaReference	1..1	SHALL		3346-34869	
id	1..1	SHALL		3346-34870	
@root	1..1	SHALL		3346-34886	
@extension	1..1	SHALL		3346-34887	

component	0..*	MAY		3346-30024	
numeratorCriteria	1..1	SHALL		3346-30025	
code	1..1	SHALL		3346-30028	
@code	1..1	SHALL		3346-30029	NUMER
@codeSystem	1..1	SHALL		3346-30094	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
precondition	1..*	SHALL		3346-34871	
criteriaReference	1..1	SHALL		3346-34872	
id	1..1	SHALL		3346-34873	
@root	1..1	SHALL		3346-34888	
@extension	1..1	SHALL		3346-34889	
component	0..*	MAY		3346-30026	
denominatorCriteria	1..1	SHALL		3346-30027	
code	1..1	SHALL		3346-30030	
@code	1..1	SHALL		3346-30031	DENOM
@codeSystem	1..1	SHALL		3346-30095	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
precondition	1..*	SHALL		3346-34874	
criteriaReference	1..1	SHALL		3346-34875	
id	1..1	SHALL		3346-34876	
@root	1..1	SHALL		3346-34890	
@extension	1..1	SHALL		3346-34891	
component	0..*	MAY		3346-30032	
measurePopulationCriteria	1..1	SHALL		3346-30033	
code	1..1	SHALL		3346-30034	
@code	1..1	SHALL		3346-	MSRPOPL

				30035	
@codeSystem	1..1	SHALL		3346-30096	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
precondition	1..*	SHALL		3346-34877	
criteriaReference	1..1	SHALL		3346-34878	
id	1..1	SHALL		3346-34879	
@root	1..1	SHALL		3346-34892	
@extension	1..1	SHALL		3346-34893	
component	0..*	MAY		3346-30036	
denominatorExceptionCriteria	1..1	SHALL		3346-30037	
code	1..1	SHALL		3346-30038	
@code	1..1	SHALL		3346-30039	DENEXCEP
@codeSystem	1..1	SHALL		3346-30097	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
precondition	1..*	SHALL		3346-34880	
criteriaReference	1..1	SHALL		3346-34881	
id	1..1	SHALL		3346-34882	
@root	1..1	SHALL		3346-34894	
@extension	1..1	SHALL		3346-34895	
component	0..*	MAY		3346-30040	
denominatorExclusionCriteria	1..1	SHALL		3346-30041	
code	1..1	SHALL		3346-30042	
@code	1..1	SHALL		3346-30043	DENEX
@codeSystem	1..1	SHALL		3346-30098	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
precondition	1..*	SHALL		3346-34883	
criteriaReference	1..1	SHALL		3346-34884	

<code>id</code>	1..1	SHALL		3346-34885	
<code>@root</code>	1..1	SHALL		3346-34896	
<code>@extension</code>	1..1	SHALL		3346-34897	
<code>component</code>	0..*	MAY		3346-30044	
<code>numeratorExclusionCriteria</code>	1..1	SHALL		3346-30045	
<code>code</code>	1..1	SHALL		3346-30046	
<code>@code</code>	1..1	SHALL		3346-30047	NUMEX
<code>@codeSystem</code>	1..1	SHALL		3346-30099	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
<code>precondition</code>	1..*	SHALL		3346-34898	
<code>criteriaReference</code>	1..1	SHALL		3346-34899	
<code>id</code>	1..1	SHALL		3346-34900	
<code>@root</code>	1..1	SHALL		3346-34904	
<code>@extension</code>	1..1	SHALL		3346-34905	
<code>component</code>	0..*	MAY		3346-30048	
<code>measurePopulationExclusionCriteria</code>	1..1	SHALL		3346-30049	
<code>code</code>	1..1	SHALL		3346-30050	
<code>@code</code>	1..1	SHALL		3346-30051	MSRPOPLEX
<code>@codeSystem</code>	1..1	SHALL		3346-30100	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
<code>precondition</code>	1..*	SHALL		3346-34901	
<code>criteriaReference</code>	1..1	SHALL		3346-34902	
<code>id</code>	1..1	SHALL		3346-34903	
<code>@root</code>	1..1	SHALL		3346-34906	
<code>@extension</code>	1..1	SHALL		3346-34907	

component	0..*	MAY		3346-30052	
stratifierCriteria	1..1	SHALL		3346-30053	
code	0..1	MAY		3346-30054	
@code	1..1	SHALL		3346-30055	STRAT
@codeSystem	1..1	SHALL		3346-30101	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
precondition	1..*	SHALL		3346-34634	
criteriaReference	1..1	SHALL		3346-34635	
id	1..1	SHALL		3346-34644	
@root	1..1	SHALL		3346-34645	
@extension	1..1	SHALL		3346-34646	

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-18774).
 - a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:3346-18775) such that it
 - i. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.2.7"** (CONF:3346-18776).
 - ii. **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-34633).
2. **MAY** contain zero or one [0..1] **id** (CONF:3346-18960).
3. **SHALL** contain exactly one [1..1] **code** (CONF:3346-19059).
 - a. This code **SHALL** contain exactly one [1..1] **@code="57026-7"** Population Criteria (CONF:3346-19060).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3346-30092).
4. **SHALL** contain exactly one [1..1] **title** (CONF:3346-18781).
 - a. This title **SHALL** contain exactly one [1..1] **@value="Population Criteria Section"** (CONF:3346-18782).
5. **SHALL** contain exactly one [1..1] **text** (CONF:3346-18961).
6. **SHALL** contain at least one [1..*] **component** (CONF:3346-29995) such that it
 - a. **SHALL** contain exactly one [1..1] **initialPopulationCriteria** (CONF:3346-29996).
 - i. This initialPopulationCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30022).
 1. This code **SHALL** contain exactly one [1..1] **@code="IPOP"** Initial Population (CONF:3346-30023).

2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3346-30093).
- ii. This initialPopulationCriteria **SHALL** contain at least one [1..*] **precondition**
 (CONF:3346-34868).
 1. Such preconditions **SHALL** contain exactly one [1..1]
criteriaReference (CONF:3346-34869).
 - a. This criteriaReference **SHALL** contain exactly one [1..1] **id**
 (CONF:3346-34870).
 - i. This id **SHALL** contain exactly one [1..1] **@root**
 (CONF:3346-34886).
 - ii. This id **SHALL** contain exactly one [1..1] **@extension**
 (CONF:3346-34887).
7. **MAY** contain zero or more [0..*] **component** (CONF:3346-30024) such that it
 - a. **SHALL** contain exactly one [1..1] **numeratorCriteria** (CONF:3346-30025).
 - i. This numeratorCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30028).
 1. This code **SHALL** contain exactly one [1..1] **@code="NUMER"**
 Numerator (CONF:3346-30029).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3346-30094).
 - ii. This numeratorCriteria **SHALL** contain at least one [1..*] **precondition**
 (CONF:3346-34871).
 1. Such preconditions **SHALL** contain exactly one [1..1]
criteriaReference (CONF:3346-34872).
 - a. This criteriaReference **SHALL** contain exactly one [1..1] **id**
 (CONF:3346-34873).
 - i. This id **SHALL** contain exactly one [1..1] **@root**
 (CONF:3346-34888).
 - ii. This id **SHALL** contain exactly one [1..1] **@extension**
 (CONF:3346-34889).
 8. **MAY** contain zero or more [0..*] **component** (CONF:3346-30026) such that it
 - a. **SHALL** contain exactly one [1..1] **denominatorCriteria** (CONF:3346-30027).
 - i. This denominatorCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30030).
 1. This code **SHALL** contain exactly one [1..1] **@code="DENOM"**
 Denominator (CONF:3346-30031).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem**
 (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4)
 (CONF:3346-30095).
 - ii. This denominatorCriteria **SHALL** contain at least one [1..*] **precondition**
 (CONF:3346-34874).
 1. Such preconditions **SHALL** contain exactly one [1..1]
criteriaReference (CONF:3346-34875).

- a. This criteriaReference **SHALL** contain exactly one [1..1] **id** (CONF:3346-34876).
 - i. This id **SHALL** contain exactly one [1..1] **@root** (CONF:3346-34890).
 - ii. This id **SHALL** contain exactly one [1..1] **@extension** (CONF:3346-34891).
9. **MAY** contain zero or more [0..*] **component** (CONF:3346-30032) such that it
- a. **SHALL** contain exactly one [1..1] **measurePopulationCriteria** (CONF:3346-30033).
 - i. This measurePopulationCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30034).
 - 1. This code **SHALL** contain exactly one [1..1] **@code="MSRPOPL"** Measure Population (CONF:3346-30035).
 - 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30096).
 - ii. This measurePopulationCriteria **SHALL** contain at least one [1..*] **precondition** (CONF:3346-34877).
 - 1. Such preconditions **SHALL** contain exactly one [1..1] **criteriaReference** (CONF:3346-34878).
 - a. This criteriaReference **SHALL** contain exactly one [1..1] **id** (CONF:3346-34879).
 - i. This id **SHALL** contain exactly one [1..1] **@root** (CONF:3346-34892).
 - ii. This id **SHALL** contain exactly one [1..1] **@extension** (CONF:3346-34893).
10. **MAY** contain zero or more [0..*] **component** (CONF:3346-30036) such that it
- a. **SHALL** contain exactly one [1..1] **denominatorExceptionCriteria** (CONF:3346-30037).
 - i. This denominatorExceptionCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30038).
 - 1. This code **SHALL** contain exactly one [1..1] **@code="DENEXCEP"** Denominator Exception (CONF:3346-30039).
 - 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30097).
 - ii. This denominatorExceptionCriteria **SHALL** contain at least one [1..*] **precondition** (CONF:3346-34880).
 - 1. Such preconditions **SHALL** contain exactly one [1..1] **criteriaReference** (CONF:3346-34881).
 - a. This criteriaReference **SHALL** contain exactly one [1..1] **id** (CONF:3346-34882).
 - i. This id **SHALL** contain exactly one [1..1] **@root** (CONF:3346-34894).
 - ii. This id **SHALL** contain exactly one [1..1] **@extension** (CONF:3346-34895).

11. **MAY** contain zero or more [0..*] **component** (CONF:3346-30040) such that it
- SHALL** contain exactly one [1..1] **denominatorExclusionCriteria** (CONF:3346-30041).
 - This denominatorExclusionCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30042).
 - This code **SHALL** contain exactly one [1..1] @code="DENEX" Denominator Exclusion (CONF:3346-30043).
 - This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30098).
 - This denominatorExclusionCriteria **SHALL** contain at least one [1..*] **precondition** (CONF:3346-34883).
 - Such preconditions **SHALL** contain exactly one [1..1] **criteriaReference** (CONF:3346-34884).
 - This criteriaReference **SHALL** contain exactly one [1..1] **id** (CONF:3346-34885).
 - This id **SHALL** contain exactly one [1..1] @root (CONF:3346-34896).
 - This id **SHALL** contain exactly one [1..1] @extension (CONF:3346-34897).
12. **MAY** contain zero or more [0..*] **component** (CONF:3346-30044) such that it
- SHALL** contain exactly one [1..1] **numeratorExclusionCriteria** (CONF:3346-30045).
 - This numeratorExclusionCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30046).
 - This code **SHALL** contain exactly one [1..1] @code="NUMEX" Numerator Exclusion (CONF:3346-30047).
 - This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30099).
 - This numeratorExclusionCriteria **SHALL** contain at least one [1..*] **precondition** (CONF:3346-34898).
 - Such preconditions **SHALL** contain exactly one [1..1] **criteriaReference** (CONF:3346-34899).
 - This criteriaReference **SHALL** contain exactly one [1..1] **id** (CONF:3346-34900).
 - This id **SHALL** contain exactly one [1..1] @root (CONF:3346-34904).
 - This id **SHALL** contain exactly one [1..1] @extension (CONF:3346-34905).
13. **MAY** contain zero or more [0..*] **component** (CONF:3346-30048) such that it
- SHALL** contain exactly one [1..1] **measurePopulationExclusionCriteria** (CONF:3346-30049).
 - This measurePopulationExclusionCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-30050).

1. This code **SHALL** contain exactly one [1..1] @code="MSRPOPLEX" Measure Population Exclusions (CONF:3346-30051).
 2. This code **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30100).
 - ii. This measurePopulationExclusionCriteria **SHALL** contain at least one [1..*] **precondition** (CONF:3346-34901).
 1. Such preconditions **SHALL** contain exactly one [1..1] **criteriaReference** (CONF:3346-34902).
 - a. This criteriaReference **SHALL** contain exactly one [1..1] **id** (CONF:3346-34903).
 - i. This id **SHALL** contain exactly one [1..1] @root (CONF:3346-34906).
 - ii. This id **SHALL** contain exactly one [1..1] @extension (CONF:3346-34907).
14. **MAY** contain zero or more [0..*] **component** (CONF:3346-30052) such that it
- a. **SHALL** contain exactly one [1..1] **stratifierCriteria** (CONF:3346-30053).
 - i. This stratifierCriteria **MAY** contain zero or one [0..1] **code** (CONF:3346-30054).
 1. The code, if present, **SHALL** contain exactly one [1..1] @code="STRAT" Stratification (CONF:3346-30055).
 2. The code, if present, **SHALL** contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30101).
 - ii. This stratifierCriteria **SHALL** contain at least one [1..*] **precondition** (CONF:3346-34634).
 1. Such preconditions **SHALL** contain exactly one [1..1] **criteriaReference** (CONF:3346-34635).
 - a. This criteriaReference **SHALL** contain exactly one [1..1] **id** (CONF:3346-34644).
 - i. This id **SHALL** contain exactly one [1..1] @root (CONF:3346-34645).
 - ii. This id **SHALL** contain exactly one [1..1] @extension (CONF:3346-34646).

5 ENTRY

5.1 Admission Source

[Role: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.123:2017-05-01
(open)]

Table 11: Admission Source Contexts

Contained By:	Contains:
Encounter, Performed (V2) (optional)	

This template represents the QDM attribute: Admission Source.

The location from which the patient was admitted (e.g., physician referral, facility from which the patient was transferred).

Table 12: Admission Source Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
Role (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.123:2017-05-01)					
@classCode	1..1	SHALL		3335-34344	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = SDLOC
templateId	1..1	SHALL		3335-34340	
item	1..1	SHALL		3335-34341	
@root	1..1	SHALL		3335-34345	2.16.840.1.113883.10.20.28.3.123
@extension	1..1	SHALL		3335-34530	2017-05-01
code	1..1	SHALL		3335-34342	
@valueSet	0..1	SHOULD		3335-34346	

1. **SHALL** contain exactly one [1..1] **@classCode="SDLOC"** Service Delivery Location (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-34344).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-34340).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-34341) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.3.123"** (CONF:3335-34345).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-34530).
3. **SHALL** contain exactly one [1..1] **code** (CONF:3335-34342).

- a. This code **SHOULD** contain zero or one [0..1] @valueSet (CONF:3335-34346).

Figure 4: Admission Source Example

```
<role classCode="SDLOC">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.123" extension="2017-05-01"/>
  </templateId>
  <code valueSet="{{$QDMElementValueSetOID}}"/>
</role>
```

5.2 Adverse Event (V2)

[observationCriteria: identifier
 urn:hl7ii:2.16.840.1.113883.10.20.28.4.120:2017-08-01 (open)]

Table 13: Adverse Event (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Facility Location (optional) Severity Observation (V2) (optional)

This template represents the QDM data type: Adverse Event.

Adverse Event is used to define any untoward medical occurrence associated with the clinical care delivery, whether or not considered drug related.

Timing: The Prevalence Period references the time from the onset date to the abatement date.

Table 14: Adverse Event (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.120:2017-08-01)					
@classCode	1..1	SHALL		3346-34210	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3346-34211	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3346-34758	
templateId	1..1	SHALL		3346-34183	
item	1..1	SHALL		3346-34184	
@root	1..1	SHALL		3346-34194	2.16.840.1.113883.10.20.28.4.1 20
@extension	1..1	SHALL		3346-34531	2017-08-01
id	1..1	SHALL		3346-34212	
code	1..1	SHALL		3346-34185	
@code	1..1	SHALL		3346-34196	ASSERTION
@codeSystem	1..1	SHALL		3346-34197	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
title	1..1	SHALL		3346-34213	
statusCode	1..1	SHALL		3346-34186	
@code	1..1	SHALL		3346-34198	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-34187	
low	0..1	MAY		3346-34199	
high	0..1	MAY		3346-34200	
value	1..1	SHALL	CD	3346-34188	
@code	1..1	SHALL		3346-34201	281647001
@codeSystem	1..1	SHALL		3346-34202	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
participation	1..1	SHALL		3346-	

				34189	
@typeCode	1..1	SHALL		3346-34207	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3346-34190	
@classCode	1..1	SHALL		3346-34206	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = MANU
playingEntity	1..1	SHALL		3346-34191	
@classCode	1..1	SHALL		3346-34204	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3346-34205	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3346-34192	
@valueSet	0..1	SHOULD		3346-34203	
participation	0..1	MAY		3346-34692	
@typeCode	1..1	SHALL		3346-34694	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34695	
role	1..1	SHALL		3346-34693	
@classCode	1..1	SHALL		3346-34696	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34697	
participation	0..*	MAY		3346-34500	
@typeCode	1..1	SHALL		3346-34501	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = LOC
role	1..1	SHALL		3346-34502	Facility Location (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.92:2017-05-01
outboundRelationship	0..1	MAY		3346-34497	
@typeCode	1..1	SHALL		3346-34498	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-34499	Severity Observation (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.93:2017-08-01
outboundRelationship	0..1	MAY		3346-34682	
@typeCode	1..1	SHALL		3346-	urn:oid:2.16.840.1.113883.5.10

				34686	02 (HL7ActRelationshipType) = REF
observationCriteria	1..1	SHALL		3346-34683	
@classCode	1..1	SHALL		3346-34687	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3346-34688	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
code	1..1	SHALL		3346-34684	
@code	1..1	SHALL		3346-34689	ASSERTION
@codeSystem	1..1	SHALL		3346-34690	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
value	1..1	SHALL	CD	3346-34685	
@valueSet	0..1	SHOULD		3346-34691	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3346-34210).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-34211).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3346-34758).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-34183).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-34184) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.120"** (CONF:3346-34194).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-34531).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-34212).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-34185).
 - a. This code **SHALL** contain exactly one [1..1] **@code="ASSERTION"** Assertion (CONF:3346-34196).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.5.4"** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-34197).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3346-34213).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-34186).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-34198).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-34187) such that it
Note: QDM Attribute: Relevant Period (The Relevant Period references the time from the adverse event began to the time the adverse event completed)

- a. **MAY** contain zero or one [0..1] **low** (CONF:3346-34199).
Note: StartTime – the time the adverse event began
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-34200).
Note: StopTime – the time the adverse event completed
10. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3346-34188).
- a. This value **SHALL** contain exactly one [1..1] @code="281647001" Adverse Reaction (CONF:3346-34201).
 - b. This value **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-34202).
11. **SHALL** contain exactly one [1..1] **participation** (CONF:3346-34189) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="CSM" Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34207).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34190).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="MANU" Manufactured (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34206).
 - ii. This role **SHALL** contain exactly one [1..1] **playingEntity** (CONF:3346-34191).
 - 1. This playingEntity **SHALL** contain exactly one [1..1] @classCode="MMAT" Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3346-34204).
 - 2. This playingEntity **SHALL** contain exactly one [1..1] @determinerCode="KIND" Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3346-34205).
 - 3. This playingEntity **SHALL** contain exactly one [1..1] **code** (CONF:3346-34192).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-34203).
12. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34692) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34694).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34695).
Note: QDM Attribute: Author dateTime
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34693).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34696).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34697).
13. **MAY** contain zero or more [0..*] **participation** (CONF:3346-34500) such that it
Note: QDM Attribute: FacilityLocations

- a. **SHALL** contain exactly one [1..1] @typeCode="LOC" Location (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-34501).
 - b. **SHALL** contain exactly one [1..1] Facility Location (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01) (CONF:3346-34502).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34497) such that it
 Note: QDM Attribute: Severity
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34498).
 - b. **SHALL** contain exactly one [1..1] Severity Observation (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01) (CONF:3346-34499).
15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34682) such that it
 Note: QDM Attribute: Type - The characterization of the reaction (e.g., hypersensitivity, rash, gastrointestinal symptoms, etc.)
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34686).
 - b. **SHALL** contain exactly one [1..1] **observationCriteria** (CONF:3346-34683).
 - i. This observationCriteria **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3346-34687).
 - ii. This observationCriteria **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-34688).
 - iii. This observationCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-34684).
 - 1. This code **SHALL** contain exactly one [1..1] @code="ASSERTION" Assertion (CONF:3346-34689).
 - 2. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-34690).
 - iv. This observationCriteria **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3346-34685).
 - 1. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-34691).

Figure 5: Adverse Event (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.120" extension="2017-08-01"/>
    </templateId>
    <id root="69da3f12-e963-4f6f-baed-3e59cf9b58c8"/>
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4" codeSystemName="ActCode"/>
    <title value="Adverse Event"/>
    <statusCode code="completed"/>
    <value xsi:type="CD" code="281647001" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED-CT">
        <displayName value="Adverse Reaction"/>
    </value>
    <participation typeCode="CSM">
        <role classCode="MANU">
            <playingEntity classCode="MMAT" determinerCode="KIND">
                <code valueSet="{$QDMElementValueSetOID}"/>
            </playingEntity>
        </role>
    </participation>
</observationCriteria>
```

5.3 Allergy Intolerance (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.119:2017-08-01 (open)]

Table 15: Allergy Intolerance (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Severity Observation (V2) (optional)

This template represents the QDM data type: Allergy/Intolerance.

Allergy is used to address immune-mediated reactions to a substance such as type 1 hypersensitivity reactions, other allergy-like reactions, including pseudo-allergy.

Intolerance is a record of a clinical assessment of a propensity, or a potential risk to an individual, to have a non-immune mediated adverse reaction on future exposure to the specified substance, or class of substance.

Timing: The Prevalence Period references the time from the onset date to the abatement date.

Table 16: Allergy Intolerance (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.119:2017-08-01)					
@classCode	1..1	SHALL		3346-34241	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3346-34242	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3346-34759	
templateId	1..1	SHALL		3346-34215	
item	1..1	SHALL		3346-34216	
@root	1..1	SHALL		3346-34228	2.16.840.1.113883.10.20.28.4.1 19
@extension	1..1	SHALL		3346-34532	2017-08-01
id	1..1	SHALL		3346-34243	
code	1..1	SHALL		3346-34217	
@code	1..1	SHALL		3346-34229	ASSERTION
@codeSystem	1..1	SHALL		3346-34230	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
title	1..1	SHALL		3346-34244	
statusCode	1..1	SHALL		3346-34218	
@code	1..1	SHALL		3346-34231	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-34219	
low	0..1	MAY		3346-34232	
high	0..1	MAY		3346-34233	
value	1..1	SHALL	CD	3346-34220	
@code	1..1	SHALL		3346-34234	106190000
@codeSystem	1..1	SHALL		3346-34235	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
participation	1..1	SHALL		3346-	

				34221	
@typeCode	1..1	SHALL		3346-34240	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3346-34222	
@classCode	1..1	SHALL		3346-34239	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = MANU
playingEntity	1..1	SHALL		3346-34223	
@classCode	1..1	SHALL		3346-34237	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3346-34238	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3346-34224	
@valueSet	0..1	SHOULD		3346-34236	
participation	0..1	MAY		3346-34710	
@typeCode	1..1	SHALL		3346-34713	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34711	
low	1..1	SHALL		3346-34714	
role	1..1	SHALL		3346-34712	
@classCode	1..1	SHALL		3346-34715	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34716	
outboundRelationship	0..1	MAY		3346-34214	
@typeCode	1..1	SHALL		3346-34226	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-34225	Severity Observation (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01)
outboundRelationship	0..1	MAY		3346-34704	
@typeCode	1..1	SHALL		3346-34709	REFR
observationCriteria	1..1	SHALL		3346-34705	
@classCode	1..1	SHALL		3346-34707	OBS

@moodCode	1..1	SHALL		3346-34708	EVN
code	1..1	SHALL		3346-34706	
@code	1..1	SHALL		3346-34698	ASSERTION
@codeSystem	1..1	SHALL		3346-34699	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
value	1..1	SHALL	CD	3346-34700	
@valueSet	0..1	SHOULD		3346-34701	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3346-34241).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-34242).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3346-34759).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-34215).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-34216) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.119"** (CONF:3346-34228).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-34532).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-34243).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-34217).
 - a. This code **SHALL** contain exactly one [1..1] **@code="ASSERTION"** Assertion (CONF:3346-34229).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.5.4"** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-34230).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3346-34244).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-34218).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-34231).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-34219) such that it

Note: QDM Attribute: Prevalence Period - The Prevalence Period references the time from the onset date to the abatement date

 - a. **MAY** contain zero or one [0..1] **low** (CONF:3346-34232).

Note: Onset Date
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-34233).

Note: Abatement Date
10. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:3346-34220).

- a. This value **SHALL** contain exactly one [1..1] @code="106190000" Allergy (CONF:3346-34234).
 - b. This value **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-34235).
11. **SHALL** contain exactly one [1..1] **participation** (CONF:3346-34221) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="CSM" Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34240).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34222).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="MANU" Manufactured (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34239).
 - ii. This role **SHALL** contain exactly one [1..1] **playingEntity** (CONF:3346-34223).
 - 1. This playingEntity **SHALL** contain exactly one [1..1] @classCode="MMAT" Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3346-34237).
 - 2. This playingEntity **SHALL** contain exactly one [1..1] @determinerCode="KIND" Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3346-34238).
 - 3. This playingEntity **SHALL** contain exactly one [1..1] **code** (CONF:3346-34224).
- Note: QDM Attribute: Code
- a. This code **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-34236).
12. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34710) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34713).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34711).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34714).

Note: QDM Attribute: Author date
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34712).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34715).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34716).
13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34214) such that it
- Note: QDM Attribute: Severity
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34226).

- b. **SHALL** contain exactly one [1..1] **Severity Observation (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01) (CONF:3346-34225).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34704) such that it Note: QDM Attribute: Type - The characterization of the reaction (e.g., hypersensitivity, rash, gastroenteric symptoms, etc.)
- a. **SHALL** contain exactly one [1..1] @**typeCode**="REFR" Refers To (CONF:3346-34709).
 - b. **SHALL** contain exactly one [1..1] **observationCriteria** (CONF:3346-34705).
 - i. This observationCriteria **SHALL** contain exactly one [1..1] @**classCode**="OBS" (CONF:3346-34707).
 - ii. This observationCriteria **SHALL** contain exactly one [1..1] @**moodCode**="EVN" (CONF:3346-34708).
 - iii. This observationCriteria **SHALL** contain exactly one [1..1] **code** (CONF:3346-34706).
 - 1. This code **SHALL** contain exactly one [1..1] @**code**="ASSERTION" Assertion (CONF:3346-34698).
 - 2. This code **SHALL** contain exactly one [1..1] @**codeSystem**="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-34699).
 - iv. This observationCriteria **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3346-34700).
 - 1. This value **SHOULD** contain zero or one [0..1] @**valueSet** (CONF:3346-34701).

Figure 6: Allergy Intolerance (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.119" extension="2017-08-01"/>
  </templateId>
  <id root="dd055113-6d52-4b3f-928e-235f8e52c4c0"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4" codeSystemName="ActCode"/>
  <title value="Allergy Intolerance"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" code="106190000" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED-CT">
    <displayName value="Allergy"/>
  </value>
  <participation typeCode="CSM">
    <role classCode="MANU">
      <playingEntity classCode="MMAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingEntity>
    </role>
  </participation>
</observationCriteria>
```

5.4 Assessment, Order

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.131:2018-05-01 (open)]

Table 17: Assessment, Order Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Assessment, Order.

Data elements that meet these criteria using this datatype should document an order by a clinician or appropriately licensed care provider to a patient or an appropriate provider or organization to perform an assessment indicated by the QDM category and its corresponding value set.

Timing: The time the order is authored (i.e., provided to the patient).

NOTE: Orders address the time that the order is authored, a single point in time. Some assessment orders will be addressed as components of a care plan which incorporates the period (or timing) when the order is to be carried out. Measure developers should address feasibility of clinical workflow to capture Assessment, Order when evaluating measures.

Table 18: Assessment, Order Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.131:2018-05-01)					
@classCode	1..1	SHALL		3372-34673	OBS
@moodCode	1..1	SHALL		3372-34674	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3372-34675	
templateId	1..1	SHALL		3372-34654	
item	1..1	SHALL		3372-34655	
@root	1..1	SHALL		3372-34664	2.16.840.1.113883.10.20.28.4.1 31
@extension	1..1	SHALL		3372-34665	2018-05-01
id	1..1	SHALL		3372-34676	
code	1..1	SHALL		3372-34656	
@valueSet	0..1	SHOULD		3372-34666	
title	1..1	SHALL		3372-34677	
statusCode	1..1	SHALL		3372-34657	
@code	1..1	SHALL		3372-34667	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3372-34660	
@typeCode	1..1	SHALL		3372-34672	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34661	
low	1..1	SHALL		3372-34669	
role	1..1	SHALL		3372-34662	
@classCode	1..1	SHALL		3372-34670	ROL
id	0..1	MAY		3372-34671	
outboundRelationship	0..1	MAY		3372-34652	

@typeCode	1..1	SHALL		3372-34663	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-34653	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3372-34673).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-34674).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-34675).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-34654).
 - a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:3372-34655) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.131"** (CONF:3372-34664).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-34665).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-34676).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-34656).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-34666).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-34677).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-34657).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-34667).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34660) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34672).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34661).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34669).
Note: QDM Attribute: Author Time - the time the order is authored (i.e., provided to the patient)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34662).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CONF:3372-34670).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34671).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-34652) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSN"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34663).

- b. **SHALL** contain exactly one [1..1] [Reason](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-34653).

Figure 7: Assessment, Order Example

```
<observationCriteria classCode="OBS" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.131" extension="2018-05-01"/>
  </templateId>
  <id root="904c1629-8a5d-4a33-846e-994a97a3caf0"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Assessment, Order"/>
  <statusCode code="active"/>
</observationCriteria>
```

5.5 Assessment, Performed (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.117:2017-08-01 (open)]

Table 19: Assessment, Performed (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Component (optional) Related To (optional)

This template represents the QDM data type: Assessment, Performed.

Assessment is a resource used to define specific observations that clinicians use to guide treatment of the patient. An assessment can be a single question, or observable entity with an expected response, an organized collection of questions intended to solicit information from patients, providers or other individuals, or a single observable entity that is part of such a collection of questions. The Assessment Performed template represents the completion of an assessment.

Timing: The time the assessment is completed; author time.

Table 20: Assessment, Performed (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.117:2017-08-01)					
@classCode	1..1	SHALL		3346-34142	OBS
@moodCode	1..1	SHALL		3346-34143	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3346-34144	
templateId	1..1	SHALL		3346-34126	
item	1..1	SHALL		3346-34127	
@root	1..1	SHALL		3346-34134	2.16.840.1.113883.10.20.28.4.1 17
@extension	1..1	SHALL		3346-34254	2017-08-01
id	1..1	SHALL		3346-34145	
code	1..1	SHALL		3346-34128	
@valueSet	0..1	SHOULD		3346-34136	
title	1..1	SHALL		3346-34146	
statusCode	1..1	SHALL		3346-34129	
@code	1..1	SHALL		3346-34137	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	0..1	MAY		3346-34147	
methodCode	0..1	MAY		3346-34246	
item	0..1	SHOULD		3346-34247	
@valueSet	0..1	SHOULD		3346-34249	
participation	0..1	MAY		3346-34735	
@typeCode	1..1	SHALL		3346-34738	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34736	
low	1..1	SHALL		3346-34739	

role	1..1	SHALL		3346-34737	
@classCode	1..1	SHALL		3346-34741	ROL
id	0..1	MAY		3346-34740	
outboundRelationship	0..1	MAY		3346-34245	
@typeCode	1..1	SHALL		3346-34250	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-34248	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01
outboundRelationship	0..*	MAY		3346-34608	
@typeCode	1..1	SHALL		3346-34609	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-34610	Component (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.121:2017-05-01
outboundRelationship	0..*	MAY		3346-34732	
@typeCode	1..1	SHALL		3346-34733	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-34734	Related To (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.127:2017-08-01

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3346-34142).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-34143).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3346-34144).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-34126).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-34127) such that it
 - i. This item **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.28.4.117" (CONF:3346-34134).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-34254).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-34145).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-34128).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-34136).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3346-34146).

8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-34129).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-34137).
9. **MAY** contain zero or one [0..1] **value** (CONF:3346-34147).

Note: QDM Attribute: Result
10. **MAY** contain zero or one [0..1] **methodCode** (CONF:3346-34246).

Note: QDM Attribute: Method

 - a. The methodCode, if present, **SHOULD** contain zero or one [0..1] **item** (CONF:3346-34247).
 - i. The item, if present, **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-34249).
11. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34735) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34738).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34736).

Note: QDM Attribute: Author dateTime (The time the assessment is completed)

 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34739).
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34737).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CONF:3346-34741).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34740).
12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34245) such that it

Note: QDM Attribute: Reason

 - a. **SHALL** contain exactly one [1..1] @typeCode="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34250).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-34248).
13. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3346-34608) such that it

Note: QDM Attribute: Components

 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34609).
 - b. **SHALL** contain exactly one [1..1] **Component** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01) (CONF:3346-34610).
14. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3346-34732) such that it

Note: QDM Attribute: Related To

 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34733).

- b. **SHALL** contain exactly one [1..1] **Related To** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01) (CONF:3346-34734).

Figure 8: Assessment, Performed (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.117" extension="2017-08-01"/>
  </templateId>
  <id root="08f25bc3-5eff-49a5-b2ec-f66f1027574c"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Assessment, Performed"/>
  <statusCode code="completed"/>
</observationCriteria>
```

5.6 Assessment, Recommended (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2018-05-01 (open)]

Table 21: Assessment, Recommended (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Assessment, Recommended.

Assessment is a resource used to define specific observations that clinicians use to guide treatment of the patient. An assessment can be a single question, or observable entity with an expected response, an organized collection of questions intended to solicit information from patients, providers or other individuals, or a single observable entity that is part of such a collection of questions. This template represents a recommendation to perform an assessment.

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Timing: The time the recommendation is authored (i.e., provided to the patient).

Table 22: Assessment, Recommended (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2018-05-01)					
@classCode	1..1	SHALL		3372-34165	OBS
@moodCode	1..1	SHALL		3372-34166	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3372-34167	
templateId	1..1	SHALL		3372-34149	
item	1..1	SHALL		3372-34150	
@root	1..1	SHALL		3372-34157	2.16.840.1.113883.10.20.28.4.1 18
@extension	1..1	SHALL		3372-34273	2018-05-01
id	1..1	SHALL		3372-34168	
code	1..1	SHALL		3372-34151	
@valueSet	0..1	SHOULD		3372-34159	
title	1..1	SHALL		3372-34169	
statusCode	1..1	SHALL		3372-34152	
@code	1..1	SHALL		3372-34160	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3372-34270	
@typeCode	1..1	SHALL		3372-34274	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34271	
low	1..1	SHALL		3372-34275	
role	1..1	SHALL		3372-34272	
@classCode	1..1	SHALL		3372-34276	ROL
id	0..1	MAY		3372-34277	
outboundRelationship	0..1	MAY		3372-34264	

@typeCode	1..1	SHALL		3372-34269	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-34267	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3372-34165).
2. **SHALL** contain exactly one [1..1] **@moodCode="INT"** intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-34166).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-34167).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-34149).
 - a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:3372-34150) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.118"** (CONF:3372-34157).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-34273).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-34168).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-34151).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-34159).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-34169).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-34152).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-34160).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34270) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34274).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34271).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34275).
Note: QDM Attribute: Author Time - the time the recommendation is authored (i.e., provided to the patient)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34272).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CONF:3372-34276).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34277).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-34264) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34269).

- b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-34267).

Figure 9: Assessment, Recommended Example

```
<observationCriteria classCode="OBS" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.118" extension="2017-05-01"/>
  </templateId>
  <id root="904c1629-8a5d-4a33-846e-994a97a3caf0"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Assessment, Recommended"/>
  <statusCode code="active"/>
</observationCriteria>
```

5.7 Care Goal (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.7:2017-08-01 (open)]

Table 23: Care Goal (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Related To (optional) Target Outcome (optional)

This template represents the QDM data type: Care Goal.

Care Goal represents a defined target or measure to be achieved in the process of patient care, that is, an expected outcome. A typical goal is expressed as a change in status expected at a defined future time. That change can be an observation represented by other QDM categories (diagnostic tests, laboratory tests, symptoms, etc.) scheduled for some time in the future and with a particular value. A goal can be found in the plan of care (care plan), the structure used by all stakeholders, including the patient, to define the management actions for the various conditions, problems, or issues identified for the target of the plan. This structure, through which the goals and care-planning actions and processes can be organized, planned, communicated, and checked for completion, is represented in the QDM categories as a Record Artifact. A time/date stamp is required. Specifically, a care plan is composed of the following elements:

- Problem, which is managed by other QDM standard categories (condition/diagnosis/problem) and their related data elements.
- Procedure, which is managed by other standard categories and their related data elements. Note that procedures are a continuum of interventions ranging from actions patients can do for themselves to those that can be performed by others (caregivers or clinical professionals), including detailed complex surgical procedures requiring highly trained physicians, nurses, and state-of-the-art facilities.
- Goal, which is what is expected to happen.

- Outcome, which is what happened. An outcome can be shown by other QDM standard categories and their related data elements.

Table 24: Care Goal (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.7:2017-08-01)					
@classCode	1..1	SHALL		3346-27869	OBS
@moodCode	1..1	SHALL		3346-27870	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = GOL
@actionNegationInd	0..0	SHALL NOT		3346-34760	
templateId	1..1	SHALL		3346-27872	
item	1..1	SHALL		3346-28447	
@root	1..1	SHALL		3346-28448	2.16.840.1.113883.10.20.28.4.7
@extension	1..1	SHALL		3346-33051	2017-08-01
id	1..1	SHALL		3346-32479	
code	1..1	SHALL		3346-27873	
@code	1..1	SHALL		3346-27874	ASSERTION
@codeSystem	1..1	SHALL		3346-27875	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
title	1..1	SHALL		3346-32480	
statusCode	1..1	SHALL		3346-32481	
@code	1..1	SHALL		3346-32482	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
effectiveTime	0..1	MAY	IVL_TS	3346-32488	
low	0..1	MAY		3346-32489	
high	0..1	MAY		3346-32490	
value	1..1	SHALL	CD	3346-27876	
@valueSet	0..1	SHOULD		3346-32483	
outboundRelationship	0..*	MAY		3346-33032	
@typeCode	1..1	SHALL		3346-34743	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) =

					REFR
observationCriteria	1..1	SHALL		3346-34744	Related To (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01)
outboundRelationship	0..1	MAY		3346-34742	
@typeCode	1..1	SHALL		3346-34745	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-34746	Target Outcome (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.128:2017-08-01)

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CONF:3346-27869).
2. **SHALL** contain exactly one [1..1] **@moodCode**="GOL" Goal (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-27870).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3346-34760).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-27872).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-28447) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.7" (CONF:3346-28448).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2017-08-01" (CONF:3346-33051).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-32479).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-27873).
 - a. This code **SHALL** contain exactly one [1..1] **@code**="ASSERTION" (CONF:3346-27874).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-27875).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3346-32480).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-32481).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="active" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-32482).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-32488) such that it
 Note: QDM Attribute: Relevant Period (The Relevant Period references the period between Start Time and Stop Time)
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3346-32489).
 Note: Start dateTIme (when the goal is recorded, and therefore should be considered effective)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-32490).
 Note: Stop dateTIme (when the target outcome is expected to be met)
10. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3346-27876).
 Note: QDM Attribute: Code
 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-32483).

11. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3346-33032) such that it
Note: QDM Attribute: Related To

- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34743).
- b. **SHALL** contain exactly one [1..1] Related To (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01) (CONF:3346-34744).

12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34742) such that it
Note: QDM Attribute: Target Outcome

- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34745).
- b. **SHALL** contain exactly one [1..1] Target Outcome (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.128:2017-08-01) (CONF:3346-34746).

Figure 10: Care Goal (V2) Example

```
<observationCriteria classCode="OBS" moodCode="GOL">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.7" extension="2017-08-01"/>
  </templateId>
  <id root="f0a729a3-6fe8-4e79-acee-b4dd16b3e755"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <title value="Care Goal"/>
  <statusCode code="active"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.8 Cause

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.105:2017-05-01 (open)]

Table 25: Cause Contexts

Contained By:	Contains:
<u>Patient Characteristic Expired</u> (optional)	

This template represents the QDM attribute: Cause.

This represents the recorded cause of death.

Table 26: Cause Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.105:2017-05-01)					
@classCode	1..1	SHALL		3335-33456	OBS
@moodCode	1..1	SHALL		3335-33457	EVN
templateId	1..1	SHALL		3335-33453	
item	1..1	SHALL		3335-33454	
@root	1..1	SHALL		3335-33458	2.16.840.1.113883.10.20.28.4.105
@extension	1..1	SHALL		3335-34647	2017-05-01
id	1..1	SHALL		3335-33459	
code	1..1	SHALL		3335-33455	
@code	1..1	SHALL		3335-33460	42752001
@codeSystem	1..1	SHALL		3335-33461	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3335-33463	
value	1..1	SHALL	CD	3335-33462	
@valueSet	0..1	SHOULD		3335-34663	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-33456).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CONF:3335-33457).
3. **SHALL** contain exactly one [1..1] templateId (CONF:3335-33453).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3335-33454) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.105" (CONF:3335-33458).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34647).
4. **SHALL** contain exactly one [1..1] id (CONF:3335-33459).
5. **SHALL** contain exactly one [1..1] code (CONF:3335-33455).
 - a. This code **SHALL** contain exactly one [1..1] @code="42752001" Due to (CONF:3335-33460).

- b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-33461).
- 6. **SHALL** contain exactly one [1..1] **title** (CONF:3335-33463).
- 7. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3335-33462).
 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3335-34663).

Figure 11: Cause Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.105" extension="2017-05-01"/>
  </templateId>
  <id root="302625d2-e41a-4d51-ba11-af0dfc81a11b"/>
  <code code="42752001" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Due to"/>
  </code>
  <title value="Cause"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.9 Communication, Performed

[actCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.132:2018-05-01 (open)]

Table 27: Communication, Performed Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Related To (optional)

This template represents the QDM data type: Communication, Performed

Communication is a conveyance of information from one entity (e.g., person, organization, or device) to another.

Timing:

Relevant Period: The time the communication is sent (start time) to the time the communication is received (end time)

Author dateTime the time the communication is documented (specifically significant for negation rationale, i.e., Communication Not Performed).

Table 28: Communication, Performed Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
actCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.132;2018-05-01)					
@classCode	1..1	SHALL		3372-34706	ACT
@moodCode	1..1	SHALL		3372-34707	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3372-34708	
templateId	1..1	SHALL		3372-34683	
item	1..1	SHALL		3372-34684	
@root	1..1	SHALL		3372-34696	2.16.840.1.113883.10.20.28.4.1 32
@extension	1..1	SHALL		3372-34697	2018-05-01
id	1..1	SHALL		3372-34709	
code	0..1	MAY		3372-34691	
@valueSet	0..1	SHOULD		3372-34705	
title	1..1	SHALL		3372-34710	
statusCode	1..1	SHALL		3372-34690	
@code	1..1	SHALL		3372-34704	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3372-34694	
low	0..1	MAY		3372-34712	
high	0..1	MAY		3372-34713	
participation	0..1	MAY		3372-34714	
@typeCode	1..1	SHALL		3372-34716	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34717	
role	1..1	SHALL		3372-34715	
@classCode	1..1	SHALL		3372-34718	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL

id	0..1	MAY		3372-34719	
participation	0..1	MAY		3372-34720	
@typeCode	1..1	SHALL		3372-34854	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = PRF
role	1..1	SHALL		3372-34721	
@classCode	1..1	SHALL		3372-34855	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ASSIGNED
code	1..1	SHALL		3372-34856	
participation	0..1	MAY		3372-34722	
@typeCode	1..1	SHALL		3372-34857	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = IRCP
role	1..1	SHALL		3372-34853	
code	1..1	SHALL		3372-34858	
participation	0..1	MAY		3372-34865	
@typeCode	1..1	SHALL		3372-34866	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = VIA
modeCode	1..1	SHALL		3372-34867	
role	1..1	SHALL		3372-34868	
@classCode	1..1	SHALL		3372-34870	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ASSIGNED
outboundRelationship	1..1	SHALL		3372-34681	
@typeCode	1..1	SHALL		3372-34695	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-34682	<u>Reason (identifier:</u> urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
outboundRelationship	0..*	MAY		3372-34692	
@typeCode	1..1	SHALL		3372-34711	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3372-34693	<u>Related To (identifier:</u> urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01

1. **SHALL** contain exactly one [1..1] @classCode="ACT" Act (CONF:3372-34706).

2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-34707).
3. **MAY** contain zero or one [0..1] @actionNegationInd (CONF:3372-34708).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] templateId (CONF:3372-34683).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3372-34684) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.132" (CONF:3372-34696).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-34697).
5. **SHALL** contain exactly one [1..1] id (CONF:3372-34709).
6. **MAY** contain zero or one [0..1] code (CONF:3372-34691).
Note: QDM Attribute: Category - The type of message conveyed by a communication (e.g., notification, alert, reminder, instruction, etc.).
- a. The code, if present, **SHOULD** contain zero or one [0..1] @valueSet (CONF:3372-34705).
7. **SHALL** contain exactly one [1..1] title (CONF:3372-34710).
8. **SHALL** contain exactly one [1..1] statusCode (CONF:3372-34690).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-34704).
9. **MAY** contain zero or one [0..1] effectiveTime (CONF:3372-34694) such that it
Note: QDM Attribute: Relevant Period - the time the communication is sent (start time) to the time the communication is received (end time)
 - a. **MAY** contain zero or one [0..1] low (CONF:3372-34712).
Note: StartTime – The time the communication is sent
 - b. **MAY** contain zero or one [0..1] high (CONF:3372-34713).
Note: EndTime – The time the communication is received
10. **MAY** contain zero or one [0..1] participation (CONF:3372-34714) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34716).
 - b. **SHALL** contain exactly one [1..1] time (CONF:3372-34717).
Note: QDM Attribute: Author dateTime
 - c. **SHALL** contain exactly one [1..1] role (CONF:3372-34715).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34718).
 - ii. This role **MAY** contain zero or one [0..1] id (CONF:3372-34719).
11. **MAY** contain zero or one [0..1] participation (CONF:3372-34720) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="PRF" Performer (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34854).
 - b. **SHALL** contain exactly one [1..1] role (CONF:3372-34721).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ASSIGNED" Assigned (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34855).

- ii. This role **SHALL** contain exactly one [1..1] **code** (CONF:3372-34856).
Note: QDM Attribute: Sender - The entity (e.g., person, organization, clinical information system, or device) that is the source of a communication
12. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34722) such that it
- a. **SHALL** contain exactly one [1..1] @**typeCode**="IRCP" Information Recipient (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34857).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34853).
 - i. This role **SHALL** contain exactly one [1..1] **code** (CONF:3372-34858).
Note: QDM Attribute: Recipient - The entity (e.g., person, organization, clinical information system, or device) which is the target of a communication
13. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34865) such that it
- a. **SHALL** contain exactly one [1..1] @**typeCode**="VIA" via (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34866).
 - b. **SHALL** contain exactly one [1..1] **modeCode** (CONF:3372-34867).
Note: QDM Attribute: Medium - A channel used for a communication (e.g., fax, email, etc.)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34868).
 - i. This role **SHALL** contain exactly one [1..1] @**classCode**="ASSIGNED" Assigned (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34870).
14. **SHALL** contain exactly one [1..1] **outboundRelationship** (CONF:3372-34681) such that it
Note: QDM Attribute: Code - The reason for the communication
- a. **SHALL** contain exactly one [1..1] @**typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34695).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-34682).
15. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3372-34692) such that it
Note: QDM Attribute: Related To
- a. **SHALL** contain exactly one [1..1] @**typeCode**="REFR" Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34711).
 - b. **SHALL** contain exactly one [1..1] **Related To** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01) (CONF:3372-34693).

Figure 12: Communication, Performed Example

```
<actCriteria classCode="ACT" moodCode="EVN">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.132" extension="2018-05-01"/>
    </templateId>
    <id root="6bf11fc2-78f9-4517-bafa-7988b350e188"/>
    <title value="Communication, Performed"/>
    <statusCode code="completed"/>
    <outboundRelationship>
        <observationCriteria classCode="OBS" moodCode="EVN">
            <templateId>
                <item root="2.16.840.1.113883.10.20.28.4.88" extension="2017-05-01"/>
            </templateId>
            <id root="05c07740-1f8d-417e-a9f2-fc769b1d342d"/>
            <code code="410666004" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
                <displayName value="Reason"/>
            </code>
            <title value="Reason"/>
            <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
        </observationCriteria>
    </outboundRelationship>
</actCriteria>
```

5.10 Component

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01 (open)]

Table 29: Component Contexts

Contained By:	Contains:
Assessment, Performed (V2) (optional) Diagnostic Study, Performed (V2) (optional) Physical Exam, Performed (V2) (optional) Procedure, Performed (V3) (optional)	

This template represents the QDM attribute: Components.

Components represent elements included or documented as part of evaluations or test panels. Examples include: specific questions included in assessments, tests included in a laboratory test panel, observations included in a cardiac exam during a physical examination.

Table 30: Component Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01)					
@classCode	1..1	SHALL		3335-34576	OBS
@moodCode	1..1	SHALL		3335-34577	EVN
templateId	1..1	SHALL		3335-34570	
item	1..1	SHALL		3335-34571	
@root	1..1	SHALL		3335-34573	2.16.840.1.113883.10.20.28.4.121
@extension	1..1	SHALL		3335-34580	2017-05-01
id	1..1	SHALL		3335-34578	
code	1..1	SHALL		3335-34572	
title	1..1	SHALL		3335-34607	
value	1..1	SHALL		3335-34579	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3335-34576).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CONF:3335-34577).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-34570).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-34571) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.121"** (CONF:3335-34573).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-34580).
4. **SHALL** contain exactly one [1..1] **id** (CONF:3335-34578).
5. **SHALL** contain exactly one [1..1] **code** (CONF:3335-34572).
Note: Code
6. **SHALL** contain exactly one [1..1] **title** (CONF:3335-34607).
7. **SHALL** contain exactly one [1..1] **value** (CONF:3335-34579).
Note: Result

Figure 13: Component Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.121" extension="2017-05-01"/>
  </templateId>
  <id root="dccce626-74a2-41ef-9add-60070b6bb936"/>
  <code code="32412-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="5 minute Apgar Heart rate"/>
  </code>
  <title value="Component"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.10.1 Laboratory Test Component

[observationCriteria: identifier
urn:h17ii:2.16.840.1.113883.10.20.28.4.126:2017-05-01 (open)]

Table 31: Laboratory Test Component Contexts

Contained By:	Contains:
Laboratory Test, Performed (V2) (optional)	Laboratory Test Reference Range

This template represents the QDM attribute: Component (for Laboratory Test, Performed).

Table 32: Laboratory Test Component Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.126:2017-05-01)					
@classCode	1..1	SHALL		3335-34588	OBS
@moodCode	1..1	SHALL		3335-34589	EVN
templateId	1..1	SHALL		3335-34581	
item	1..1	SHALL		3335-34582	
@root	1..1	SHALL		3335-34584	2.16.840.1.113883.10.20.28.4.126
@extension	1..1	SHALL		3335-34585	2017-05-01
outboundRelationship	0..1	MAY		3335-34604	
@typeCode	1..1	SHALL		3335-34605	REFR
observationCriteria	1..1	SHALL		3335-34616	Laboratory Test Reference Range (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.124:2017-05-01)

1. Conforms to [Component](#) template (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01).
2. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-34588).
3. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CONF:3335-34589).
4. **SHALL** contain exactly one [1..1] templateId (CONF:3335-34581).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3335-34582) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.126" (CONF:3335-34584).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34585).
5. **MAY** contain zero or one [0..1] outboundRelationship (CONF:3335-34604) such that it Note: Reference Range
 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CONF:3335-34605).
 - b. **SHALL** contain exactly one [1..1] [Laboratory Test Reference Range](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.124:2017-05-01) (CONF:3335-34616).

Figure 14: Laboratory Test Component Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.121" extension="2017-05-01"/>
        <item root="2.16.840.1.113883.10.20.28.4.126" extension="2017-05-01"/>
    </templateId>
    <id root="edd94e15-dc95-49d6-8a65-74cb2b87c93b"/>
    <code code="2339-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
        <displayName value="Glucose [Mass/?volume] in Blood"/>
    </code>
    <title value="Cause"/>
    <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.11 Device, Applied (V2)

[procedureCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2018-05-01 (open)]

Table 33: Device, Applied (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Device, Applied.

This represents the application of an instrument, apparatus, implement, machine, contrivance, implant, in-vitro reagent, or other similar or related article, including a component part or accessory, intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease and that is not dependent on being metabolized to achieve any of its primary intended purposes.

Timing: The Relevant Period addresses: startTime – When the device is inserted or first used; stopTime – when the device is removed or last used.

Table 34: Device, Applied (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
procedureCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2018-05-01)					
@classCode	1..1	SHALL		3372-31302	PROC
@moodCode	1..1	SHALL		3372-31303	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3372-31304	
templateId	1..1	SHALL		3372-31305	
item	1..1	SHALL		3372-31306	
@root	1..1	SHALL		3372-31307	2.16.840.1.113883.10.20.28.4.1 3
@extension	1..1	SHALL		3372-33361	2018-05-01
id	1..1	SHALL		3372-31308	
code	1..1	SHALL		3372-31517	
@code	1..1	SHALL		3372-33062	360030002
@codeSystem	1..1	SHALL		3372-33063	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3372-31309	
statusCode	1..1	SHALL		3372-31310	
@code	1..1	SHALL		3372-31311	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3372-31312	
low	0..1	MAY		3372-31313	
high	0..1	MAY		3372-31314	
targetSiteCode	0..1	MAY		3372-31485	
item	1..1	SHALL		3372-33060	
@valueSet	0..1	SHOULD		3372-33061	
participation	1..1	SHALL		3372-31315	

@typeCode	1..1	SHALL		3372-31316	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = DEV
role	1..1	SHALL		3372-31317	
@classCode	1..1	SHALL		3372-31318	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = MANU
playingDevice	1..1	SHALL		3372-31319	
@classCode	1..1	SHALL		3372-31320	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = DEV
@determinerCode	1..1	SHALL		3372-31321	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3372-31322	
@valueSet	0..1	SHOULD		3372-31323	
participation	1..1	SHALL		3372-34503	
@typeCode	1..1	SHALL		3372-34506	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34504	
low	1..1	SHALL		3372-34507	
role	1..1	SHALL		3372-34505	
@classCode	1..1	SHALL		3372-34508	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34509	
outboundRelationship	0..1	MAY		3372-31330	
@typeCode	1..1	SHALL		3372-31331	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-31332	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01

1. **SHALL** contain exactly one [1..1] **@classCode="PROC"** Procedure (CONF:3372-31302).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-31303).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-31304).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-31305).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-31306) such that it

- i. This item **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.28.4.13"` (CONF:3372-31307).
 - ii. This item **SHALL** contain exactly one [1..1] `@extension="2018-05-01"` (CONF:3372-33361).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-31308).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-31517).
- a. This code **SHALL** contain exactly one [1..1] `@code="360030002"` Application of Device (CONF:3372-33062).
 - b. This code **SHALL** contain exactly one [1..1] `@codeSystem="2.16.840.1.113883.6.96"` (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3372-33063).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-31309).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-31310).
- a. This statusCode **SHALL** contain exactly one [1..1] `@code="completed"` Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-31311).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-31312) such that it
- Note: QDM Attribute: Relevant Period
- a. **MAY** contain zero or one [0..1] **low** (CONF:3372-31313).
Note: startTime (When the device is inserted or first used)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3372-31314).
Note: stopTime (When the device is removed or last used)
10. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:3372-31485).
Note: QDM Attribute: Anatomical Location Site
- a. The targetSiteCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3372-33060).
 - i. The item, if present, **SHOULD** contain zero or one [0..1] `@valueSet` (CONF:3372-33061).
11. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-31315) such that it
- a. **SHALL** contain exactly one [1..1] `@typeCode="DEV"` Device (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-31316).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-31317).
 - i. This role **SHALL** contain exactly one [1..1] `@classCode="MANU"` Manufactured Product (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-31318).
 - ii. This role **SHALL** contain exactly one [1..1] **playingDevice** (CONF:3372-31319).
 - 1. This playingDevice **SHALL** contain exactly one [1..1] `@classCode="DEV"` Device (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-31320).
 - 2. This playingDevice **SHALL** contain exactly one [1..1] `@determinerCode="KIND"` Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-31321).

3. This playingDevice **SHALL** contain exactly one [1..1] **code** (CONF:3372-31322).
 Note: QDM Attribute: Code
- a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31323).
12. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-34503) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34506).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34504).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34507).
 Note: QDM Attribute: Author dateTime
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34505).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34508).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34509).
13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31330) such that it
 Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-31331).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-31332).

Figure 15: Device, Applied (V2) Example

```
<procedureCriteria classCode="PROC" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.13" extension="2018-05-01"/>
  </templateId>
  <id root="0dd19511-ce93-4490-9b9a-8cf3d967cf94"/>
  <code code="360030002" codeSystem="2.16.840.1.113883.6.96">
    <displayName value="Application of Device"/>
  </code>
  <title value="Device, Applied"/>
  <statusCode code="completed"/>
  <participation typeCode="DEV">
    <role classCode="MANU">
      <playingDevice classCode="DEV" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingDevice>
    </role>
  </participation>
</procedureCriteria>
```

5.12 Device, Order

[supplyCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.15:2017-05-01 (open)]

Table 35: Device, Order Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Device, Order.

Device represents an order for an instrument, apparatus, implement, machine, contrivance, implant, in-vitro reagent, or other similar or related article, including a component part or accessory, intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease and that is not dependent on being metabolized to achieve any of its primary intended purposes.

Timing: The time the order is signed; author time

Table 36: Device, Order Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
supplyCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.15:2017-05-01)					
@classCode	1..1	SHALL		3335-29840	SPLY
@moodCode	1..1	SHALL		3335-29841	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3335-31002	
templateId	1..1	SHALL		3335-29842	
item	1..1	SHALL		3335-29843	
@root	1..1	SHALL		3335-29844	2.16.840.1.113883.10.20.28.4.1 5
@extension	1..1	SHALL		3335-33642	2017-05-01
id	1..1	SHALL		3335-29845	
title	1..1	SHALL		3335-29846	
statusCode	1..1	SHALL		3335-31003	
@code	1..1	SHALL		3335-31004	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	1..1	SHALL		3335-29847	
@typeCode	1..1	SHALL		3335-29848	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = DEV
role	1..1	SHALL		3335-29849	
@classCode	1..1	SHALL		3335-29850	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = MANU
playingDevice	1..1	SHALL		3335-29851	
@classCode	1..1	SHALL		3335-29852	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = DEV
@determinerCode	1..1	SHALL		3335-29853	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3335-29854	
@valueSet	0..1	SHOULD		3335-29855	
participation	0..1	MAY		3335-33475	

@typeCode	1..1	SHALL		3335-33477	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3335-33476	
low	1..1	SHALL		3335-33478	
role	1..1	SHALL		3335-33569	
@classCode	1..1	SHALL		3335-33570	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3335-33571	
outboundRelationship	0..1	MAY		3335-29888	
@typeCode	1..1	SHALL		3335-29892	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3335-29889	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01

1. **SHALL** contain exactly one [1..1] **@classCode="SPLY"** Supply (CONF:3335-29840).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-29841).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3335-31002).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-29842).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-29843) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.15"** (CONF:3335-29844).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-33642).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-29845).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3335-29846).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31003).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31004).
8. **SHALL** contain exactly one [1..1] **participation** (CONF:3335-29847) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="DEV"** Device (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-29848).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3335-29849).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="MANU"** Manufactured Product (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-29850).

- ii. This role **SHALL** contain exactly one [1..1] **playingDevice** (CONF:3335-29851).
 - 1. This playingDevice **SHALL** contain exactly one [1..1] **@classCode="DEV"** Device (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3335-29852).
 - 2. This playingDevice **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3335-29853).
 - 3. This playingDevice **SHALL** contain exactly one [1..1] **code** (CONF:3335-29854).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-29855).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3335-33475) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-33477).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3335-33476).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3335-33478).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3335-33569).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-33570).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3335-33571).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-29888) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-29892).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3335-29889).

Figure 16: Device, Order Example

```
<supplyCriteria classCode="SPLY" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.15" extension="2017-05-01"/>
  </templateId>
  <id root="5ab17ed3-166c-4265-9c61-d254e30c8e83"/>
  <title value="Device, Order"/>
  <statusCode code="active"/>
  <participation typeCode="DEV">
    <role classCode="MANU">
      <playingDevice classCode="DEV" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingDevice>
    </role>
  </participation>
</supplyCriteria>
```

5.13 Device, Recommended

[supplyCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.16:2017-05-01 (open)]

Table 37: Device, Recommended Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Device, Recommended.

Device represents a recommendation for an instrument, apparatus, implement, machine, contrivance, implant, in-vitro reagent, or other similar or related article, including a component part or accessory, intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease and that is not dependent on being metabolized to achieve any of its primary intended purposes.

Timing: The time the recommendation is authored (i.e., provided to the patient).

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Table 38: Device, Recommended Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
supplyCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.16:2017-05-01)					
@classCode	1..1	SHALL		3335-31708	SPLY
@moodCode	1..1	SHALL		3335-31709	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3335-31710	
templateId	1..1	SHALL		3335-31711	
item	1..1	SHALL		3335-31712	
@root	1..1	SHALL		3335-31713	2.16.840.1.113883.10.20.28.4.1 6
@extension	1..1	SHALL		3335-33699	2017-05-01
id	1..1	SHALL		3335-31714	
title	1..1	SHALL		3335-31715	
statusCode	1..1	SHALL		3335-31716	
@code	1..1	SHALL		3335-31717	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	1..1	SHALL		3335-31721	
@typeCode	1..1	SHALL		3335-31722	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = DEV
role	1..1	SHALL		3335-31723	
@classCode	1..1	SHALL		3335-31724	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = MANU
playingDevice	1..1	SHALL		3335-31725	
@classCode	1..1	SHALL		3335-31726	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = DEV
@determinerCode	1..1	SHALL		3335-31727	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3335-31728	
@valueSet	0..1	SHOULD		3335-31729	
participation	0..1	MAY		3335-34322	

@typeCode	1..1	SHALL		3335-34325	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3335-34323	
low	1..1	SHALL		3335-34326	
role	1..1	SHALL		3335-34324	
@classCode	1..1	SHALL		3335-34327	ROL
id	0..1	MAY		3335-34328	
outboundRelationship	0..1	MAY		3335-31736	
@typeCode	1..1	SHALL		3335-31737	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3335-31738	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01

1. **SHALL** contain exactly one [1..1] **@classCode="SPLY"** Supply (CONF:3335-31708).
2. **SHALL** contain exactly one [1..1] **@moodCode="INT"** Intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-31709).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3335-31710).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-31711).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-31712) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.16"** (CONF:3335-31713).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-33699).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-31714).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3335-31715).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31716).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31717).
8. **SHALL** contain exactly one [1..1] **participation** (CONF:3335-31721) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="DEV"** Device (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-31722).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3335-31723).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="MANU"** Manufactured Product (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-31724).

- ii. This role **SHALL** contain exactly one [1..1] **playingDevice** (CONF:3335-31725).
 - 1. This playingDevice **SHALL** contain exactly one [1..1] **@classCode="DEV"** Device (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3335-31726).
 - 2. This playingDevice **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3335-31727).
 - 3. This playingDevice **SHALL** contain exactly one [1..1] **code** (CONF:3335-31728).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-31729).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3335-34322) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-34325).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3335-34323).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3335-34326).
Note: QDM Attribute: Author dateTime (The time the recommendation is authored (i.e., provided to the patient))
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3335-34324).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CONF:3335-34327).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3335-34328).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-31736) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-31737).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3335-31738).

Figure 17: Device, Recommended Example

```
<supplyCriteria classCode="SPLY" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.16" extension="2017-05-01"/>
  </templateId>
  <id root="5ab17ed3-166c-426d-9c61-d254e30c9e87"/>
  <title value="Device, Recommended"/>
  <statusCode code="active"/>
  <participation typeCode="DEV">
    <role classCode="MANU">
      <playingDevice classCode="DEV" determinerCode="KIND">
        <code valueSet="{{$QDMElementValueSetOID}}"/>
      </playingDevice>
    </role>
  </participation>
</supplyCriteria>
```

5.14 Diagnosis (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01 (open)]

Table 39: Diagnosis (V2) Contexts

Contained By:	Contains:
Encounter, Performed (V2) (optional) Data Criteria Section (V3) (optional)	Severity Observation (V2) (optional)

Condition/Diagnosis/Problem represents a practitioner's identification of a patient's disease, illness, injury, or condition. This category contains a single datatype to represent all of these concepts: Diagnosis. A practitioner determines the diagnosis by means of examination, diagnostic test results, patient history, and/or family history. Diagnoses are usually considered unfavorable, but may also represent neutral or favorable conditions that affect a patient's plan of care (e.g., pregnancy).

The QDM does not prescribe the source of diagnosis data in the EHR. Diagnoses may be found in a patient's problem list, encounter diagnosis list, claims data, or other sources within the EHR. The preferred terminology for diagnoses is SNOMEDCT, but diagnoses may also be encoded using ICD9/10.

The Diagnosis datatype should not be used for differential diagnoses or rule out diagnoses (neither of which are currently supported by the QDM).

The onset datetime corresponds to the implicit start datetime of the datatype and the abatement datetime corresponds to the implicit stop datetime of the datatype. If the abatement datetime is null, then the diagnosis is considered to still be active. When this datatype is used with timing relationships, the criterion is looking for an active diagnosis for the time frame indicated by the timing relationships.

Timing: The Prevalence Period references the time from the onset date to the abatement date.

Table 40: Diagnosis (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01)					
@classCode	1..1	SHALL		3346-33768	OBS
@moodCode	1..1	SHALL		3346-33769	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3346-34702	
templateId	1..1	SHALL		3346-33770	
item	1..1	SHALL		3346-33771	
@root	1..1	SHALL		3346-33776	2.16.840.1.113883.10.20.28.4.1 10
@extension	1..1	SHALL		3346-34321	2017-08-01
id	1..1	SHALL		3346-33777	
code	1..1	SHALL		3346-33772	
@code	1..1	SHALL		3346-33778	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 282291009
@codeSystem	1..1	SHALL		3346-33779	2.16.840.1.113883.6.96
title	1..1	SHALL		3346-33780	
statusCode	1..1	SHALL		3346-33773	
@code	1..1	SHALL		3346-33781	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-33774	
low	0..1	MAY		3346-33782	
high	0..1	MAY		3346-33783	
value	1..1	SHALL	CD	3346-33775	
@valueSet	0..1	SHOULD		3346-33784	
targetSiteCode	0..1	MAY		3346-33785	
item	0..*	SHOULD		3346-33786	

@valueSet	0..1	SHOULD		3346-33788	
outboundRelationship	0..1	MAY		3346-33787	
@typeCode	1..1	SHALL		3346-33789	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REF_R
observationCriteria	1..1	SHALL		3346-33790	Severity Observation (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3346-33768).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-33769).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3346-34702).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-33770).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-33771) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.110"** (CONF:3346-33776).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-34321).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-33777).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-33772).
 - a. This code **SHALL** contain exactly one [1..1] **@code="282291009"** Diagnosis (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-33778).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.6.96"** (SNOMED CT) (CONF:3346-33779).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3346-33780).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-33773).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-33781).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-33774) such that it

Note: QDM Attribute: Prevalence Period (The Prevalence Period references the time from the onset date to the abatement date)

 - a. **MAY** contain zero or one [0..1] **low** (CONF:3346-33782).

Note: Onset dateTime
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-33783).

Note: Abatement dateTime
10. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:3346-33775).
 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-33784).
11. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:3346-33785).

Note: QDM attribute: Anatomical Location Site

- a. The targetSiteCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3346-33786).
 - i. The item, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-33788).
12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-33787) such that it Note: QDM Attribute: Severity
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-33789).
 - b. **SHALL** contain exactly one [1..1] **Severity Observation (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01) (CONF:3346-33790).

Figure 18: Diagnosis (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.110" extension="2017-08-01"/>
  </templateId>
  <id root="9e4e810d-3c3e-461e-86f8-6fe7a0b1ca2b"/>
  <code code="282291009" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Diagnosis"/>
  </code>
  <title value="Diagnosis"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.15 Diagnostic Study, Order (V3)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2018-05-01 (open)]

Table 41: Diagnostic Study, Order (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Diagnostic Study, Order.

Diagnostic Study represents any kind of medical test performed as a specific test or series of steps to aid in diagnosing or detecting disease (e.g., to establish a diagnosis, measure the progress or recovery from disease, confirm that a person is free from disease). The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.

Diagnostic Study, Order represents that a diagnostic study has been ordered.

Timing: The time the order is signed; author time.

Table 42: Diagnostic Study, Order (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2018-05-01)					
@classCode	1..1	SHALL		3372-34723	OBS
@moodCode	1..1	SHALL		3372-30106	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3372-30485	
templateId	1..1	SHALL		3372-30108	
item	1..1	SHALL		3372-30109	
@root	1..1	SHALL		3372-30117	2.16.840.1.113883.10.20.28.4.2 2
@extension	1..1	SHALL		3372-33643	2018-05-01
id	1..1	SHALL		3372-30110	
code	1..1	SHALL		3372-30111	
@valueSet	0..1	SHOULD		3372-30126	
title	1..1	SHALL		3372-30112	
statusCode	1..1	SHALL		3372-30232	
@code	1..1	SHALL		3372-30233	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3372-33480	
@typeCode	1..1	SHALL		3372-33482	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-33481	
low	1..1	SHALL		3372-33483	
role	1..1	SHALL		3372-33572	
@classCode	1..1	SHALL		3372-33573	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	1..1	SHALL		3372-33574	
outboundRelationship	0..1	MAY		3372-30124	

@typeCode	1..1	SHALL		3372-30912	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-30125	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3372-34723).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:3372-30106).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-30485).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-30108).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-30109) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.22"** (CONF:3372-30117).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33643).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-30110).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-30111).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-30126).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-30112).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-30232).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-30233).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3372-33480) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-33482).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-33481).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-33483).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-33572).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-33573).
 - ii. This role **SHALL** contain exactly one [1..1] **id** (CONF:3372-33574).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-30124) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-30912).

- b. **SHALL** contain exactly one [1..1] [Reason](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-30125).

Figure 19: Diagnostic Study, Order (V3) Example

```
<observationCriteria classCode="OBS" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.22" extension="2018-05-01"/>
  </templateId>
  <id root="628e7169-c8eb-448e-9d74-a59dc02844e9" />
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Diagnostic Study, Order"/>
  <statusCode code="active"/>
</observationCriteria>
```

5.16 Diagnostic Study, Performed (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.23:2017-08-01 (open)]

Table 43: Diagnostic Study, Performed (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Facility Location (optional) Reason (optional) Component (optional) Result (V2) (optional) Status (V2) (optional)

This template represents the QDM data type: Diagnostic Study, Performed.

Diagnostic Study represents any kind of medical test performed as a specific test or series of steps to aid in diagnosing or detecting disease (e.g., to establish a diagnosis, measure the progress or recovery from disease, confirm that a person is free from disease). The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.

The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.

Timing: The Relevant Period addresses: startTime – when the diagnostic study is initiated; stopTime – when the diagnostic study is completed.

Examples:

- Initiation of a treadmill stress test to the time the treadmill stress test has completed
- Initiation of the ultrasound study until completion of the ultrasound study

QDM Attributes: Result and Result dateTime are represented using the Result (V2) template.

Table 44: Diagnostic Study, Performed (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.23:2017-08-01)					
@classCode	1..1	SHALL		3346-30775	OBS
@moodCode	1..1	SHALL		3346-30776	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3346-30777	
templateId	1..1	SHALL		3346-30778	
item	1..1	SHALL		3346-30779	
@root	1..1	SHALL		3346-30780	2.16.840.1.113883.10.20.28.4.2 3
@extension	1..1	SHALL		3346-33605	2017-08-01
id	1..1	SHALL		3346-30781	
code	1..1	SHALL		3346-30782	
@valueSet	0..1	SHOULD		3346-30783	
title	1..1	SHALL		3346-30784	
statusCode	1..1	SHALL		3346-30785	
@code	1..1	SHALL		3346-30786	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-30787	
low	0..1	MAY		3346-30788	
high	0..1	MAY		3346-30789	
value	0..0	SHALL NOT		3346-34764	
methodCode	0..1	MAY		3346-30790	
item	0..1	SHOULD		3346-30791	
@valueSet	0..1	SHOULD		3346-30917	
participation	0..1	MAY		3346-30792	

@typeCode	1..1	SHALL		3346-30993	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = LOC
role	1..1	SHALL		3346-30992	Facility Location (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01)
participation	0..1	MAY		3346-34510	
@typeCode	1..1	SHALL		3346-34513	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34511	
low	1..1	SHALL		3346-34514	
role	1..1	SHALL		3346-34512	
@classCode	1..1	SHALL		3346-34515	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34516	
outboundRelationship	0..1	MAY		3346-30799	
@typeCode	1..1	SHALL		3346-30921	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-30800	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)
outboundRelationship	0..1	MAY		3346-34763	
@typeCode	1..1	SHALL		3346-34765	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = VALUE
observationCriteria	1..1	SHALL		3346-34766	Result (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01)
outboundRelationship	0..1	MAY		3346-33365	
@typeCode	1..1	SHALL		3346-34614	REFR
observationCriteria	1..1	SHALL		3346-33366	Status (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01)
outboundRelationship	0..*	MAY		3346-34611	
@typeCode	1..1	SHALL		3346-34612	REFR
observationCriteria	1..1	SHALL		3346-34613	Component (identifier: urn:hl7ii:2.16.840.1.113883.10.

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3346-30775).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:3346-30776).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3346-30777).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-30778).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-30779) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.23"** (CONF:3346-30780).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-33605).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-30781).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-30782).
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-30783).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3346-30784).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-30785).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-30786).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-30787) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3346-30788).
Note: startTime (When the diagnostic study is initiated)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-30789).
Note: stopTime (When the diagnostic study is completed)
10. **SHALL NOT** contain [0..0] **value** (CONF:3346-34764).
Note: Use the Result (V2) template to represent Result
11. **MAY** contain zero or one [0..1] **methodCode** (CONF:3346-30790).
Note: QDM Attribute: Method
 - a. The methodCode, if present, **SHOULD** contain zero or one [0..1] **item** (CONF:3346-30791).
 - i. The item, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-30917).
12. **MAY** contain zero or one [0..1] **participation** (CONF:3346-30792) such that it
Note: QDM Attribute: Facility Location
 - a. **SHALL** contain exactly one [1..1] **@typeCode="LOC"** Location (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30993).
 - b. **SHALL** contain exactly one [1..1] **Facility Location** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01) (CONF:3346-30992).
13. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34510) such that it
Note: QDM Attribute: Facility Location

- a. **SHALL** contain exactly one [1..1] @**typeCode**="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34513).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34511).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34514).
Note: QDM Attribute: Author Time
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34512).
 - i. This role **SHALL** contain exactly one [1..1] @**classCode**="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34515).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34516).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-30799) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] @**typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-30921).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-30800).
15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34763) such that it
Note: QDM Attribute: Result, QDM Attribute: Result dateTime
- a. **SHALL** contain exactly one [1..1] @**typeCode**="VALUE" has value (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34765).
 - b. **SHALL** contain exactly one [1..1] **Result (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01) (CONF:3346-34766).
16. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-33365) such that it
Note: QDM Attribute: Status
- a. **SHALL** contain exactly one [1..1] @**typeCode**="REFR" Refers To (CONF:3346-34614).
 - b. **SHALL** contain exactly one [1..1] **Status (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01) (CONF:3346-33366).
17. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3346-34611) such that it
Note: QDM Attribute: Component
- a. **SHALL** contain exactly one [1..1] @**typeCode**="REFR" Refers To (CONF:3346-34612).
 - b. **SHALL** contain exactly one [1..1] **Component** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01) (CONF:3346-34613).

Figure 20: Diagnostic Study, Performed (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.23" extension="2017-08-01"/>
  </templateId>
  <id root="f584ead4-808b-43c2-93e3-b8606e156233"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Diagnostic Study, Performed"/>
  <statusCode code="completed"/>
</observationCriteria>
```

5.17 Diagnostic Study, Recommended (V3)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2018-05-01 (open)]

Table 45: Diagnostic Study, Recommended (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Diagnostic Study, Recommended.

Diagnostic Study represents any kind of medical test performed as a specific test or series of steps to aid in diagnosing or detecting disease (e.g., to establish a diagnosis, measure the progress or recovery from disease, confirm that a person is free from disease). The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.

Timing: The time the order is signed; author time.

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Table 46: Diagnostic Study, Recommended (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2018-05-01)					
@classCode	1..1	SHALL		3372-30572	OBS
@moodCode	1..1	SHALL		3372-30573	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3372-30574	
templateId	1..1	SHALL		3372-30575	
item	1..1	SHALL		3372-30576	
@root	1..1	SHALL		3372-30577	2.16.840.1.113883.10.20.28.4.2 4
@extension	1..1	SHALL		3372-33751	2018-05-01
id	1..1	SHALL		3372-30578	
code	1..1	SHALL		3372-30579	
@valueSet	0..1	SHOULD		3372-30580	
title	1..1	SHALL		3372-30581	
statusCode	1..1	SHALL		3372-30582	
@code	1..1	SHALL		3372-30583	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3372-34329	
@typeCode	1..1	SHALL		3372-34331	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34330	
low	1..1	SHALL		3372-34332	
role	1..1	SHALL		3372-34333	
@classCode	1..1	SHALL		3372-34334	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34335	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3372-30572).

2. **SHALL** contain exactly one [1..1] @moodCode="INT" Intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:3372-30573).
3. **MAY** contain zero or one [0..1] @actionNegationInd (CONF:3372-30574).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-30575).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-30576) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.24" (CONF:3372-30577).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33751).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-30578).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-30579).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] @valueSet (CONF:3372-30580).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-30581).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-30582).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="active" Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-30583).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34329) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34331).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34330).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34332).
Note: QDM Attribute: Author dateTime (The time the recommendation is authored)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34333).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34334).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34335).

Figure 21: Diagnostic Study, Recommended (V3) Example

```
<observationCriteria classCode="OBS" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.24" extension="2018-05-01"/>
  </templateId>
  <id root="f584ead4-808b-43c2-93e3-b8606e156233"/>
  <code valueSet ="{$QDMElementValueSetOID}"/>
  <title value="Diagnostic Study, Recommended"/>
  <statusCode code="active"/>
</observationCriteria>
```

5.18 Dosage

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.125:2017-05-01 (open)]

Table 47: Dosage Contexts

Contained By:	Contains:
Medication, Dispensed (V2) (optional)	

This template represents the QDM attribute: Dosage.

Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Table 48: Dosage Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.125:2017-05-01)					
@classCode	1..1	SHALL		3335-34423	OBS
@moodCode	1..1	SHALL		3335-34424	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3335-34420	
item	1..1	SHALL		3335-34421	
@root	1..1	SHALL		3335-34425	2.16.840.1.113883.10.20.28.4.125
@extension	1..1	SHALL		3335-34650	2017-05-01
id	1..1	SHALL		3335-34426	
code	1..1	SHALL		3335-34422	
@code	1..1	SHALL		3335-34427	260911001
@codeSystem	1..1	SHALL		3335-34428	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3335-34429	
value	1..1	SHALL	PQ	3335-34430	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-34423).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-34424).

3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-34420).
 - a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:3335-34421) such that it
 - i. This item **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.28.4.125" (CONF:3335-34425).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34650).
4. **SHALL** contain exactly one [1..1] **id** (CONF:3335-34426).
5. **SHALL** contain exactly one [1..1] **code** (CONF:3335-34422).
 - a. This code **SHALL** contain exactly one [1..1] @code="260911001" Dosage (CONF:3335-34427).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-34428).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3335-34429).
7. **SHALL** contain exactly one [1..1] **value** with @xsi:type="PQ" (CONF:3335-34430).

Figure 22: Dosage Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.125" extension="2017-05-01"/>
  </templateId>
  <id root="a77fb848-5778-4948-a3df-cf9ae40997c4"/>
  <code code="260911001" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Dosage"/>
  </code>
  <title value="Dosage"/>
  <value xsi:type="PQ" value="200" unit="mg"/>
</observationCriteria>
```

5.19 Encounter, Order

[EncounterCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.27:2017-05-01 (open)]

Table 49: Encounter, Order Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Facility Location (optional) Reason (optional)

This template represents the QDM data type: Encounter, Order.

This template describes an order for an encounter. It describes the ordered interactions between the patient and clinicians. Interactions include in-person encounters, telephone conversations, and email exchanges.

Timing: The time the order is signed; author time.

Table 50: Encounter, Order Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
EncounterCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.27:2017-05-01)					
@classCode	1..1	SHALL		3335-30860	ENC
@moodCode	1..1	SHALL		3335-30861	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3335-30862	
templateId	1..1	SHALL		3335-30863	
item	1..1	SHALL		3335-30864	
@root	1..1	SHALL		3335-30865	2.16.840.1.113883.10.20.28.4.2 7
@extension	1..1	SHALL		3335-33645	2017-05-01
id	1..1	SHALL		3335-30866	
code	1..1	SHALL		3335-30867	
@valueSet	0..1	SHOULD		3335-30868	
title	1..1	SHALL		3335-30869	
statusCode	1..1	SHALL		3335-30870	
@code	1..1	SHALL		3335-30871	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3335-30875	
@typeCode	1..1	SHALL		3335-30876	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = LOC
role	1..1	SHALL		3335-30877	Facility Location (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.92:2017-05-01
participation	0..1	MAY		3335-33485	
@typeCode	1..1	SHALL		3335-33487	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3335-33486	
low	1..1	SHALL		3335-33488	
role	1..1	SHALL		3335-33575	

@classCode	1..1	SHALL		3335-33576	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3335-33577	
outboundRelationship	0..1	MAY		3335-30878	
@typeCode	1..1	SHALL		3335-30879	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3335-30880	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode**="ENC" Encounter (CONF:3335-30860).
2. **SHALL** contain exactly one [1..1] **@moodCode**="RQO" Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-30861).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3335-30862).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-30863).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-30864) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.27" (CONF:3335-30865).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2017-05-01" (CONF:3335-33645).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-30866).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-30867).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-30868).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-30869).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-30870).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="active" Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-30871).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3335-30875) such that it
Note: QDM Attribute: Facility Location
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="LOC" Location (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3335-30876).
 - b. **SHALL** contain exactly one [1..1] **Facility Location** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01) (CONF:3335-30877).
10. **MAY** contain zero or one [0..1] **participation** (CONF:3335-33485) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-33487).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3335-33486).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3335-33488).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3335-33575).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-33576).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3335-33577).
11. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-30878) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-30879).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3335-30880).

Figure 23: Encounter, Order Example

```
<encounterCriteria classCode="ENC" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.27" extension="2017-05-01"/>
  </templateId>
  <id root="c4cb3abb-1e2e-4b3a-97c1-de1685b7da02"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Encounter, Order"/>
  <statusCode code="active"/>
</encounterCriteria>
```

5.20 Encounter, Performed (V2)

[EncounterCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.5:2017-08-01 (open)]

Table 51: Encounter, Performed (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Admission Source (optional) Facility Location (optional) Reason (optional) Principal Diagnosis (optional) Diagnosis (V2) (optional)

This template represents the QDM data type: Encounter, Performed.

An encounter is an identifiable grouping of healthcare-related activities characterized by the entity relationship between the subject of care and a healthcare provider; such grouping is determined by the healthcare provider. A patient encounter represents interaction between a healthcare provider and a patient with a face-to-face patient visit to a clinician's office, or any

electronically remote interaction with a clinician for any form of diagnostic treatment or therapeutic event.

This template represents an encounter that is completed.

Timing: The Relevant Period addresses: startTime – The time the encounter began (admission time); stopTime – The time the encounter ended (discharge time).

Table 52: Encounter, Performed (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
EncounterCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.5:2017-08-01)					
@classCode	1..1	SHALL		3346-31005	ENC
@moodCode	1..1	SHALL		3346-31006	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3346-31007	
templateId	1..1	SHALL		3346-31008	
item	1..1	SHALL		3346-31009	
@root	1..1	SHALL		3346-31010	2.16.840.1.113883.10.20.28.4.5
@extension	1..1	SHALL		3346-33397	2017-08-01
id	1..1	SHALL		3346-31011	
code	1..1	SHALL		3346-31012	
@valueSet	0..1	SHOULD		3346-31013	
title	1..1	SHALL		3346-31014	
statusCode	1..1	SHALL		3346-31015	
@code	1..1	SHALL		3346-31016	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-31017	
low	0..1	MAY		3346-31018	
high	0..1	MAY		3346-31019	
lengthOfStayQuantity	0..1	MAY		3346-31033	
dischargeDispositionCode	0..1	MAY		3346-31034	
@valueSet	0..1	SHOULD		3346-33105	
participation	0..*	MAY		3346-31021	
@typeCode	1..1	SHALL		3346-31022	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = LOC

role	1..1	SHALL		3346-31023	Facility Location (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01)
participation	0..1	MAY		3346-34371	
@typeCode	1..1	SHALL		3346-34372	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = LOC
role	1..1	SHALL		3346-34373	Admission Source (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.123:2017-05-01)
participation	0..1	MAY		3346-34656	
@typeCode	1..1	SHALL		3346-34659	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34657	
low	1..1	SHALL		3346-34660	
role	1..1	SHALL		3346-34658	
@classCode	1..1	SHALL		3346-34661	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34662	
outboundRelationship	0..1	MAY		3346-31024	
@typeCode	1..1	SHALL		3346-31025	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-31026	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)
outboundRelationship	0..1	MAY		3346-33756	
@typeCode	1..1	SHALL		3346-33760	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-34374	Principal Diagnosis (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.122:2017-05-01)
outboundRelationship	0..*	MAY		3346-34041	
@typeCode	1..1	SHALL		3346-34045	REFR
observationCriteria	1..1	SHALL		3346-34375	Diagnosis (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01)

1. **SHALL** contain exactly one [1..1] @classCode="ENC" Encounter (CONF:3346-31005).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-31006).
3. **MAY** contain zero or one [0..1] @actionNegationInd (CONF:3346-31007).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] templateId (CONF:3346-31008).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3346-31009) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.5" (CONF:3346-31010).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33397).
5. **SHALL** contain exactly one [1..1] id (CONF:3346-31011).
6. **SHALL** contain exactly one [1..1] code (CONF:3346-31012).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-31013).
7. **SHALL** contain exactly one [1..1] title (CONF:3346-31014).
8. **SHALL** contain exactly one [1..1] statusCode (CONF:3346-31015).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-31016).
9. **MAY** contain zero or one [0..1] effectiveTime (CONF:3346-31017) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] low (CONF:3346-31018).
Note: startTime – The time the encounter began (admission time)
 - b. **MAY** contain zero or one [0..1] high (CONF:3346-31019).
Note: stopTime – The time the encounter ended (discharge time)
10. **MAY** contain zero or one [0..1] lengthOfStayQuantity (CONF:3346-31033).
Note: QDM Attribute: Length of Stay
11. **MAY** contain zero or one [0..1] dischargeDispositionCode (CONF:3346-31034).
Note: QDM Attribute: Discharge status
 - a. The dischargeDispositionCode, if present, **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-33105).
12. **MAY** contain zero or more [0..*] participation (CONF:3346-31021) such that it
Note: QDM Attribute: Facility Locations
 - a. **SHALL** contain exactly one [1..1] @typeCode="LOC" Location (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-31022).
 - b. **SHALL** contain exactly one [1..1] Facility Location (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01) (CONF:3346-31023).
13. **MAY** contain zero or one [0..1] participation (CONF:3346-34371) such that it
Note: QDM Attribute: Admission Source
 - a. **SHALL** contain exactly one [1..1] @typeCode="LOC" Location (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-34372).

- b. **SHALL** contain exactly one [1..1] **Admission Source** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.123:2017-05-01) (CONF:3346-34373).
14. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34656) such that it
- a. **SHALL** contain exactly one [1..1] @**typeCode**="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34659).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34657).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34660).
Note: QDM Attribute: Author dateTime (The Author dateTime addresses when an Encounter is documented. Documentation can occur at the beginning, during, at the end or subsequent to the end of an Encounter. The Author dateTime should be used only if the Relevant Period cannot be obtained)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34658).
 - i. This role **SHALL** contain exactly one [1..1] @**classCode**="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34661).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34662).
15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-31024) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] @**typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-31025).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-31026).
16. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-33756) such that it
Note: QDM Attribute: Principal Diagnosis
- a. **SHALL** contain exactly one [1..1] @**typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-33760).
 - b. **SHALL** contain exactly one [1..1] **Principal Diagnosis** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.122:2017-05-01) (CONF:3346-34374).
17. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3346-34041) such that it
Note: QDM Attribute: Diagnoses
- a. **SHALL** contain exactly one [1..1] @**typeCode**="REFR" (CONF:3346-34045).
 - b. **SHALL** contain exactly one [1..1] **Diagnosis (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01) (CONF:3346-34375).

Figure 24: Encounter, Performed (V2) Example

```
<encounterCriteria classCode="ENC" moodCode="EVN">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.5" extension="2017-08-01"/>
    </templateId>
    <id root="d7fbe089-ff04-4f58-b604-cb6d5ebce4cc"/>
    <code valueSet="{$QDMElementValueSetOID}"/>
    <title value="Encounter, Performed"/>
    <statusCode code="completed"/>
    <outboundRelationship typeCode="REFR">
        <actCriteria classCode="ACT" moodCode="EVN">
            <id root="9f751ae5-edb2-4fb3-b49c-d0f0fdef3999"/>
            <code code="52534-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
                <displayName value="Principal Diagnosis"/>
            </code>
            <title value="Encounter Principal Diagnosis"/>
            <outboundRelationship typeCode="SUBJ">
                <observationCriteria classCode="OBS" moodCode="EVN">
                    <templateId>
                        <item root="2.16.840.1.113883.10.20.28.3.110"/>
                    </templateId>
                    <id root="9e4e810d-3c3e-461e-86f8-6fe7a0b1ca2b"/>
                    <code code="282291009" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
                        <displayName value="Diagnosis"/>
                    </code>
                    <title value="Diagnosis"/>
                    <statusCode code="completed"/>
                    <value xsi:type="CD" valueSet="{$PrincipalDxValueSet}"/>
                </observationCriteria>
            </outboundRelationship>
        </actCriteria>
    </outboundRelationship>
</encounterCriteria>
```

5.21 Encounter, Recommended

[EncounterCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.28:2017-05-01 (open)]

Table 53: Encounter, Recommended Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Facility Location (optional) Reason (optional)

This template represents the QDM data type: Encounter, Recommended.

This template describes a recommendation for an encounter. It describes the recommended interactions between the patient and clinicians. Interactions include in-person encounters, telephone conversations, and email exchanges.

Timing: The time the recommendation is authored (i.e., provided to the patient).

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Table 54: Encounter, Recommended Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
EncounterCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.28:2017-05-01)					
@classCode	1..1	SHALL		3335-30854	ENC
@moodCode	1..1	SHALL		3335-30518	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3335-30855	
templateId	1..1	SHALL		3335-30519	
item	1..1	SHALL		3335-30520	
@root	1..1	SHALL		3335-30521	2.16.840.1.113883.10.20.28.4.28
@extension	1..1	SHALL		3335-33694	2017-05-01
id	1..1	SHALL		3335-30522	
code	1..1	SHALL		3335-30523	
@valueSet	0..1	SHOULD		3335-30856	
title	1..1	SHALL		3335-30526	
statusCode	1..1	SHALL		3335-30857	
@code	0..1	SHALL		3335-30858	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3335-30532	
@typeCode	1..1	SHALL		3335-30859	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = LOC
role	1..1	SHALL		3335-30533	Facility Location (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01)
participation	0..1	MAY		3335-34377	
@typeCode	1..1	SHALL		3335-34380	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3335-34378	
low	1..1	SHALL		3335-34381	
role	1..1	SHALL		3335-34379	

@classCode	1..1	SHALL		3335-34713	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3335-34382	
outboundRelationship	0..1	MAY		3335-30534	
@typeCode	1..1	SHALL		3335-30535	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3335-30536	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01

1. **SHALL** contain exactly one [1..1] **@classCode**="ENC" Encounter (CONF:3335-30854).
2. **SHALL** contain exactly one [1..1] **@moodCode**="INT" Intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-30518).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3335-30855).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-30519).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-30520) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.28" (CONF:3335-30521).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2017-05-01" (CONF:3335-33694).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-30522).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-30523).
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-30856).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-30526).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-30857).
 - a. This statusCode **SHALL** contain zero or one [0..1] **@code**="active" Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-30858).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3335-30532) such that it
Note: QDM Attribute: Facility Location
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="LOC" Location (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3335-30859).
 - b. **SHALL** contain exactly one [1..1] **Facility Location** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01) (CONF:3335-30533).
10. **MAY** contain zero or one [0..1] **participation** (CONF:3335-34377) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-34380).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3335-34378).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3335-34381).
Note: QDM Attribute: Author Time

- c. **SHALL** contain exactly one [1..1] **role** (CONF:3335-34379).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-34713).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3335-34382).
11. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-30534) such that it Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-30535).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3335-30536).

Figure 25: Encounter, Recommended Example

```
<encounterCriteria classCode="ENC" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.28" extension="2017-05-01"/>
  </templateId>
  <id root="0c2f3978-f615-4138-af4f-59ef78b46c62"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Encounter, Recommended"/>
  <statusCode code="active"/>
</encounterCriteria>
```

5.22 Facility Location

[Role: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01 (open)]

Table 55: Facility Location Contexts

Contained By:	Contains:
Encounter, Order (optional) Encounter, Recommended (optional) Adverse Event (V2) (optional) Diagnostic Study, Performed (V2) (optional) Encounter, Performed (V2) (optional)	

This template represents the QDM attribute: Facility Location.

The particular location of a facility in which the diagnostic study or encounter occurs or occurred. Examples include, but are not limited to, intensive care units (ICUs), non-ICUs, burn critical-care unit, neonatal ICU, and respiratory-care unit.

The Location Period addresses: StartTime = the time the patient arrived at the location; StopTime = the time the patient departed from the location.

Table 56: Facility Location Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
Role (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01)					
@classCode	1..1	SHALL		3335-30514	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = SDLOC
templateId	1..1	SHALL		3335-30515	
item	1..1	SHALL		3335-30516	
@root	1..1	SHALL		3335-30517	2.16.840.1.113883.10.20.28.4.92
@extension	1..1	SHALL		3335-34376	2017-05-01
code	0..1	SHOULD		3335-30900	
@valueSet	0..1	SHOULD		3335-30901	
effectiveTime	0..1	MAY		3335-31926	
low	0..1	MAY		3335-31927	
high	0..1	MAY		3335-31928	

1. **SHALL** contain exactly one [1..1] **@classCode="SDLOC"** Service Delivery Location (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-30514).
2. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-30515).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-30516) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.92"** (CONF:3335-30517).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-34376).
3. **SHOULD** contain zero or one [0..1] **code** (CONF:3335-30900).
 - a. The code, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-30901).
4. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3335-31926) such that it

Note: QDM Attribute: Location Period

 - a. **MAY** contain zero or one [0..1] **low** (CONF:3335-31927).
Note: Facility Location Arrival Datetime (The time the patient arrived at the location)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3335-31928).
Note: Facility Location Departure Datetime (The time the patient departed from the location)

Figure 26: Facility Location Example

```
<role classCode="SDLOC">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.92" extension="2017-05-01"/>
  </templateId>
  <code valueSet="{$QDMElementValueSetOID}"/>
</role>
```

5.23 Family History

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.111:2017-05-01 (open)]

Table 57: Family History Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

Family History represents a diagnosis or problem experienced by a family member of the patient. Typically, a family history will not contain very much detail, but the simple identification of a diagnosis or problem in the patient's family history may be relevant to the care of the patient.

Timing: The time the family history item is authored (i.e., entered into the record).

Table 58: Family History Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.111:2017-05-01)					
@classCode	1..1	SHALL		3335-33797	OBS
@moodCode	1..1	SHALL		3335-33798	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34703	
templateId	1..1	SHALL		3335-33791	
item	1..1	SHALL		3335-33792	
@root	1..1	SHALL		3335-33799	2.16.840.1.113883.10.20.28.4.1 11
@extension	1..1	SHALL		3335-34383	2017-05-01
id	1..1	SHALL		3335-33800	
code	1..1	SHALL		3335-33793	
@code	1..1	SHALL		3335-33801	10157-6
@codeSystem	1..1	SHALL		3335-33802	2.16.840.1.113883.6.1
title	1..1	SHALL		3335-33803	
statusCode	1..1	SHALL		3335-33794	
@code	1..1	SHALL		3335-33804	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3335-33795	
@valueSet	0..1	SHOULD		3335-33805	
participation	0..1	MAY		3335-33796	
@typeCode	1..1	SHALL		3335-33806	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3335-33807	
low	1..1	SHALL		3335-33815	
role	1..1	SHALL		3335-33808	

@classCode	1..1	SHALL		3335-33817	ROL
id	0..1	MAY		3335-33818	
participation	0..1	MAY		3335-33809	
@typeCode	1..1	SHALL		3335-33819	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = SUBJ
role	1..1	SHALL		3335-33810	
@classCode	1..1	SHALL		3335-33820	PRS
code	1..1	SHALL		3335-33811	
@valueSet	0..1	SHOULD		3335-33821	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3335-33797).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-33798).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3335-34703).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-33791).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-33792) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.111"** (CONF:3335-33799).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-34383).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-33800).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-33793).
 - a. This code **SHALL** contain exactly one [1..1] **@code="10157-6"** Family History (CONF:3335-33801).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.6.1"** (LOINC) (CONF:3335-33802).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-33803).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-33794).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-33804).
9. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:3335-33795).
Note: QDM Attribute: Code
 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-33805).
10. **MAY** contain zero or one [0..1] **participation** (CONF:3335-33796) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-33806).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3335-33807).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3335-33815).
Note: QDM Attribute: Author dateTime (The time the family history item is authored (i.e., entered into the record))
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3335-33808).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CONF:3335-33817).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3335-33818).
11. **MAY** contain zero or one [0..1] **participation** (CONF:3335-33809) such that it
Note: QDM Attribute: Relationships
- a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Subject (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-33819).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3335-33810).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="PRS"** Person (CONF:3335-33820).
 - ii. This role **SHALL** contain exactly one [1..1] **code** (CONF:3335-33811).
 - 1. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-33821).

Figure 27: Family History Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.111" extension="2017-05-01"/>
  </templateId>
  <id root="bd4673f9-0da9-4491-98ba-a00c4191d518"/>
  <code code="10157-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="Family History"/>
  </code>
  <title value="Family History"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
  <participation typeCode="SBJ">
    <role classCode="PRS">
      <code valueSet="{$RelationshipValueSetOID}"/>
    </role>
  </participation>
</observationCriteria>
```

5.24 Immunization, Administered (V3)

[substanceAdministrationCriteria: identifier
urn:h17ii:2.16.840.1.113883.10.20.28.4.112:2018-05-01 (open)]

Table 59: Immunization, Administered (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Immunization, Administered.

Immunization represents vaccines administered to patients in healthcare settings but does not include non-vaccine agents.

Timing: The time the immunization is administered, i.e., a single point in time, or author datetime.

Table 60: Immunization, Administered (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.112:2018-05-01)					
@classCode	1..1	SHALL		3372-33833	SBADM
@moodCode	1..1	SHALL		3372-33834	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3372-33835	
templateId	1..1	SHALL		3372-33830	
item	1..1	SHALL		3372-33831	
@root	1..1	SHALL		3372-33836	2.16.840.1.113883.10.20.28.4.1 12
@extension	1..1	SHALL		3372-34384	2018-05-01
id	1..1	SHALL		3372-33837	
code	1..1	SHALL		3372-33832	
@code	1..1	SHALL		3372-33838	416118004
@codeSystem	1..1	SHALL		3372-33839	2.16.840.1.113883.6.96
title	1..1	SHALL		3372-33840	
statusCode	1..1	SHALL		3372-33841	
@code	1..1	SHALL		3372-33847	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3372-33842	
low	1..1	SHALL		3372-33848	
routeCode	0..1	MAY		3372-33843	
@valueSet	0..1	SHOULD		3372-33850	
doseQuantity	0..1	MAY		3372-33851	
participation	1..1	SHALL		3372-33844	
@typeCode	1..1	SHALL		3372-33852	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM

role	1..1	SHALL		3372-33845	
@classCode	1..1	SHALL		3372-33853	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = MANU
playingManufacturedMaterial	1..1	SHALL		3372-33846	
@classCode	1..1	SHALL		3372-33854	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3372-33855	urn:oid:2.16.840.1.113883.5.30 (EntityDeterminer) = KIND
code	1..1	SHALL		3372-33856	
@valueSet	0..1	SHOULD		3372-33858	
outboundRelationship	0..1	MAY		3372-33857	
@typeCode	1..1	SHALL		3372-33859	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-33860	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode**="SBADM" Substance Administration (CONF:3372-33833).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-33834).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-33835).
Note: QDM Attribute: Negation rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-33830).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-33831) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.112" (CONF:3372-33836).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2018-05-01" (CONF:3372-34384).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-33837).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-33832).
 - a. This code **SHALL** contain exactly one [1..1] **@code**="416118004" Administration (CONF:3372-33838).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.96" (SNOMED CT) (CONF:3372-33839).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-33840).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-33841).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-33847).

9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-33842) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3372-33848).

Note: QDM Attribute: Author dateTime (The time the immunization is administered, i.e., a single point in time))
10. **MAY** contain zero or one [0..1] **routeCode** (CONF:3372-33843).

Note: QDM Attribute: Route

 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33850).
11. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3372-33851).

Note: QDM Attribute: Dosage
12. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-33844) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CSM"** Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-33852).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-33845).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="MANU"** Manufactured (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-33853).
 - ii. This role **SHALL** contain exactly one [1..1] **playingManufacturedMaterial** (CONF:3372-33846).
 1. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] **@classCode="MMAT"** Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-33854).
 2. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** Kind (CodeSystem: EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-33855).
 3. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3372-33856).

Note: QDM Attribute: Code

 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33858).
 13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-33857) such that it

Note: QDM Attribute: Reason

 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-33859).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-33860).

Figure 28: Immunization, Administered (V3) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.112" extension="2018-05-01"/>
  </templateId>
  <id root="de28ff02-d2cf-436e-898a-58eb49e15b47"/>
  <code code="416118004" codeSystem="2.16.840.1.113883.6.96">
    <displayName value="Administration"/>
  </code>
  <title value="Immunization, Administered"/>
  <statusCode code="completed"/>
  <participation typeCode="CSM">
    <role classCode="MANU">
      <playingManufacturedMaterial classCode="MMAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingManufacturedMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.25 Immunization, Order (V2)

[substanceAdministrationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.113:2017-08-01 (open)]

Table 61: Immunization, Order (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Supply (optional)

This template represents the QDM data type: Immunization, Order.

Immunization represents vaccines administered to patients in healthcare settings but does not include non-vaccine agents.

Timing: The time the order is signed; author time.

Table 62: Immunization, Order (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.113:2017-08-01)					
@classCode	1..1	SHALL		3346-34025	SBADM
@moodCode	1..1	SHALL		3346-34026	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3346-34027	
templateId	1..1	SHALL		3346-34003	
item	1..1	SHALL		3346-34004	
@root	1..1	SHALL		3346-34016	2.16.840.1.113883.10.20.28.4.1 13
@extension	1..1	SHALL		3346-34385	2017-08-01
id	1..1	SHALL		3346-34028	
title	1..1	SHALL		3346-34029	
statusCode	1..1	SHALL		3346-34005	
@code	1..1	SHALL		3346-34017	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
effectiveTime	0..1	MAY	IVL_TS	3346-34006	
low	0..1	MAY		3346-34018	
routeCode	0..1	MAY		3346-34007	
@valueSet	0..1	SHOULD		3346-34019	
doseQuantity	0..1	MAY		3346-34030	
participation	1..1	SHALL		3346-34008	
@typeCode	1..1	SHALL		3346-34024	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3346-34009	
@classCode	1..1	SHALL		3346-34020	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = MANU
playingManufacturedMaterial	1..1	SHALL		3346-34010	

@classCode	1..1	SHALL		3346-34022	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3346-34023	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3346-34011	
@valueSet	0..1	SHOULD		3346-34021	
participation	0..1	MAY		3346-34012	
@typeCode	1..1	SHALL		3346-34035	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34013	
low	1..1	SHALL		3346-34031	
role	1..1	SHALL		3346-34014	
@classCode	1..1	SHALL		3346-34033	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34034	
outboundRelationship	0..1	MAY		3346-34002	
@typeCode	1..1	SHALL		3346-34036	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-34015	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01
outboundRelationship	0..1	MAY		3346-34494	
@typeCode	1..1	SHALL		3346-34495	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
supplyCriteria	1..1	SHALL		3346-34802	Supply (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.129:2017-08-01

1. **SHALL** contain exactly one [1..1] **@classCode="SBADM"** Substance Administration (CONF:3346-34025).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-34026).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3346-34027).
Note: QDM Attribute: Negation rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-34003).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-34004) such that it

- i. This item **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.28.4.113"` (CONF:3346-34016).
- ii. This item **SHALL** contain exactly one [1..1] `@extension="2017-08-01"` (CONF:3346-34385).
- 5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-34028).
- 6. **SHALL** contain exactly one [1..1] **title** (CONF:3346-34029).
- 7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-34005).
 - a. This statusCode **SHALL** contain exactly one [1..1] `@code="active"` Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-34017).
- 8. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-34006) such that it
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3346-34018).

Note: QDM Attribute: Active datetime
- 9. **MAY** contain zero or one [0..1] **routeCode** (CONF:3346-34007).
 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] `@valueSet` (CONF:3346-34019).

Note: QDM Attribute: Route
- 10. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3346-34030).

Note: QDM Attribute: Dosage
- 11. **SHALL** contain exactly one [1..1] **participation** (CONF:3346-34008) such that it
 - a. **SHALL** contain exactly one [1..1] `@typeCode="CSM"` Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34024).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34009).
 - i. This role **SHALL** contain exactly one [1..1] `@classCode="MANU"` Manufactured (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34020).
 - ii. This role **SHALL** contain exactly one [1..1] **playingManufacturedMaterial** (CONF:3346-34010).
 - 1. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] `@classCode="MMAT"` Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3346-34022).
 - 2. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] `@determinerCode="KIND"` Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3346-34023).
 - 3. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3346-34011).

Note: QDM Attribute: Code

 - a. This code **SHOULD** contain zero or one [0..1] `@valueSet` (CONF:3346-34021).
 - 12. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34012) such that it
 - a. **SHALL** contain exactly one [1..1] `@typeCode="AUT"` Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34035).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34013).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34031).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34014).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34033).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34034).
13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34002) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34036).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-34015).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34494) such that it
Note: QDM Attribute: Supply
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34495).
 - b. **SHALL** contain exactly one [1..1] **Supply** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01) (CONF:3346-34802).

Figure 29: Immunization, Order (V2) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.113" extension="2017-08-01"/>
  </templateId>
  <id root="27beb8e3-7c86-48cf-b430-235b72786dea"/>
  <title value="Immunization, Order"/>
  <statusCode code="active"/>
  <participation typeCode="CSM">
    <role classCode="MANU">
      <playingManufacturedMaterial classCode="MMAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingManufacturedMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.26 Incision Datetime

[ProcedureCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.89:2017-05-01 (open)]

Table 63: Incision Datetime Contexts

Contained By:	Contains:
Procedure, Performed (V3) (optional)	

This template represents the QDM attribute: Incision Datetime.

Incision datetime is the time the incision was made.

Table 64: Incision Datetime Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
ProcedureCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.89:2017-05-01)					
@classCode	1..1	SHALL		3335-29907	PROC
@moodCode	1..1	SHALL		3335-29908	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3335-29909	
item	1..1	SHALL		3335-29910	
@root	1..1	SHALL		3335-29911	2.16.840.1.113883.10.20.28.4.89
@extension	1..1	SHALL		3335-33648	2017-05-01
code	1..1	SHALL		3335-29913	
@code	1..1	SHALL		3335-29914	34896006
@codeSystem	1..1	SHALL		3335-29915	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
statusCode	1..1	SHALL		3335-29993	
@code	1..1	SHALL		3335-33152	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = completed
effectiveTime	0..1	MAY	IVL_TS	3335-29916	
low	0..1	MAY		3335-29917	

1. **SHALL** contain exactly one [1..1] @classCode="PROC" (CONF:3335-29907).

2. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-29908).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-29909).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-29910) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.89" (CONF:3335-29911).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33648).
4. **SHALL** contain exactly one [1..1] **code** (CONF:3335-29913).
 - a. This code **SHALL** contain exactly one [1..1] @code="34896006" Incision (CONF:3335-29914).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-29915).
5. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-29993).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3335-33152).
6. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3335-29916) such that it
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3335-29917).

Figure 30: Incision Datetime Example

```
<procedureCriteria classCode="PROC" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.89" extension="2017-05-01"/>
  </templateId>
  <code code="34896006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="incision"/>
  </code>
  <statusCode code="completed"/>
  <effectiveTime xsi:type="IVL_TS">
    <low value="201301011000"/>
  </effectiveTime>
</procedureCriteria>
```

5.27 Intervention, Order

[actCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.35:2017-05-01 (open)]

Table 65: Intervention, Order Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Intervention, Order

An intervention order is a request by a physician or appropriately licensed care provider to an appropriate provider or facility to perform a service and/or other type of action necessary for care. Examples of this are an order for smoking cessation counseling or physical therapy.

Timing: The time the order is signed; author time

Table 66: Intervention, Order Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
actCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.35:2017-05-01)					
@classCode	1..1	SHALL		3335-30631	ACT
@moodCode	1..1	SHALL		3335-30632	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3335-30633	
templateId	1..1	SHALL		3335-30643	
item	1..1	SHALL		3335-30644	
@root	1..1	SHALL		3335-30645	2.16.840.1.113883.10.20.28.4.3 5
@extension	1..1	SHALL		3335-33383	2017-05-01
id	1..1	SHALL		3335-30650	
code	1..1	SHALL		3335-30652	
@valueSet	0..1	SHOULD		3335-30653	
title	1..1	SHALL		3335-30651	
statusCode	1..1	SHALL		3335-30654	
@code	1..1	SHALL		3335-30655	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3335-33490	
@typeCode	1..1	SHALL		3335-33492	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3335-33491	
low	1..1	SHALL		3335-33493	
role	1..1	SHALL		3335-33586	
@classCode	1..1	SHALL		3335-33587	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3335-33588	
outboundRelationship	0..1	MAY		3335-30647	

@typeCode	1..1	SHALL		3335-30648	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3335-30649	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="ACT"** Act (CONF:3335-30631).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-30632).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3335-30633).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-30643).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-30644) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.35"** (CONF:3335-30645).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-33383).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-30650).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-30652).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-30653).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-30651).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-30654).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-30655).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3335-33490) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-33492).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3335-33491).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3335-33493).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3335-33586).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-33587).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3335-33588).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-30647) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-30648).

- b. **SHALL** contain exactly one [1..1] [Reason](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3335-30649).

Figure 31: Intervention, Order Example

```
<actCriteria classCode="ACT" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.35" extension="2017-05-01"/>
  </templateId>
  <id root="A8951AC3-990F-43E4-970C-1F0F396D203E"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Intervention, Order"/>
  <statusCode code="active"/>
</actCriteria>
```

5.28 Intervention, Performed (V2)

[actCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.36:2017-08-01 (open)]

Table 67: Intervention, Performed (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Result (V2) (optional) Status (V2) (optional)

This template represents the QDM data type: Intervention, Performed.

Intervention performed represents an intervention that has been completed. Intervention represents a course of action intended to achieve a result in the care of persons with health problems that does not involve direct physical contact with a patient.

Timing: The Relevant Period addresses: startTime – The time the intervention begins; stopTime – The time the intervention ends.

Table 68: Intervention, Performed (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
actCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.36:2017-08-01)					
@classCode	1..1	SHALL		3346-31150	ACT
@moodCode	1..1	SHALL		3346-31151	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3346-31152	
templateId	1..1	SHALL		3346-31153	
item	1..1	SHALL		3346-31154	
@root	1..1	SHALL		3346-31155	2.16.840.1.113883.10.20.28.4.3 6
@extension	1..1	SHALL		3346-33384	2017-08-01
id	1..1	SHALL		3346-31156	
code	1..1	SHALL		3346-31157	
@valueSet	0..1	SHOULD		3346-31158	
title	1..1	SHALL		3346-31159	
statusCode	1..1	SHALL		3346-31160	
@code	1..1	SHALL		3346-31161	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-31162	
low	0..1	MAY		3346-31163	
high	0..1	MAY		3346-31164	
participation	0..1	MAY		3346-34523	
@typeCode	1..1	SHALL		3346-34526	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34524	
low	1..1	SHALL		3346-34527	
role	1..1	SHALL		3346-34525	

@classCode	1..1	SHALL		3346-34528	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34529	
outboundRelationship	0..1	MAY		3346-31171	
@typeCode	1..1	SHALL		3346-31172	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-31173	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)
outboundRelationship	0..1	MAY		3346-33431	
@typeCode	1..1	SHALL		3346-33433	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = VALUE
observationCriteria	1..1	SHALL		3346-33434	Result (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01)
outboundRelationship	0..1	MAY		3346-33432	
@typeCode	1..1	SHALL		3346-33435	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-33436	Status (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01)

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CONF:3346-31150).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-31151).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3346-31152).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-31153).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-31154) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.36" (CONF:3346-31155).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2017-08-01" (CONF:3346-33384).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-31156).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-31157).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-31158).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3346-31159).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-31160).

- a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-31161).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-31162) such that it
 Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3346-31163).
 Note: startTime (The time the intervention begins)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-31164).
 Note: stopTime (The time the intervention ends)
10. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34523) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34526).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34524).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34527).
 Note: QDM Attribute: Author dateTime
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34525).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34528).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34529).
11. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-31171) such that it
 Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] @typeCode="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-31172).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-31173).
12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-33431) such that it
 Note: QDM Attribute: Result
 - a. **SHALL** contain exactly one [1..1] @typeCode="VALUE" Has value (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-33433).
 - b. **SHALL** contain exactly one [1..1] **Result (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01) (CONF:3346-33434).
13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-33432) such that it
 Note: QDM Attribute: Status
 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-33435).
 - b. **SHALL** contain exactly one [1..1] **Status (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01) (CONF:3346-33436).

Figure 32: Intervention, Performed (V2) Example

```
<actCriteria classCode="ACT" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.36" extension="2017-08-01"/>
  </templateId>
  <id root="a2faf205-f9c1-485c-8edc-c9c0021a218c" />
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Intervention, Performed"/>
  <statusCode code="completed"/>
</actCriteria>
```

5.29 Intervention, Recommended

[actCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.37:2017-05-01 (open)]

Table 69: Intervention, Recommended Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Intervention, Recommended.

Intervention recommended represents a recommendation for an intervention. Intervention represents a course of action intended to achieve a result in the care of persons with health problems that does not involve direct physical contact with a patient. Examples include patient education and therapeutic communication.

Timing: The time the recommendation is authored (i.e., provided to the patient).

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Table 70: Intervention, Recommended Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
actCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.37:2017-05-01)					
@classCode	1..1	SHALL		3335-30801	ACT
@moodCode	1..1	SHALL		3335-30802	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3335-30806	
templateId	1..1	SHALL		3335-30803	
item	1..1	SHALL		3335-30804	
@root	1..1	SHALL		3335-30805	2.16.840.1.113883.10.20.28.4.3 7
@extension	1..1	SHALL		3335-33385	2017-05-01
id	1..1	SHALL		3335-30807	
code	1..1	SHALL		3335-30808	
@valueSet	0..1	SHOULD		3335-30809	
title	1..1	SHALL		3335-30810	
statusCode	1..1	SHALL		3335-30811	
@code	1..1	SHALL		3335-30812	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3335-34392	
@typeCode	1..1	SHALL		3335-34395	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3335-34393	
low	1..1	SHALL		3335-34396	
role	1..1	SHALL		3335-34394	
@classCode	1..1	SHALL		3335-34534	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3335-34397	
outboundRelationship	0..1	MAY		3335-30817	

@typeCode	1..1	SHALL		3335-30818	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3335-30819	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="ACT"** Act (CONF:3335-30801).
2. **SHALL** contain exactly one [1..1] **@moodCode="INT"** Intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-30802).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3335-30806).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-30803).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-30804) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.37"** (CONF:3335-30805).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-33385).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-30807).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-30808).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-30809).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-30810).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-30811).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-30812).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3335-34392) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3335-34395).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3335-34393).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3335-34396).
Note: QDM Attribute: Author dateTime (The time the recommendation is authored)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3335-34394).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3335-34534).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3335-34397).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-30817) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-30818).

- b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3335-30819).

Figure 33: Intervention, Recommended Example

```
<actCriteria classCode="ACT" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.37" extension="2017-05-01"/>
  </templateId>
  <id root="e242b3ae-d300-4038-a039-f9cd511544c5"/>
  <code valueSet="${QDMElementValueSetOID}"/>
  <title value="Intervention, Recommended" />
  <statusCode code="active"/>
</actCriteria>
```

5.30 Laboratory Test Reference Range

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.124:2017-05-01 (open)]

Table 71: Laboratory Test Reference Range Contexts

Contained By:	Contains:
Laboratory Test Component (optional)	
Laboratory Test, Performed (V2) (optional)	

This template represents the QDM attribute: Reference Range Low and High.

Reference Range High: The high bound (inclusive) of values that are considered normal.

Reference Range Low: The low bound (inclusive) of values that are considered normal.

Table 72: Laboratory Test Reference Range Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.124:2017-05-01)					
@classCode	1..1	SHALL		3335-34406	OBS
@moodCode	1..1	SHALL		3335-34407	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
templateId	1..1	SHALL		3335-34398	
item	1..1	SHALL		3335-34399	
@root	1..1	SHALL		3335-34401	2.16.840.1.113883.10.20.28.4.1 24
@extension	1..1	SHALL		3335-34615	2017-05-01
id	1..1	SHALL		3335-34408	
code	1..1	SHALL		3335-34400	
@code	1..1	SHALL		3335-34403	19147-8
@codeSystem	1..1	SHALL		3335-34404	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		3335-34409	
value	1..1	SHALL	IVL_P_Q	3335-34405	
low	0..1	MAY		3335-34410	
high	0..1	MAY		3335-34411	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-34406).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-34407).
3. **SHALL** contain exactly one [1..1] templateId (CONF:3335-34398).
 - a. This templateId **SHALL** contain exactly one [1..1] item (CONF:3335-34399) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.124" (CONF:3335-34401).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34615).
4. **SHALL** contain exactly one [1..1] id (CONF:3335-34408).

5. **SHALL** contain exactly one [1..1] **code** (CONF:3335-34400).
 - a. This code **SHALL** contain exactly one [1..1] @code="19147-8" Lab Test Reference Range (CONF:3335-34403).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3335-34404).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3335-34409).
7. **SHALL** contain exactly one [1..1] **value** with @xsi:type="IVL_PQ" (CONF:3335-34405).
 - a. This value **MAY** contain zero or one [0..1] **low** (CONF:3335-34410).
Note: QDM Attribute: Reference Range Low
 - b. This value **MAY** contain zero or one [0..1] **high** (CONF:3335-34411).
Note: QDM Attribute: Reference Range High

Figure 34: Laboratory Test Reference Range Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.124" extension="2017-05-01"/>
  </templateId>
  <id root="6a296c27-279f-4bdc-8707-6d030a6839a5"/>
  <code code="19147-8" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="Reference Range"/>
  </code>
  <title value="Laboratory Test Reference Range"/>
  <value xsi:type="IVL_PQ">
    <high value="17.5" unit="g/dL"/>
  </value>
</observationCriteria>
```

5.31 Laboratory Test, Order (V2)

[ProcedureCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2018-05-01 (open)]

Table 73: Laboratory Test, Order (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Laboratory Test, Order.

Laboratory Test represents a medical procedure that involves testing a sample of blood, urine, or other substance from the body. Tests can help determine a diagnosis, plan treatment, check to see if treatment is working, or monitor the disease over time. Laboratory tests may be performed on specimens not derived from patients (electrolytes or contents of water or consumed fluids, cultures of environment, pets, other animals).

Timing: The time the order is signed; author datetime.

Table 74: Laboratory Test, Order (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
ProcedureCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2018-05-01)					
@classCode	1..1	SHALL		3372-30389	PROC
@moodCode	1..1	SHALL		3372-30390	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3372-30391	
templateId	1..1	SHALL		3372-30392	
item	1..1	SHALL		3372-30393	
@root	1..1	SHALL		3372-30394	2.16.840.1.113883.10.20.28.4.4 1
@extension	1..1	SHALL		3372-33649	2017-05-01
id	1..1	SHALL		3372-30395	
code	1..1	SHALL		3372-30396	
@valueSet	0..1	SHOULD		3372-30397	
title	1..1	SHALL		3372-30398	
statusCode	1..1	SHALL		3372-33109	
@code	1..1	SHALL		3372-33110	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3372-33495	
@typeCode	1..1	SHALL		3372-33497	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-33496	
low	1..1	SHALL		3372-33498	
role	1..1	SHALL		3372-33589	
@classCode	1..1	SHALL		3372-33590	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3372-33591	
outboundRelationship	0..1	MAY		3372-30405	

@typeCode	1..1	SHALL		3372-30406	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-30407	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="PROC"** Procedure (CONF:3372-30389).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-30390).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-30391).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-30392).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-30393) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.41"** (CONF:3372-30394).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3372-33649).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-30395).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-30396).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-30397).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-30398).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-33109).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-33110).
9. **MAY** contain zero or one [0..1] **participation** (CONF:3372-33495) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-33497).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-33496).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-33498).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-33589).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-33590).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-33591).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-30405) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-30406).

- b. **SHALL** contain exactly one [1..1] [Reason](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-30407).

Figure 35: Laboratory Test, Order (V2) Example

```
<procedureCriteria classCode="PROC" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.41" extension="2018-05-01"/>
  </templateId>
  <id root="3a2a37c0-9abe-4c30-a254-8561a75d1cb4"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Laboratory Test, Order"/>
  <statusCode code="active"/>
</procedureCriteria>
```

5.32 Laboratory Test, Performed (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.42:2017-08-01 (open)]

Table 75: Laboratory Test, Performed (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Laboratory Test Component (optional) Laboratory Test Reference Range (optional) Result (V2) (optional) Status (V2) (optional)

This template represents the QDM data type: Laboratory Test, Performed.

Laboratory Test represents a medical procedure that involves testing a sample of blood, urine, or other substance from the body. Tests can help determine a diagnosis, plan treatment, check to see if treatment is working, or monitor the disease over time. Laboratory tests may be performed on specimens not derived from patients (e.g., electrolytes or contents of water or consumed fluids, cultures of environment, pets, other animals).

Timing: The Relevant Period addresses: startTime – When the laboratory test is initiated (i.e., the time the specimen collection begins); stopTime – when the laboratory test is completed (i.e., the time the specimen collection ends).

QDM Attributes: Result and Result dateTime are represented using the Result (V2) template.

Table 76: Laboratory Test, Performed (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.42:2017-08-01)					
@classCode	1..1	SHALL		3346-30364	OBS
@moodCode	1..1	SHALL		3346-33237	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3346-30365	
templateId	1..1	SHALL		3346-30366	
item	1..1	SHALL		3346-30367	
@root	1..1	SHALL		3346-30368	2.16.840.1.113883.10.20.28.4.4 2
@extension	1..1	SHALL		3346-33373	2017-08-01
id	1..1	SHALL		3346-30369	
code	1..1	SHALL		3346-30370	
@valueSet	0..1	SHOULD		3346-30371	
title	1..1	SHALL		3346-30372	
statusCode	1..1	SHALL		3346-30373	
@code	1..1	SHALL		3346-30509	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-30374	
low	0..1	MAY		3346-30375	
high	0..1	MAY		3346-30376	
value	0..0	SHALL NOT		3346-33611	
methodCode	0..1	MAY		3346-30377	
item	1..1	SHALL		3346-30378	
@valueSet	0..1	SHOULD		3346-30379	
participation	0..1	MAY		3346-34535	

@typeCode	1..1	SHALL		3346-34538	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34536	
low	1..1	SHALL		3346-34539	
role	1..1	SHALL		3346-34537	
@classCode	1..1	SHALL		3346-34540	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34541	
outboundRelationship	0..1	MAY		3346-30380	
@typeCode	1..1	SHALL		3346-34061	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-30382	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01
outboundRelationship	0..1	MAY		3346-34767	
@typeCode	1..1	SHALL		3346-34768	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = VALUE
observationCriteria	1..1	SHALL		3346-34769	Result (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.101:2017-08-01
outboundRelationship	0..1	MAY		3346-33372	
@typeCode	1..1	SHALL		3346-34618	REFR
observationCriteria	1..1	SHALL		3346-33375	Status (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.94:2017-08-01
outboundRelationship	0..1	MAY		3346-34062	
@typeCode	1..1	SHALL		3346-34066	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFL
observationCriteria	1..1	SHALL		3346-34412	Laboratory Test Reference Range (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.124:2017-05-01
outboundRelationship	0..*	MAY		3346-34617	
@typeCode	1..1	SHALL		3346-34619	REFR

observationCriteria	1..1	SHALL		3346-34620	Laboratory Test Component (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.126:2017-05-01)
---------------------	------	-------	--	----------------------------	---------------------------------------------------------------------------------------------------------------

1. **SHALL** contain exactly one [1..1] `@classCode="OBS"` Observation (CONF:3346-30364).
2. **SHALL** contain exactly one [1..1] `@moodCode="EVN"` Event (CodeSystem: HL7ActMood `urn:oid:2.16.840.1.113883.5.1001`) (CONF:3346-33237).
3. **MAY** contain zero or one [0..1] `@actionNegationInd` (CONF:3346-30365).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] `templateId` (CONF:3346-30366).
 - a. **SHALL** contain exactly one [1..1] `item` (CONF:3346-30367) such that it
 - i. This item **SHALL** contain exactly one [1..1] `@root="2.16.840.1.113883.10.20.28.4.42"` (CONF:3346-30368).
 - ii. This item **SHALL** contain exactly one [1..1] `@extension="2017-08-01"` (CONF:3346-33373).
5. **SHALL** contain exactly one [1..1] `id` (CONF:3346-30369).
6. **SHALL** contain exactly one [1..1] `code` (CONF:3346-30370).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] `@valueSet` (CONF:3346-30371).
7. **SHALL** contain exactly one [1..1] `title` (CONF:3346-30372).
8. **SHALL** contain exactly one [1..1] `statusCode` (CONF:3346-30373).
 - a. This statusCode **SHALL** contain exactly one [1..1] `@code="completed"` Completed (CodeSystem: HL7ActStatus `urn:oid:2.16.840.1.113883.5.14`) (CONF:3346-30509).
9. **MAY** contain zero or one [0..1] `effectiveTime` (CONF:3346-30374) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] `low` (CONF:3346-30375).
Note: startTime (When the laboratory test is initiated (i.e., the time the specimen collection begins))
 - b. **MAY** contain zero or one [0..1] `high` (CONF:3346-30376).
Note: stopTime (When the laboratory test is completed (i.e., the time the specimen collection ends))
10. **SHALL NOT** contain [0..0] `value` (CONF:3346-33611).
Note: Use Result (V2) template for the QDM Attribute: Result
11. **MAY** contain zero or one [0..1] `methodCode` (CONF:3346-30377).
Note: QDM Attribute: Method
 - a. The methodCode, if present, **SHALL** contain exactly one [1..1] `item` (CONF:3346-30378).
 - i. This item **SHOULD** contain zero or one [0..1] `@valueSet` (CONF:3346-30379).
12. **MAY** contain zero or one [0..1] `participation` (CONF:3346-34535) such that it
 - a. **SHALL** contain exactly one [1..1] `@typeCode="AUT"` Author (CodeSystem: HL7ParticipationType `urn:oid:2.16.840.1.113883.5.90`) (CONF:3346-34538).
 - b. **SHALL** contain exactly one [1..1] `time` (CONF:3346-34536).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34539).
Note: QDM Attribute: Author Datetime
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34537).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34540).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34541).
13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-30380) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34061).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-30382).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34767) such that it
Note: QDM Attribute: Result, QDM Attribute: Result dateTime
- a. **SHALL** contain exactly one [1..1] **@typeCode="VALUE"** has value (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34768).
 - b. **SHALL** contain exactly one [1..1] **Result (v2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01) (CONF:3346-34769).
15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-33372) such that it
Note: QDM Attribute: Status
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers To (CONF:3346-34618).
 - b. **SHALL** contain exactly one [1..1] **Status (v2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01) (CONF:3346-33375).
16. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34062) such that it
Note: QDM Attribute: Reference Range Low, QDM Attribute: Reference Range High
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFV"** Has Reference Values (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34066).
 - b. **SHALL** contain exactly one [1..1] **Laboratory Test Reference Range** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.124:2017-05-01) (CONF:3346-34412).
17. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3346-34617) such that it
Note: QDM Attribute: Components
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers To (CONF:3346-34619).
 - b. **SHALL** contain exactly one [1..1] **Laboratory Test Component** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.126:2017-05-01) (CONF:3346-34620).

Figure 36: Laboratory Test, Performed (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.42" extension="2017-08-01"/>
  </templateId>
  <id root="05f0a7c8-371e-4e77-aad4-22ff9fdf7fa3"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Laboratory Test, Performed"/>
  <statusCode code="completed"/>
</observationCriteria>
```

5.33 Laboratory Test, Recommended (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2018-05-01 (open)]

Table 77: Laboratory Test, Recommended (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Laboratory Test, Recommended.

This template represents a recommendation for a laboratory test. Laboratory Test represents a medical procedure that involves testing a sample of blood, urine, or other substance from the body. Tests can help determine a diagnosis, plan treatment, check to see if treatment is working, or monitor the disease over time. Laboratory tests may be performed on specimens not derived from patients (electrolytes or contents of water or consumed fluids, cultures of environment, pets, other animals).

Timing: The time the recommendation is authored (i.e., provided to the patient).

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Table 78: Laboratory Test, Recommended (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2018-05-01)					
@classCode	1..1	SHALL		3372-30414	OBS
@moodCode	1..1	SHALL		3372-30415	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3372-30416	
templateId	1..1	SHALL		3372-30417	
item	1..1	SHALL		3372-30418	
@root	1..1	SHALL		3372-30419	2.16.840.1.113883.10.20.28.4.4 3
@extension	1..1	SHALL		3372-33692	2018-05-01
id	1..1	SHALL		3372-30420	
code	1..1	SHALL		3372-30421	
@valueSet	0..1	SHOULD		3372-30422	
title	1..1	SHALL		3372-30423	
statusCode	1..1	SHALL		3372-30424	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus)
@code	1..1	SHALL		3372-30510	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
participation	0..1	MAY		3372-34413	
@typeCode	1..1	SHALL		3372-34416	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34414	
low	1..1	SHALL		3372-34417	
role	1..1	SHALL		3372-34415	
@classCode	1..1	SHALL		3372-34418	ROL
id	0..1	MAY		3372-34419	
outboundRelationship	0..1	MAY		3372-30431	

@typeCode	1..1	SHALL		3372-34115	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-30433	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

11. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3372-30414).
12. **SHALL** contain exactly one [1..1] **@moodCode="INT"** Intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-30415).
13. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-30416).
Note: QDM Attribute: Negation Rationale
14. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-30417).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-30418) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.43"** (CONF:3372-30419).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33692).
15. **SHALL** contain exactly one [1..1] **id** (CONF:3372-30420).
16. **SHALL** contain exactly one [1..1] **code** (CONF:3372-30421).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-30422).
17. **SHALL** contain exactly one [1..1] **title** (CONF:3372-30423).
18. **SHALL** contain exactly one [1..1] **statusCode** (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-30424).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-30510).
19. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34413) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34416).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34414).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34417).
Note: QDM Attribute: Author dateTime (The time the recommendation is authored (i.e., provided to the patient))
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34415).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CONF:3372-34418).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34419).
20. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-30431) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34115).

- b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-30433).

Figure 37: Laboratory Test, Recommended (V2) Example

```
<observationCriteria classCode="OBS" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.43" extension="2018-05-01"/>
  </templateId>
  <id root="7a54587b-f1d6-4ce1-bb4c-30ffc5139565"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Laboratory Test, Recommended"/>
  <statusCode code="active"/>
</observationCriteria>
```

5.34 Medication, Active (V3)

[substanceAdministrationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2018-05-01 (open)]

Table 79: Medication, Active (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Medication, Active.

Medication represents clinical drugs or chemical substances intended for use in the medical diagnosis, cure, treatment, or prevention of disease. Medication active represents medication that is currently being taken by the patient.

Timing: The Relevant Period addresses: StartTime = when the medication is first known to be used (generally the time of entry on the medication list); StopTime = when the medication is discontinued (generally the time discontinuation is recorded on the medication list).

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Table 80: Medication, Active (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2018-05-01)					
@classCode	1..1	SHALL		3372-31950	SBADM
@moodCode	1..1	SHALL		3372-31951	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3372-34809	
templateId	1..1	SHALL		3372-31953	
item	1..1	SHALL		3372-31954	
@root	1..1	SHALL		3372-31955	2.16.840.1.113883.10.20.28.4.4 4
@extension	1..1	SHALL		3372-33376	2018-05-01
id	1..1	SHALL		3372-31956	
title	1..1	SHALL		3372-31957	
statusCode	1..1	SHALL		3372-31958	
@code	1..1	SHALL		3372-31959	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
effectiveTime	0..1	MAY	IVL_TS	3372-31960	
low	0..1	MAY		3372-31961	
high	0..1	MAY		3372-31962	
effectiveTime	0..1	MAY	PIVL_TS	3372-34803	
period	0..1	MAY		3372-34804	
routeCode	0..1	MAY		3372-33115	
@valueSet	0..1	SHOULD		3372-33116	
doseQuantity	0..1	MAY		3372-33117	
participation	1..1	SHALL		3372-33121	
@typeCode	1..1	SHALL		3372-33122	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM

role	1..1	SHALL		3372-33123	
playingMaterial	1..1	SHALL		3372-33124	
@classCode	1..1	SHALL		3372-34116	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3372-33125	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3372-33126	
@valueSet	0..1	SHOULD		3372-33127	

1. **SHALL** contain exactly one [1..1] **@classCode**="SBADM" Substance Administrated (CONF:3372-31950).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-31951).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3372-34809).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-31953).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-31954) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.44" (CONF:3372-31955).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2018-05-01" (CONF:3372-33376).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-31956).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3372-31957).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-31958).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="active" Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-31959).
8. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-31960) such that it

Note: QDM Attribute: Relevant Period

- a. **MAY** contain zero or one [0..1] **low** (CONF:3372-31961).
Note: startDateTime - when a single medication administration event starts (e.g., the initiation of an intravenous infusion, or administering a pill or IM injection to a patient)
- b. **MAY** contain zero or one [0..1] **high** (CONF:3372-31962).
Note: stopTime - when a single medication administration event ends (e.g., the end time of the intravenous infusion, or the administration of a pill or IM injection is completed - for pills and IM injections, the start and stop times are the same)
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-34803) such that it
Note: QDM Attribute: Frequency
 - a. **MAY** contain zero or one [0..1] **period** (CONF:3372-34804).
10. **MAY** contain zero or one [0..1] **routeCode** (CONF:3372-33115).
Note: QDM Attribute: Route

- a. The routeCode, if present, **SHOULD** contain zero or one [0..1] @valueSet (CONF:3372-33116).
11. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3372-33117).
 Note: QDM Attribute: Dosage
12. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-33121) such that it
- a. **SHALL** contain exactly one [1..1] @typeCode="CSM" Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-33122).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-33123).
 - i. This role **SHALL** contain exactly one [1..1] **playingMaterial** (CONF:3372-33124).
 - 1. This playingMaterial **SHALL** contain exactly one [1..1] @classCode="MMAT" Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-34116).
 - 2. This playingMaterial **SHALL** contain exactly one [1..1] @determinerCode="KIND" Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-33125).
 - 3. This playingMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3372-33126).
 - a. This code **SHOULD** contain zero or one [0..1] @valueSet (CONF:3372-33127).

Figure 38: Medication, Active (V3) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.44" extension="2018-05-01"/>
  </templateId>
  <id root="6c21f22e-3ae3-435d-a240-7718cc418b7d"/>
  <title value="Medication, Active"/>
  <statusCode code="active"/>
  <participation typeCode="CSM">
    <role classCode="MANU">
      <playingMaterial classCode="MMAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.35 Medication, Administered (V3)

[substanceAdministrationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.45:2018-05-01 (open)]

Table 81: Medication, Administered (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Medication, Administered.

A medication refers to clinical drugs or chemical substances intended for use in the medical diagnosis, cure, treatment, or prevention of disease. This template represents a medication that was administered.

Timing: The Relevant Period addresses: StartTime = when a single medication administration event starts (e.g., the initiation of an intravenous infusion, or administering a pill or IM injection to a patient); StopTime = when a single medication administration event ends (e.g., the end time of the intravenous infusion, or the administration of a pill or IM injection is completed - for pills and IM injections, the start and stop times are the same) .

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Table 82: Medication, Administered (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.45:2018-05-01)					
@classCode	1..1	SHALL		3372-32047	SBADM
@moodCode	1..1	SHALL		3372-32048	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3372-32049	
templateId	1..1	SHALL		3372-32050	
item	1..1	SHALL		3372-32051	
@root	1..1	SHALL		3372-32052	2.16.840.1.113883.10.20.28.4.45
@extension	1..1	SHALL		3372-33386	2018-05-01
id	1..1	SHALL		3372-32053	
code	1..1	SHALL		3372-32054	
@code	1..1	SHALL		3372-32055	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 416118004
@codeSystem	1..1	SHALL		3372-32056	2.16.840.1.113883.6.96
title	1..1	SHALL		3372-32057	
statusCode	1..1	SHALL		3372-32058	
@code	1..1	SHALL		3372-32059	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3372-32060	
low	0..1	MAY		3372-32061	
high	0..1	MAY		3372-32062	
effectiveTime	0..1	MAY	PIVL_TS	3372-34806	
period	0..1	MAY		3372-34807	
routeCode	0..1	MAY		3372-32506	
@valueSet	0..1	SHOULD		3372-32507	

doseQuantity	0..1	MAY		3372-33128	
participation	1..1	SHALL		3372-32497	
@typeCode	1..1	SHALL		3372-32503	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3372-32498	
@classCode	1..1	SHALL		3372-32504	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = MANU
playingManufacturedMaterial	1..1	SHALL		3372-32499	
@classCode	1..1	SHALL		3372-32500	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3372-32520	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3372-32501	
@valueSet	0..1	SHOULD		3372-32502	
participation	0..1	MAY		3372-34542	
@typeCode	1..1	SHALL		3372-34545	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34543	
low	1..1	SHALL		3372-34546	
role	1..1	SHALL		3372-34544	
@classCode	1..1	SHALL		3372-34547	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34548	
outboundRelationship	0..1	MAY		3372-32511	
@typeCode	1..1	SHALL		3372-32512	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-32513	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="SBADM"** Substance Administration (CONF:3372-32047).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-32048).

3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-32049).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-32050).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-32051) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.45" (CONF:3372-32052).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2018-05-01" (CONF:3372-33386).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-32053).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-32054).
 - a. This code **SHALL** contain exactly one [1..1] **@code**="416118004" Administration (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3372-32055).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.96" (CONF:3372-32056).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-32057).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-32058).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-32059).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-32060) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3372-32061).
Note: startTime - when a single medication administration event starts (e.g., the initiation of an intravenous infusion, or administering a pill or IM injection to a patient)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3372-32062).
Note: stopTime - when a single medication administration event ends (e.g., the end time of the intravenous infusion, or the administration of a pill or IM injection is completed - for pills and IM injections, the start and stop times are the same)
10. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-34806) such that it
Note: QDM Attribute: Frequency
 - a. **MAY** contain zero or one [0..1] **period** (CONF:3372-34807).
11. **MAY** contain zero or one [0..1] **routeCode** (CONF:3372-32506).
Note: QDM Attribute: Route
 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-32507).
12. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3372-33128).
Note: QDM Attribute: Dosage
13. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-32497) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="CSM" Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-32503).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-32498).

- i. This role **SHALL** contain exactly one [1..1] `@classCode="MANU"` Manufactured Product (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-32504).
 - ii. This role **SHALL** contain exactly one [1..1] `playingManufacturedMaterial` (CONF:3372-32499).
 - 1. This `playingManufacturedMaterial` **SHALL** contain exactly one [1..1] `@classCode="MMAT"` Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-32500).
 - 2. This `playingManufacturedMaterial` **SHALL** contain exactly one [1..1] `@determinerCode="KIND"` Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-32520).
 - 3. This `playingManufacturedMaterial` **SHALL** contain exactly one [1..1] `code` (CONF:3372-32501).
 - a. This `code` **SHOULD** contain zero or one [0..1] `@valueSet` (CONF:3372-32502).
14. **MAY** contain zero or one [0..1] `participation` (CONF:3372-34542) such that it
- a. **SHALL** contain exactly one [1..1] `@typeCode="AUT"` Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34545).
 - b. **SHALL** contain exactly one [1..1] `time` (CONF:3372-34543).
 - i. This `time` **SHALL** contain exactly one [1..1] `low` (CONF:3372-34546).
Note: QDM Attribute: Author Time
 - ii. This role **MAY** contain zero or one [0..1] `id` (CONF:3372-34548).
 - c. **SHALL** contain exactly one [1..1] `role` (CONF:3372-34544).
 - i. This role **SHALL** contain exactly one [1..1] `@classCode="ROL"` Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34547).
 - ii. This role **MAY** contain zero or one [0..1] `id` (CONF:3372-34548).
15. **MAY** contain zero or one [0..1] `outboundRelationship` (CONF:3372-32511) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] `@typeCode="RSON"` Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32512).
 - b. **SHALL** contain exactly one [1..1] `Reason` (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-32513).
Note: QDM Attribute: Reason

Figure 39: Medication, Administered (V3) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.45" extension="2018-05-01"/>
  </templateId>
  <id root="de28ff02-d2cf-436e-898a-58eb49e15b47"/>
  <code code="416118004" codeSystem="2.16.840.1.113883.6.96">
    <displayName value="Administration"/>
  </code>
  <title value="Medication, Administered"/>
  <statusCode code="completed"/>
  <participation typeCode="CSM">
    <role classCode="MANU">
      <playingManufacturedMaterial classCode="MMAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingManufacturedMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.36 Medication, Discharge (V2)

[substanceAdministrationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.48:2017-08-01 (open)]

Table 83: Medication, Discharge (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Supply (optional)

This template represents the QDM data type: Medication, Discharge.

A medication refers to clinical drugs or chemical substances intended for use in the medical diagnosis, cure, treatment, or prevention of disease. This template represents medication should be taken by or given to the patient after being discharged from an inpatient encounter

Timing: The time the discharge medication list on the discharge instruction form is authored.

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication). Dispensed to a patient to be taken at a later time.

Table 84: Medication, Discharge (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.48:2017-08-01)					
@classCode	1..1	SHALL		3346-32521	SBADM
@moodCode	1..1	SHALL		3346-32522	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3346-33438	
templateId	1..1	SHALL		3346-32523	
item	1..1	SHALL		3346-32524	
@root	1..1	SHALL		3346-32525	2.16.840.1.113883.10.20.28.4.4 8
@extension	1..1	SHALL		3346-33439	2017-08-01
id	1..1	SHALL		3346-32526	
code	1..1	SHALL		3346-32527	
@code	1..1	SHALL		3346-32528	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 10183-2
@codeSystem	1..1	SHALL		3346-32529	2.16.840.1.113883.6.1
title	1..1	SHALL		3346-32530	
statusCode	1..1	SHALL		3346-32531	
@code	1..1	SHALL		3346-32532	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
effectiveTime	0..1	MAY	PIVL_TS	3346-34810	
period	0..1	MAY		3346-34811	
repeatNumber	0..1	MAY		3346-32536	
routeCode	0..1	MAY		3346-32537	
@valueSet	0..1	SHOULD		3346-32538	
doseQuantity	0..1	MAY		3346-34437	
participation	1..1	SHALL		3346-32539	

@typeCode	1..1	SHALL		3346-32540	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3346-32541	
@classCode	1..1	SHALL		3346-32542	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = MANU
playingManufacturedMaterial	1..1	SHALL		3346-32543	
@classCode	1..1	SHALL		3346-32544	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3346-32545	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3346-32546	
@valueSet	0..1	SHOULD		3346-32547	
participation	0..1	MAY		3346-34438	
@typeCode	1..1	SHALL		3346-34442	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34439	
low	1..1	SHALL		3346-34443	
role	1..1	SHALL		3346-34440	
@classCode	1..1	SHALL		3346-34444	ROL
id	0..1	MAY		3346-34445	
outboundRelationship	0..1	MAY		3346-34441	
@typeCode	1..1	SHALL		3346-34446	REFR
supplyCriteria	1..1	SHALL		3346-34812	Supply (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.129:2017-08-01
outboundRelationship	0..1	MAY		3346-34130	
@typeCode	1..1	SHALL		3346-34131	RSON
observationCriteria	1..1	SHALL		3346-34132	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01

1. **SHALL** contain exactly one [1..1] @classCode="SBADM" Substance Administration (CONF:3346-32521).

2. **SHALL** contain exactly one [1..1] @moodCode="RQO" Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-32522).
3. **MAY** contain zero or one [0..1] @actionNegationInd (CONF:3346-33438).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] templateId (CONF:3346-32523).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3346-32524) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.48" (CONF:3346-32525).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33439).
5. **SHALL** contain exactly one [1..1] id (CONF:3346-32526).
6. **SHALL** contain exactly one [1..1] code (CONF:3346-32527).
 - a. This code **SHALL** contain exactly one [1..1] @code="10183-2" Discharge Medication (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3346-32528).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CONF:3346-32529).
7. **SHALL** contain exactly one [1..1] title (CONF:3346-32530).
8. **SHALL** contain exactly one [1..1] statusCode (CONF:3346-32531).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="active" Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-32532).
9. **MAY** contain zero or one [0..1] effectiveTime (CONF:3346-34810) such that it
Note: QDM Attribute: Frequency
 - a. **MAY** contain zero or one [0..1] period (CONF:3346-34811).
10. **MAY** contain zero or one [0..1] repeatNumber (CONF:3346-32536).
Note: QDM Attribute: Refills
11. **MAY** contain zero or one [0..1] routeCode (CONF:3346-32537).
Note: QDM Attribute: Route
 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-32538).
12. **MAY** contain zero or one [0..1] doseQuantity (CONF:3346-34437).
Note: QDM Attribute: Dosage
13. **SHALL** contain exactly one [1..1] participation (CONF:3346-32539) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="CSM" Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-32540).
 - b. **SHALL** contain exactly one [1..1] role (CONF:3346-32541).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="MANU" Manufactured Product (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-32542).
 - ii. This role **SHALL** contain exactly one [1..1] playingManufacturedMaterial (CONF:3346-32543).
 1. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] @classCode="MMAT" Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3346-32544).

2. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3346-32545).
 3. This playingManufacturedMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3346-32546).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-32547).
14. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34438) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34442).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34439).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34443).
Note: QDM Attribute: Author dateTime (The time the discharge medication list on the discharge instruction form is authored)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34440).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CONF:3346-34444).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34445).
15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34441) such that it
Note: QDM Attribute: Supply
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers To (CONF:3346-34446).
 - b. **SHALL** contain exactly one [1..1] **Supply** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01) (CONF:3346-34812).
16. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34130) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CONF:3346-34131).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-34132).

Figure 40: Medication, Discharge (V2) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="RQO">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.48" extension="2017-08-01"/>
    </templateId>
    <id root="7c7cb827-4ff6-4585-aba3-885a89c32083"/>
    <code code="10183-2" codeSystem="2.16.840.1.113883.6.1">
        <displayName value="Discharge Medication"/>
    </code>
    <title value="Medication, Discharge"/>
    <statusCode code="active" />
    <participation typeCode="CSM">
        <role classCode="MANU">
            <playingManufacturedMaterial classCode="MMAT" determinerCode="KIND">
                <code valueSet="{$QDMElementValueSetOID}"/>
            </playingManufacturedMaterial>
        </role>
    </participation>
</substanceAdministrationCriteria>
```

5.37 Medication, Dispensed (V2)

[supplyCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.49:2017-08-01 (open)]

Table 85: Medication, Dispensed (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Dosage (optional)

This template represents the QDM data type: Medication, Dispensed.

Medication dispensed is to give medications to a patient or patient proxy based on a prescription. Typically, in the ambulatory setting, medications are primarily taken directly by patients and not directly observed. Hence, medications dispensed are the closest health provider documentation of medication compliance.

Timing: The time the medication dispensing event occurs; the author dateTime.

Timing: The Relevant Period addresses:

start Time = when the first administration of the medication is expected. If not specified, the start Time defaults to the Author dateTime (the time the medication dispensing event occurs).

stop Time = when the medication supply provided by the dispensing event is expected to be completed.

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication). Dispensed to a patient to be taken at a later time.

Table 86: Medication, Dispensed (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
supplyCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.49:2017-08-01)					
@classCode	1..1	SHALL		3346-32560	SPLY
@moodCode	1..1	SHALL		3346-32561	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3346-32562	
templateId	1..1	SHALL		3346-32563	
item	1..1	SHALL		3346-32564	
@root	1..1	SHALL		3346-32565	2.16.840.1.113883.10.20.28.4.4 9
@extension	1..1	SHALL		3346-33752	2017-08-01
id	1..1	SHALL		3346-32566	
title	1..1	SHALL		3346-32567	
statusCode	1..1	SHALL		3346-32568	
@code	1..1	SHALL		3346-32582	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-32569	
low	1..1	SHALL		3346-32570	
high	0..1	MAY		3346-34860	
effectiveTime	0..1	MAY	PIVL_TS	3346-34856	
period	0..1	MAY		3346-34857	
repeatNumber	0..1	MAY		3346-32572	
quantity	0..1	MAY		3346-34858	
participation	1..1	SHALL		3346-32573	
@typeCode	1..1	SHALL		3346-32574	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3346-32575	

@classCode	1..1	SHALL		3346-32576	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = MANU
playingMaterial	0..1	MAY		3346-32577	
@classCode	1..1	SHALL		3346-32578	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3346-32579	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3346-32580	
@valueSet	0..1	SHOULD		3346-32581	
participation	0..1	MAY		3346-34861	
@typeCode	1..1	SHALL		3346-34864	AUT
time	1..1	SHALL		3346-34862	
low	1..1	SHALL		3346-34865	
role	1..1	SHALL		3346-34863	
@classCode	1..1	SHALL		3346-34866	ROL
id	0..1	MAY		3346-34867	
outboundRelationship	0..1	MAY		3346-34448	
@typeCode	1..1	SHALL		3346-34449	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-34450	Dosage (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.125:2017-05-01
outboundRelationship	0..1	MAY		3346-32589	
@typeCode	1..1	SHALL		3346-32590	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-32591	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01

1. **SHALL** contain exactly one [1..1] @classCode="SPLY" Supply (CONF:3346-32560).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-32561).

3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3346-32562).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-32563).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-32564) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.49" (CONF:3346-32565).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2017-08-01" (CONF:3346-33752).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-32566).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3346-32567).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-32568).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-32582).
8. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-32569) such that it
Note: QDM Attribute: Relevant Period
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3346-32570).
Note: startTime = when the first administration of the medication is expected
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-34860).
Note: stopTime = when the medication supply provided by the dispensing event is expected to be completed
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-34856) such that it
Note: QDM Attribute: Frequency
 - a. **MAY** contain zero or one [0..1] **period** (CONF:3346-34857).
10. **MAY** contain zero or one [0..1] **repeatNumber** (CONF:3346-32572).
Note: QDM Attribute: Refills
11. **MAY** contain zero or one [0..1] **quantity** (CONF:3346-34858).
Note: QDM Attribute: Supply
12. **SHALL** contain exactly one [1..1] **participation** (CONF:3346-32573) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="CSM" Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-32574).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3346-32575).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode**="MANU" Manufactured Product (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-32576).
 - ii. This role **MAY** contain zero or one [0..1] **playingMaterial** (CONF:3346-32577).
 1. The playingMaterial, if present, **SHALL** contain exactly one [1..1] **@classCode**="MMAT" Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3346-32578).
 2. The playingMaterial, if present, **SHALL** contain exactly one [1..1] **@determinerCode**="KIND" Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3346-32579).

3. The playingMaterial, if present, **SHALL** contain exactly one [1..1] **code** (CONF:3346-32580).

Note: QDM Attribute: Code

- a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-32581).

13. **MAY** contain zero or one [0..1] **participation** (CONF:3346-34861) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CONF:3346-34864).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34862).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34865).

Note: QDM Attribute: Author dateTime

- c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34863).

- i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CONF:3346-34866).

- ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34867).

14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34448) such that it

Note: QDM Attribute: Dosage

- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34449).
 - b. **SHALL** contain exactly one [1..1] **Dosage** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.125:2017-05-01) (CONF:3346-34450).

15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-32589) such that it

Note: QDM Attribute: Reason

- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-32590).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-32591).

Figure 41: Medication, Dispensed (V2) Example

```
<supplyCriteria classCode="SPLY" moodCode="EVN">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.49" extension="2017-08-01"/>
    </templateId>
    <id root="3c4dcf95-2b8b-4e29-bfef-40aaf2e3a80c"/>
    <title value="Medication, Dispensed"/>
    <statusCode code="completed"/>
    <participation typeCode="CSM">
        <role classCode="MANU">
            <playingMaterial classCode="MMAT" determinerCode="KIND">
                <code valueSet="{$QDMElementValueSetOID}"/>
            </playingMaterial>
        </role>
    </participation>
</supplyCriteria>
```

5.38 Medication, Order (V3)

[substanceAdministrationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.51:2018-05-01 (open)]

Table 87: Medication, Order (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Supply (optional)

This template represents the QDM data type: Medication, Order.

This represents an order for a medication, intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease and that is not dependent on being metabolized to achieve any of its primary intended purposes.

Timing: The time the order is signed; author dateTime.

Timing: The Relevant Period addresses:

startTime = when the first administration of the medication is expected. The first administration may be expected at the time of the order or at a specified future date (i.e., the active time for the order); such information should be identified in the medication order. If the startTime is not specified in the order, the startTime defaults to the Author dateTime (the time the order is signed).

stopTime = when the medication supply provided by the medication order is expected to be completed, including all fulfillments covered by the number of refills.

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication). Dispensed to a patient to be taken at a later time.

Table 88: Medication, Order (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.51:2018-05-01)					
@classCode	1..1	SHALL		3372-30218	SBADM
@moodCode	1..1	SHALL		3372-29049	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3372-31037	
templateId	1..1	SHALL		3372-29050	
item	1..1	SHALL		3372-29051	
@root	1..1	SHALL		3372-29052	2.16.840.1.113883.10.20.28.4.5 1
@extension	1..1	SHALL		3372-33443	2018-05-01
id	1..1	SHALL		3372-30185	
title	1..1	SHALL		3372-30186	
statusCode	1..1	SHALL		3372-30227	
@code	1..1	SHALL		3372-30228	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
effectiveTime	0..1	MAY	IVL_TS	3372-30504	
low	0..1	MAY		3372-31035	
high	0..1	MAY		3372-34859	
effectiveTime	0..1	MAY	PIVL_TS	3372-34816	
period	0..1	MAY		3372-34817	
repeatNumber	0..1	MAY		3372-31038	
routeCode	0..1	MAY		3372-30188	
@valueSet	0..1	SHOULD		3372-30231	
doseQuantity	0..1	MAY		3372-30224	
participation	1..1	SHALL		3372-29053	

@typeCode	1..1	SHALL		3372-29054	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3372-29055	
@classCode	1..1	SHALL		3372-29056	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = MANU
playingMaterial	1..1	SHALL		3372-29057	
@classCode	1..1	SHALL		3372-29058	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MMAT
@determinerCode	1..1	SHALL		3372-29059	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3372-29060	
@valueSet	0..1	SHOULD		3372-30164	
participation	0..1	MAY		3372-33441	
@typeCode	1..1	SHALL		3372-33444	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-33442	
low	1..1	SHALL		3372-33500	
role	1..1	SHALL		3372-33592	
@classCode	1..1	SHALL		3372-33593	ROL
id	0..1	MAY		3372-33594	
participation	0..1	MAY		3372-34860	
@typeCode	1..1	SHALL		3372-34862	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = LOC
role	1..1	SHALL		3372-34861	
@classCode	1..1	SHALL		3372-34863	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = EXLOC
code	1..1	SHALL		3372-34864	
outboundRelationship	0..1	MAY		3372-30190	
@typeCode	1..1	SHALL		3372-30191	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-30192	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01

outboundRelationship	0..1	MAY		3372-34451	
@typeCode	1..1	SHALL		3372-34452	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
supplyCriteria	1..1	SHALL		3372-34818	Supply (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.129:2017-08-01

1. **SHALL** contain exactly one [1..1] **@classCode**="SBADM" Substance Administration (CONF:3372-30218).
2. **SHALL** contain exactly one [1..1] **@moodCode**="RQO" Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-29049).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-31037).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-29050).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-29051) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.51" (CONF:3372-29052).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2018-05-01" (CONF:3372-33443).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-30185).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3372-30186).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-30227).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="active" Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-30228).
8. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-30504) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3372-31035).
Note: startTime = when the first administration of the medication is expected
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3372-34859).
Note: stopTime = when the medication supply provided by the medication order is expected to be completed, including all fulfillments covered by the number of refills
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-34816) such that it
Note: QDM Attribute: Frequency
 - a. **MAY** contain zero or one [0..1] **period** (CONF:3372-34817).
10. **MAY** contain zero or one [0..1] **repeatNumber** (CONF:3372-31038).
Note: QDM Attribute: Refills
11. **MAY** contain zero or one [0..1] **routeCode** (CONF:3372-30188).
Note: QDM Attribute: Route
 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-30231).
12. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3372-30224).
Note: QDM Attribute: Dosage

13. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-29053) such that it
- SHALL** contain exactly one [1..1] @typeCode="CSM" Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-29054).
 - SHALL** contain exactly one [1..1] **role** (CONF:3372-29055).
 - This role **SHALL** contain exactly one [1..1] @classCode="MANU" Manufactured (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-29056).
 - This role **SHALL** contain exactly one [1..1] **playingMaterial** (CONF:3372-29057).
 - This playingMaterial **SHALL** contain exactly one [1..1] @classCode="MMAT" Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-29058).
 - This playingMaterial **SHALL** contain exactly one [1..1] @determinerCode="KIND" Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-29059).
 - This playingMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3372-29060).
- Note: QDM Attribute: Code
- This code **SHOULD** contain zero or one [0..1] @valueSet (CONF:3372-30164).
14. **MAY** contain zero or one [0..1] **participation** (CONF:3372-33441) such that it
- SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-33444).
 - SHALL** contain exactly one [1..1] **time** (CONF:3372-33442).
 - This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-33500).
Note: QDM Attribute: Author dateTime
 - SHALL** contain exactly one [1..1] **role** (CONF:3372-33592).
 - This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CONF:3372-33593).
 - This role **MAY** contain zero or one [0..1] **id** (CONF:3372-33594).
15. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34860) such that it
- SHALL** contain exactly one [1..1] @typeCode="LOC" Location (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34862).
 - SHALL** contain exactly one [1..1] **role** (CONF:3372-34861).
 - This role **SHALL** contain exactly one [1..1] @classCode="EXLOC" event location (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34863).
 - This role **SHALL** contain exactly one [1..1] **code** (CONF:3372-34864).
Note: QDM Attribute:Setting - Where the medication is expected to be consumed or administered.
16. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-30190) such that it
Note: QDM Attribute: Reason

- a. **SHALL** contain exactly one [1..1] @typeCode="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-30191).
 - b. **SHALL** contain exactly one [1..1] Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-30192).
17. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-34451) such that it Note: QDM Attribute: Supply
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34452).
 - b. **SHALL** contain exactly one [1..1] Supply (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01) (CONF:3372-34818).

Figure 42: Medication, Order (V3) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.51" extension="2018-05-01"/>
  </templateId>
  <id root="27beb8e3-7c86-48cf-b430-235b72786dea"/>
  <title value="Medication, Order"/>
  <statusCode code="active"/>
  <participation typeCode="CSM">
    <role classCode="MANU">
      <playingMaterial classCode="MMAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.39 Patient Care Experience

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.52:2017-05-01 (open)]

Table 89: Patient Care Experience Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Patient Care Experience.

Data elements that meet this criterion indicate the patient's care experience, usually measured with a validated survey tool. The most common tool is the Consumer Assessment of Healthcare Providers and Systems.

Timing: The time the care experience is recorded; author time

Table 90: Patient Care Experience Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.52:2017-05-01)					
@classCode	1..1	SHALL		3335-32204	OBS
@moodCode	1..1	SHALL		3335-32205	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34707	
templateId	1..1	SHALL		3335-32206	
item	1..1	SHALL		3335-32207	
@root	1..1	SHALL		3335-32208	2.16.840.1.113883.10.20.28.4.5 2
@extension	1..1	SHALL		3335-33700	2017-05-01
id	1..1	SHALL		3335-32209	
code	1..1	SHALL		3335-32210	
@code	1..1	SHALL		3335-32211	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 406193000
@codeSystem	1..1	SHALL		3335-32212	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT)
title	1..1	SHALL		3335-32213	
statusCode	1..1	SHALL		3335-32216	
@code	1..1	SHALL		3335-32217	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3335-34388	
low	1..1	SHALL		3335-34389	
value	1..1	SHALL	CD	3335-32214	
@valueSet	0..1	SHOULD		3335-32215	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-32204).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-32205).
3. **SHALL NOT** contain [0..0] @actionNegationInd (CONF:3335-34707).
4. **SHALL** contain exactly one [1..1] templateId (CONF:3335-32206).

- a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-32207) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.52"** (CONF:3335-32208).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-33700).
- 5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-32209).
- 6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-32210).
 - a. This code **SHALL** contain exactly one [1..1] **@code="406193000"** Patient Satisfaction (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-32211).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-32212).
- 7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-32213).
- 8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-32216).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-32217).
- 9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3335-34388) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3335-34389).

Note: QDM Attribute: Author dateTime (The time the care experience is recorded)
- 10. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:3335-32214).

Note: QDM Attribute: Code

 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-32215).

Figure 43: Patient Care Experience Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.52" extension="2017-05-01"/>
  </templateId>
  <id root="5d852a88-4e5f-4a13-b29f-6798ad42d192"/>
  <code code="406193000" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Patient Satisfaction"/>
  </code>
  <title value="Patient Care Experience"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.40 Patient Characteristic (V2)

[observationCriteria: identifier

urn:hl7ii:2.16.840.1.113883.10.20.28.4.53:2017-08-01 (open)]

Table 91: Patient Characteristic (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Patient Characteristic.

Timing: The time the characteristic is authored.

Table 92: Patient Characteristic (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.53:2017-08-01)					
@classCode	1..1	SHALL		3346-31602	OBS
@moodCode	1..1	SHALL		3346-31603	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3346-31604	
templateId	1..1	SHALL		3346-31605	
item	1..1	SHALL		3346-31606	
@root	1..1	SHALL		3346-31607	2.16.840.1.113883.10.20.28.4.5 3
@extension	1..1	SHALL		3346-34456	2017-08-01
id	1..1	SHALL		3346-31608	
code	1..1	SHALL		3346-31609	
@valueSet	0..1	SHOULD		3346-34454	
statusCode	1..1	SHALL		3346-31613	
@code	1..1	SHALL		3346-31614	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-31615	
low	1..1	SHALL		3346-31616	
value	0..1	MAY		3346-34455	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3346-31602).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-31603).
3. **SHALL NOT** contain [0..0] @actionNegationInd (CONF:3346-31604).
4. **SHALL** contain exactly one [1..1] templateId (CONF:3346-31605).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3346-31606) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.53" (CONF:3346-31607).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-34456).

5. **SHALL** contain exactly one [1..1] **id** (CONF:3346-31608).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3346-31609).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-34454).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-31613).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-31614).
8. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-31615) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3346-31616).
Note: QDM Attribute: Author dateTime (The time the characteristic is authored)
9. **MAY** contain zero or one [0..1] **value** (CONF:3346-34455).

Figure 44: Patient Characteristic (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.53" extension="2017-08-01"/>
  </templateId>
  <id root="35cf9fd6-0d3d-4f86-91bf-a87fbf5ba8ef"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <statusCode code="completed"/>
</observationCriteria>
```

5.41 Patient Characteristic Birth Date

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.54:2017-05-01 (open)]

Table 93: Patient Characteristic Birth Date Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Patient Characteristic Birth Date.

Timing: The Patient Characteristic, Birthdate is a single point in time representing the date and time of birth. It does not have a start and stop time.

Table 94: Patient Characteristic Birth Date Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.54:2017-05-01)					
@classCode	1..1	SHALL		3335-31550	OBS
@moodCode	1..1	SHALL		3335-31551	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34706	
templateId	1..1	SHALL		3335-31552	
item	1..1	SHALL		3335-31553	
@root	1..1	SHALL		3335-31554	2.16.840.1.113883.10.20.28.4.54
@extension	1..1	SHALL		3335-33650	2017-05-01
id	1..1	SHALL		3335-31555	
code	1..1	SHALL		3335-31556	
@code	1..1	SHALL		3335-31557	21112-8
@codeSystem	1..1	SHALL		3335-31558	2.16.840.1.113883.6.1
title	1..1	SHALL		3335-31559	
statusCode	1..1	SHALL		3335-31583	
@code	1..1	SHALL		3335-31584	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3335-31562	
low	1..1	SHALL		3335-31563	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3335-31550).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31551).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3335-34706).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-31552).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-31553) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.54"** (CONF:3335-31554).

- ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33650).
- 5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-31555).
- 6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-31556).
 - a. This code **SHALL** contain exactly one [1..1] @code="21112-8" Birth Date (CONF:3335-31557).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CONF:3335-31558).
- 7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-31559).
- 8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31583).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31584).
- 9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3335-31562) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3335-31563).

Note: QDM Attribute: Birth dateTime (A single point in time representing the date and time of birth)

Figure 45: Patient Characteristic Birth Date Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.54" extension="2017-05-01"/>
  </templateId>
  <id root="b591e825-d308-4f9e-9798-098bbd880975"/>
  <code code="21112-8" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="Birth Date"/>
  </code>
  <title value="Patient Characteristic Birth Date"/>
  <statusCode code="completed"/>
</observationCriteria>
```

5.42 Patient Characteristic Clinical Trial Participant

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.6:2017-05-01 (open)]

Table 95: Patient Characteristic Clinical Trial Participant Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Patient Characteristic Clinical Trial Participant.

This template represents that a patient is a participant in a clinical trial.

Timing: The Relevant Period addresses: startTime – The time the clinical trial began; stopTime – The time the clinical trial ended.

Table 96: Patient Characteristic Clinical Trial Participant Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.6:2017-05-01)					
@classCode	1..1	SHALL		3335-31565	OBS
@moodCode	1..1	SHALL		3335-31566	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34705	
templateId	1..1	SHALL		3335-31567	
item	1..1	SHALL		3335-31568	
@root	1..1	SHALL		3335-31569	2.16.840.1.113883.10.20.28.4.6
@extension	1..1	SHALL		3335-33706	2017-05-01
id	1..1	SHALL		3335-31570	
code	1..1	SHALL		3335-31571	
@code	1..1	SHALL		3335-31572	ASSERTION
@codeSystem	1..1	SHALL		3335-31573	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode)
title	1..1	SHALL		3335-31574	
statusCode	1..1	SHALL		3335-31575	
@code	1..1	SHALL		3335-31576	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3335-31577	
low	0..1	MAY		3335-31578	
high	0..1	MAY		3335-31579	
value	1..1	SHALL	CD	3335-31580	
@valueSet	0..1	SHOULD		3335-31739	
outboundRelationship	0..1	MAY		3335-31620	
@typeCode	1..1	SHALL		3335-31621	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON

observationCriteria	1..1	SHALL		3335-31622	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)
---------------------	------	-------	--	----------------------------	--------------------------------------------------------------------------------------------

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CONF:3335-31565).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-31566).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3335-34705).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-31567).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-31568) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.6" (CONF:3335-31569).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2017-05-01" (CONF:3335-33706).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-31570).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-31571).
 - a. This code **SHALL** contain exactly one [1..1] **@code**="ASSERTION" Assertion (CONF:3335-31572).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3335-31573).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-31574).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31575).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31576).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3335-31577) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3335-31578).
Note: startTime (The time the clinical trial began)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3335-31579).
Note: stopTime (The time the clinical trial ended)
10. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3335-31580).
Note: QDM Attribute: Code
 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-31739).
11. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-31620) such that it
Note: QDM Attribute: Reason
 - a. **SHALL** contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-31621).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: [urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01](#)) (CONF:3335-31622).

Figure 46: Patient Characteristic Clinical Trial Participant Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.6" extension="2017-05-01"/>
  </templateId>
  <id root="c881c7cd-5ecf-4060-93c7-fbc8d1ab4500"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4">
    <displayName value="Assertion"/>
  </code>
  <title value="Patient Characteristic Clinical Trial Participant"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="${QDMElementValueSetOID}"/>
</observationCriteria>
```

5.43 Patient Characteristic Ethnicity

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.56:2017-05-01 (open)]

Table 97: Patient Characteristic Ethnicity Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Patient Characteristic Ethnicity.

This template represents a patient's ethnicity.

Table 98: Patient Characteristic Ethnicity Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.56:2017-05-01)					
@classCode	1..1	SHALL		3335-28168	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3335-28169	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34704	
templateId	1..1	SHALL		3335-28171	
item	1..1	SHALL		3335-28172	
@root	1..1	SHALL		3335-28173	2.16.840.1.113883.10.20.28.4.56
@extension	1..1	SHALL		3335-34654	2017-05-01
id	1..1	SHALL		3335-34714	
code	1..1	SHALL		3335-28174	
@code	1..1	SHALL		3335-28175	54133-4
@codeSystem	1..1	SHALL		3335-28176	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		3335-28179	
statusCode	1..1	SHALL		3335-31180	
@code	1..1	SHALL		3335-31181	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3335-28180	
@valueSet	0..1	SHOULD		3335-31182	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3335-28168).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-28169).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3335-34704).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-28171).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-28172) such that it

- i. This item **SHALL** contain exactly one [1..1]
 @root="2.16.840.1.113883.10.20.28.4.56" (CONF:3335-28173).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34654).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-34714).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-28174).
- a. This code **SHALL** contain exactly one [1..1] @code="54133-4" Ethnicity (CONF:3335-28175).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3335-28176).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-28179).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31180).
- a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31181).
9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3335-28180).
Note: QDM Attribute: Code
- a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3335-31182).

Figure 47: Patient Characteristic Ethnicity Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.56" extension="2017-05-01"/>
  </templateId>
  <id root="a719b01b-55a7-43e9-93bb-40e765affd7b"/>
  <code code="54133-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="Ethnicity"/>
  </code>
  <title value="Patient Characteristic Ethnicity"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.44 Patient Characteristic Expired

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.57:2017-05-01 (open)]

Table 99: Patient Characteristic Expired Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Cause (optional)

This template represents the QDM data type: Patient Characteristic Expired.

Timing: The Patient Characteristic, Expired is a single point in time representing the date and time of death. It does not have a start and stop time.

Table 100: Patient Characteristic Expired Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.57:2017-05-01)					
@classCode	1..1	SHALL		3335-31585	OBS
@moodCode	1..1	SHALL		3335-31586	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34709	
templateId	1..1	SHALL		3335-31587	
item	1..1	SHALL		3335-31588	
@root	1..1	SHALL		3335-313141	2.16.840.1.113883.10.20.28.4.5 7
@extension	1..1	SHALL		3335-33381	2017-05-01
id	1..1	SHALL		3335-31590	
code	1..1	SHALL		3335-31591	
@code	1..1	SHALL		3335-31592	ASSERTION
@codeSystem	1..1	SHALL		3335-31593	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
title	1..1	SHALL		3335-31594	
statusCode	1..1	SHALL		3335-31595	
@code	1..1	SHALL		3335-31596	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3335-31597	
low	1..1	SHALL		3335-31623	
value	1..1	SHALL	CD	3335-31600	
@code	1..1	SHALL		3335-33429	419099009
@codeSystem	1..1	SHALL		3335-33430	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
outboundRelationship	0..1	MAY		3335-33450	
@typeCode	1..1	SHALL		3335-	urn:oid:2.16.840.1.113883.5.10

				33451	02 (HL7ActRelationshipType) = CAUS
@inversionInd	1..1	SHALL		3335-33676	true
observationCriteria	1..1	SHALL		3335-33452	Cause (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.105:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CONF:3335-31585).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-31586).
3. **SHALL NOT** contain [0..0] **@actionNegationInd** (CONF:3335-34709).
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-31587).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-31588) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.28.4.57" (CONF:3335-33141).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension**="2017-05-01" (CONF:3335-33381).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-31590).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-31591).
 - a. This code **SHALL** contain exactly one [1..1] **@code**="ASSERTION" Assertion (CONF:3335-31592).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3335-31593).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-31594).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31595).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31596).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3335-31597) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3335-31623).

Note: QDM Attribute: Expiration dateDateTime (A single point in time representing the date and time of death)
10. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD" (CONF:3335-31600).
 - a. This value **SHALL** contain exactly one [1..1] **@code**="419099009" Dead (CONF:3335-33429).
 - b. This value **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-33430).
11. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3335-33450) such that it

Note: QDM Attribute: Cause

 - a. **SHALL** contain exactly one [1..1] **@typeCode**="CAUS" Cause (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3335-33451).

- b. **SHALL** contain exactly one [1..1] @inversionInd="true" (CONF:3335-33676).
- c. **SHALL** contain exactly one [1..1] **Cause** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.105:2017-05-01) (CONF:3335-33452).

Figure 48: Patient Characteristic Expired Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.57" extension="2017-05-01"/>
  </templateId>
  <id root="6b9cb746-991a-45b1-a0ea-e511e0a38a41"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4">
    <displayName value="Assertion"/>
  </code>
  <title value="Patient Characteristic Expired"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" code="419099009" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED CT">
    <displayName value="Dead"/>
  </value>
</observationCriteria>
```

5.45 Patient Characteristic Payer

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.58:2017-05-01 (open)]

Table 101: Patient Characteristic Payer Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Patient Characteristic Payer.

This template represents a patient's payment source.

Timing: The Relevant Period addresses: startTime – The first day of insurance coverage with the referenced payer; stopTime – The last day of insurance coverage with the referenced payer.

Table 102: Patient Characteristic Payer Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.58:2017-05-01)					
@classCode	1..1	SHALL		3335-31627	OBS
@moodCode	1..1	SHALL		3335-31628	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34710	
templateId	1..1	SHALL		3335-31629	
item	1..1	SHALL		3335-31630	
@root	1..1	SHALL		3335-31631	2.16.840.1.113883.10.20.28.4.5 8
@extension	1..1	SHALL		3335-34457	2017-05-01
id	1..1	SHALL		3335-31632	
code	1..1	SHALL		3335-31633	
@code	1..1	SHALL		3335-31634	48768-6
@codeSystem	1..1	SHALL		3335-31635	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		3335-31636	
statusCode	1..1	SHALL		3335-31637	
@code	1..1	SHALL		3335-31643	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3335-31638	
low	0..1	MAY		3335-31641	
high	0..1	MAY		3335-31642	
value	1..1	SHALL	CD	3335-31639	
@valueSet	0..1	SHOULD		3335-31640	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-31627).

2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-31628).
3. **SHALL NOT** contain [0..0] @actionNegationInd (CONF:3335-34710).
4. **SHALL** contain exactly one [1..1] templateId (CONF:3335-31629).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3335-31630) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.58" (CONF:3335-31631).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34457).
5. **SHALL** contain exactly one [1..1] id (CONF:3335-31632).
6. **SHALL** contain exactly one [1..1] code (CONF:3335-31633).
 - a. This code **SHALL** contain exactly one [1..1] @code="48768-6" Payment Source (CONF:3335-31634).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3335-31635).
7. **SHALL** contain exactly one [1..1] title (CONF:3335-31636).
8. **SHALL** contain exactly one [1..1] statusCode (CONF:3335-31637).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31643).
9. **MAY** contain zero or one [0..1] effectiveTime (CONF:3335-31638) such that it

Note: QDM Attribute: Relevant Period

 - a. **MAY** contain zero or one [0..1] low (CONF:3335-31641).

Note: startTime (The first day of insurance coverage with the referenced payer)
 - b. **MAY** contain zero or one [0..1] high (CONF:3335-31642).

Note: stopTime (The last day of insurance coverage with the referenced payer)
10. **SHALL** contain exactly one [1..1] value with @xsi:type="CD" (CONF:3335-31639).

Note: QDM Attribute: Code

 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3335-31640).

Figure 49: Patient Characteristic Payer Example

```

<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.58" extension="2017-05-01"/>
  </templateId>
  <id root="ca3b4435-8cb4-499a-8ccd-db955364764e"/>
  <code code="48768-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="Payer"/>
  </code>
  <title value="Patient Characteristic Payer"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>

```

5.46 Patient Characteristic Race

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.59:2017-05-01 (open)]

Table 103: Patient Characteristic Race Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Patient Characteristic Race.

This template represents a patient's race.

Table 104: Patient Characteristic Race Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.59:2017-05-01)					
@classCode	1..1	SHALL		3335-31236	OBS
@moodCode	1..1	SHALL		3335-31237	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34711	
templateId	1..1	SHALL		3335-31238	
item	1..1	SHALL		3335-31239	
@root	1..1	SHALL		3335-31240	2.16.840.1.113883.10.20.28.4.5 9
@extension	1..1	SHALL		3335-34655	2017-05-01
id	1..1	SHALL		3335-31241	
code	1..1	SHALL		3335-31242	
@code	1..1	SHALL		3335-31243	32624-9
@codeSystem	1..1	SHALL		3335-31244	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		3335-31245	
statusCode	1..1	SHALL		3335-31246	
@code	1..1	SHALL		3335-31247	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3335-31248	
@valueSet	0..1	SHOULD		3335-31249	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-31236).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-31237).
3. **SHALL NOT** contain [0..0] @actionNegationInd (CONF:3335-34711).
4. **SHALL** contain exactly one [1..1] templateId (CONF:3335-31238).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3335-31239) such that it

- i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.59" (CONF:3335-31240).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34655).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-31241).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-31242).
- a. This code **SHALL** contain exactly one [1..1] @code="32624-9" Race (CONF:3335-31243).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3335-31244).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-31245).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31246).
- a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-31247).
9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3335-31248).
- Note: QDM Attribute: Code
- a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3335-31249).

Figure 50: Patient Characteristic Race Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.59" extension="2017-05-01"/>
  </templateId>
  <id root="5cabdd9d-cd97-47a2-8f15-a4a17c941d8c"/>
  <code code="32624-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="Race"/>
  </code>
  <title value="Patient Characteristic Race"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.47 Patient Characteristic Sex

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.55:2017-05-01 (open)]

Table 105: Patient Characteristic Sex Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Patient Characteristic Sex.

This template represents a patient's sex.

Table 106: Patient Characteristic Sex Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.55:2017-05-01)					
@classCode	1..1	SHALL		3335-31282	OBS
@moodCode	1..1	SHALL		3335-31283	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34712	
templateId	1..1	SHALL		3335-31284	
item	1..1	SHALL		3335-31285	
@root	1..1	SHALL		3335-31286	2.16.840.1.113883.10.20.28.4.5
@extension	1..1	SHALL		3335-33382	2017-05-01
id	1..1	SHALL		3335-31287	
code	1..1	SHALL		3335-31288	
@code	1..1	SHALL		3335-31289	263495000
@codeSystem	1..1	SHALL		3335-31290	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3335-31291	
statusCode	1..1	SHALL		3335-31292	
@code	1..1	SHALL		3335-33142	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = completed
value	1..1	SHALL	CD	3335-31293	
@valueSet	1..1	SHOULD		3335-31294	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-31282).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-31283).
3. **SHALL NOT** contain [0..0] @actionNegationInd (CONF:3335-34712).
4. **SHALL** contain exactly one [1..1] templateId (CONF:3335-31284).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3335-31285) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.55" (CONF:3335-31286).

- ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33382).
- 5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-31287).
- 6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-31288).
 - a. This code **SHALL** contain exactly one [1..1] @code="263495000" Gender (CONF:3335-31289).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-31290).
- 7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-31291).
- 8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-31292).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3335-33142).
- 9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3335-31293).

Note: QDM Attribute: Code

 - a. This value **SHOULD** contain exactly one [1..1] @valueSet (CONF:3335-31294).

Figure 51: Patient Characteristic Sex Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.55" extension="2017-05-01"/>
  </templateId>
  <id root="4d3b1027-eb4b-4081-9093-e056acfd12ba"/>
  <code code="263495000" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Gender"/>
  </code>
  <title value="Patient Characteristic Sex"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.48 Physical Exam, Order (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.61:2018-05-01 (open)]

Table 107: Physical Exam, Order (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Physical Exam, Order.

Physical Exam represents the evaluation of the patient's body to determine its state of health. The techniques of inspection include palpation (feeling with the hands or fingers), percussion (tapping with the fingers), auscultation (listening), visual inspection, and smell. Measurements may include vital signs (blood pressure, pulse, respiration) as well as other clinical measures

(such as expiratory flow rate and size of lesion). Physical exam includes psychiatric examinations.

Timing: The time the order is signed; author datetime.

Table 108: Physical Exam, Order (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.61:2018-05-01)					
@classCode	1..1	SHALL		3372-31405	OBS
@moodCode	1..1	SHALL		3372-31406	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3372-31407	
templateId	1..1	SHALL		3372-31408	
item	1..1	SHALL		3372-31409	
@root	1..1	SHALL		3372-31410	2.16.840.1.113883.10.20.28.4.6 1
@extension	1..1	SHALL		3372-33437	2018-05-01
id	1..1	SHALL		3372-31411	
code	1..1	SHALL		3372-31412	
@code	1..1	SHALL		3372-31434	5880005
@codeSystem	1..1	SHALL		3372-31435	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3372-31413	
statusCode	1..1	SHALL		3372-31414	
@code	1..1	SHALL		3372-31415	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
value	1..1	SHALL	CD	3372-31437	
@valueSet	0..1	SHOULD		3372-31438	
targetSiteCode	0..1	MAY		3372-31422	
item	0..1	SHOULD		3372-31423	
@valueSet	0..1	SHOULD		3372-31424	
participation	0..1	MAY		3372-33501	
@typeCode	1..1	SHALL		3372-33503	AUT

time	1..1	SHALL		3372-33502	
low	1..1	SHALL		3372-33504	
role	1..1	SHALL		3372-33595	
@classCode	1..1	SHALL		3372-33596	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3372-33597	
outboundRelationship	0..1	MAY		3372-31431	
@typeCode	1..1	SHALL		3372-31432	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-31433	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3372-31405).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-31406).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-31407).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-31408).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-31409) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.61"** (CONF:3372-31410).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33437).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-31411).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-31412).
 - a. This code **SHALL** contain exactly one [1..1] **@code="5880005"** Physical Examination (CONF:3372-31434).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.6.96"** (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3372-31435).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-31413).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-31414).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-31415).
9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3372-31437).
Note: QDM Attribute: Code
 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31438).

10. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:3372-31422).

Note: QDM Attribute: Anatomical Location Site

- a. The targetSiteCode, if present, **SHOULD** contain zero or one [0..1] **item** (CONF:3372-31423).

- i. The item, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31424).

11. **MAY** contain zero or one [0..1] **participation** (CONF:3372-33501) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CONF:3372-33503).
- b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-33502).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-33504).

Note: QDM Attribute: Author date/Time (The time the order is signed)

- c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-33595).

- i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-33596).

- ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-33597).

12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31431) such that it

Note: QDM Attribute: Reason

- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-31432).

- b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-31433).

Figure 52: Physical Exam, Order (V2) Example

```
<observationCriteria classCode="OBS" moodCode="RQO">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.61" extension="2018-05-01"/>
    </templateId>
    <id root="ae06f4b8-668d-45a9-acd4-28cff4ef6d45"/>
    <code code="5880005" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
        <displayName value="Physical Examination"/>
    </code>
    <title value="Physical Exam Order"/>
    <statusCode code="active"/>
    <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.49 Physical Exam, Performed (V2)

[observationCriteria: identifier

urn:hl7ii:2.16.840.1.113883.10.20.28.4.62:2017-08-01 (open)]

Table 109: Physical Exam, Performed (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Component (optional) Result (V2) (optional)

This template represents the QDM data type: Physical Exam, Performed.

This represents that a physical exam has been completed.

Timing: The Relevant Period addresses: startTime – The time the physical examination activity begins; stopTime – The time the physical examination activity ends.

QDM Attribute: Result is represented using the Result (V2) template.

Table 110: Physical Exam, Performed (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.62:2017-08-01)					
@classCode	1..1	SHALL		3346-31251	OBS
@moodCode	1..1	SHALL		3346-31252	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3346-31253	
templateId	1..1	SHALL		3346-31254	
item	1..1	SHALL		3346-31255	
@root	1..1	SHALL		3346-31256	2.16.840.1.113883.10.20.28.4.6 2
@extension	1..1	SHALL		3346-33428	2017-08-01
id	1..1	SHALL		3346-31257	
code	1..1	SHALL		3346-31258	
@code	1..1	SHALL		3346-31439	5880005
@codeSystem	1..1	SHALL		3346-31440	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3346-31260	
statusCode	1..1	SHALL		3346-31261	
@code	1..1	SHALL		3346-31262	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-31263	
low	0..1	MAY		3346-31264	
high	0..1	MAY		3346-31265	
value	1..1	SHALL	CD	3346-31441	
@valueSet	0..1	SHOULD		3346-31442	
methodCode	0..1	MAY		3346-31267	
item	1..1	SHALL		3346-31268	

@valueSet	0..1	SHOULD		3346-31269	
targetSiteCode	0..1	MAY		3346-31270	
item	0..1	SHOULD		3346-31271	
@valueSet	0..1	SHOULD		3346-31272	
participation	0..1	MAY		3346-34549	
@typeCode	1..1	SHALL		3346-34552	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3346-34550	
low	1..1	SHALL		3346-34553	
role	1..1	SHALL		3346-34551	
@classCode	1..1	SHALL		3346-34554	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3346-34555	
outboundRelationship	0..1	MAY		3346-31279	
@typeCode	1..1	SHALL		3346-31280	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3346-33448	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01
outboundRelationship	0..1	MAY		3346-33614	
@typeCode	1..1	SHALL		3346-33615	VALUE
observationCriteria	1..1	SHALL		3346-33616	Result (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.101:2017-08-01
outboundRelationship	0..*	MAY		3346-34621	
@typeCode	1..1	SHALL		3346-34622	REFR
observationCriteria	1..1	SHALL		3346-34623	Component (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.121:2017-05-01

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3346-31251).

2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-31252).
3. **MAY** contain zero or one [0..1] @actionNegationInd (CONF:3346-31253).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] templateId (CONF:3346-31254).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3346-31255) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.62" (CONF:3346-31256).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33428).
5. **SHALL** contain exactly one [1..1] id (CONF:3346-31257).
6. **SHALL** contain exactly one [1..1] code (CONF:3346-31258).
 - a. This code **SHALL** contain exactly one [1..1] @code="5880005" Physical Examination (CONF:3346-31439).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-31440).
7. **SHALL** contain exactly one [1..1] title (CONF:3346-31260).
8. **SHALL** contain exactly one [1..1] statusCode (CONF:3346-31261).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-31262).
9. **MAY** contain zero or one [0..1] effectiveTime (CONF:3346-31263) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] low (CONF:3346-31264).
Note: startTime (The time the physical examination activity begins)
 - b. **MAY** contain zero or one [0..1] high (CONF:3346-31265).
Note: stopTime (The time the physical examination activity ends)
10. **SHALL** contain exactly one [1..1] value with @xsi:type="CD" (CONF:3346-31441).
Note: QDM Attribute: Code
 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-31442).
11. **MAY** contain zero or one [0..1] methodCode (CONF:3346-31267).
Note: QDM Attribute: Method
 - a. The methodCode, if present, **SHALL** contain exactly one [1..1] item (CONF:3346-31268).
 - i. This item **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-31269).
12. **MAY** contain zero or one [0..1] targetSiteCode (CONF:3346-31270).
Note: QDM Attribute: Anatomical Location Site
 - a. The targetSiteCode, if present, **SHOULD** contain zero or one [0..1] item (CONF:3346-31271).
 - i. The item, if present, **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-31272).
13. **MAY** contain zero or one [0..1] participation (CONF:3346-34549) such that it

- a. **SHALL** contain exactly one [1..1] @typeCode="AUT" Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3346-34552).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3346-34550).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3346-34553).
Note: QDM Attribute: Author dateTime
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3346-34551).
 - i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-34554).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3346-34555).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-31279) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] @typeCode="RSON" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-31280).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3346-33448).
15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-33614) such that it
Note: QDM Attribute: Result
- a. **SHALL** contain exactly one [1..1] @typeCode="VALUE" Has value (CONF:3346-33615).
 - b. **SHALL** contain exactly one [1..1] **Result (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01) (CONF:3346-33616).
16. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3346-34621) such that it
Note: QDM Attribute: Components
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CONF:3346-34622).
 - b. **SHALL** contain exactly one [1..1] **Component** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01) (CONF:3346-34623).

Figure 53: Physical Exam, Performed (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.62" extension="2017-08-01"/>
  </templateId>
  <id root="74a0af1f-15ed-4536-854f-79a066953e44"/>
  <code code="5880005" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Physical Examination"/>
  </code>
  <title value="Physical Exam, Performed"/>
  <statusCode code="completed"/>
  <effectiveTime xsi:type="IVL_TS"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.50 Physical Exam, Recommended (V2)

[observationCriteria: identifier

urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2018-05-01 (open)]

Table 111: Physical Exam, Recommended (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Physical Exam, Recommended.

This template captures a recommendation by a physician or appropriately licensed care provider for a physical exam to be performed on the patient.

Timing: The time the recommendation is authored (i.e., provided to the patient).

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Table 112: Physical Exam, Recommended (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2018-05-01)					
@classCode	1..1	SHALL		3372-31443	OBS
@moodCode	1..1	SHALL		3372-31444	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3372-31445	
templateId	1..1	SHALL		3372-31446	
item	1..1	SHALL		3372-31447	
@root	1..1	SHALL		3372-31448	2.16.840.1.113883.10.20.28.4.6 1
@extension	1..1	SHALL		3372-33449	2018-05-01
id	1..1	SHALL		3372-31449	
code	1..1	SHALL		3372-31450	
@code	1..1	SHALL		3372-31451	5880005
@codeSystem	1..1	SHALL		3372-31452	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3372-31453	
statusCode	1..1	SHALL		3372-31454	
@code	1..1	SHALL		3372-31455	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
value	1..1	SHALL	CD	3372-31459	
@valueSet	0..1	SHOULD		3372-31460	
targetSiteCode	0..1	MAY		3372-31464	
item	0..1	SHOULD		3372-31465	
@valueSet	0..1	SHOULD		3372-31466	
participation	0..1	MAY		3372-34458	
@typeCode	1..1	SHALL		3372-34461	AUT

time	1..1	SHALL		3372-34459	
low	1..1	SHALL		3372-34462	
role	1..1	SHALL		3372-34460	
@classCode	1..1	SHALL		3372-34463	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34464	
outboundRelationship	0..1	MAY		3372-31473	
@typeCode	1..1	SHALL		3372-31474	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-31475	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3372-31443).
2. **SHALL** contain exactly one [1..1] **@moodCode="INT"** intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-31444).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-31445).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-31446).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-31447) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.61"** (CONF:3372-31448).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33449).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-31449).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-31450).
 - a. This code **SHALL** contain exactly one [1..1] **@code="5880005"** Physical Examination (CONF:3372-31451).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.6.96"** (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3372-31452).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-31453).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-31454).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-31455).
9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3372-31459).
Note: QDM Attribute: Code
 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31460).

10. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:3372-31464).

Note: QDM Attribute: Anatomical Location Site

- a. The targetSiteCode, if present, **SHOULD** contain zero or one [0..1] **item** (CONF:3372-31465).

- i. The item, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31466).

11. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34458) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CONF:3372-34461).
- b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34459).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34462).

Note: QDM Attribute: Author dateTime (The time the recommendation is authored)

- c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34460).

- i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34463).

- ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34464).

12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31473) such that it

Note: QDM Attribute: Reason

- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-31474).
- b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-31475).

Figure 54: Physical Exam, Recommended (V2) Example

```
<observationCriteria classCode="OBS" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.63" extension="2018-05-01"/>
  </templateId>
  <id root="2ba56315-4f6f-4141-be6c-0248d8dfdbfc"/>
  <code code="5880005" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Physical Examination"/>
  </code>
  <title value="Physical Exam Recommended"/>
  <statusCode code="active"/>
  <effectiveTime xsi:type="IVL_TS"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.51 Principal Diagnosis

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.122:2017-05-01 (open)]

Table 113: Principal Diagnosis Contexts

Contained By:	Contains:
Encounter, Performed (V2) (optional)	

The coded diagnosis/problem established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care.

Table 114: Principal Diagnosis Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.122:2017-05-01)					
@classCode	1..1	SHALL		3335-34367	OBS
@moodCode	1..1	SHALL		3335-34368	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3335-34348	
item	1..1	SHALL		3335-34349	
@root	1..1	SHALL		3335-34358	2.16.840.1.113883.10.20.28.4.122
@extension	1..1	SHALL		3335-34651	2017-05-01
id	1..1	SHALL		3335-34369	
code	1..1	SHALL		3335-34350	
@code	1..1	SHALL		3335-34360	52534-5
@codeSystem	1..1	SHALL		3335-34361	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		3335-34370	
statusCode	1..1	SHALL		3335-34351	
@code	1..1	SHALL		3335-34362	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3335-34353	
@valueSet	0..1	SHOULD		3335-34365	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-34367).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-34368).
3. **SHALL** contain exactly one [1..1] templateId (CONF:3335-34348).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3335-34349) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.122" (CONF:3335-34358).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34651).
4. **SHALL** contain exactly one [1..1] id (CONF:3335-34369).

5. **SHALL** contain exactly one [1..1] **code** (CONF:3335-34350).
 - a. This code **SHALL** contain exactly one [1..1] @code="52534-5" Principal Diagnosis (CONF:3335-34360).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3335-34361).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3335-34370).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-34351).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-34362).
8. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3335-34353).
 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3335-34365).

Figure 55: Principal Diagnosis Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.122" extension="2017-05-01"/>
  </templateId>
  <id root="322b8dc5-4102-4e0d-bf15-fa9379f8c9ac"/>
  <code code="52534-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="SNOMED CT">
    <displayName value="Principal Diagnosis"/>
  </code>
  <title value="Principal Diagnosis"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.52 Procedure, Order (V3)

[ProcedureCriteria: identifier
 urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2018-05-01 (open)]

Table 115: Procedure, Order (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional)

This template represents the QDM data type: Procedure, Order.

A procedure may be a surgery or other type of physical manipulation of a person's body in whole or in part for purposes of making observations and diagnoses or providing treatment.

This template represents an order for a procedure.

Timing: The time the order is signed; author datetime.

Table 116: Procedure, Order (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
ProcedureCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2018-05-01)					
@classCode	1..1	SHALL		3372-33158	PROC
@moodCode	1..1	SHALL		3372-31120	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3372-31121	
templateId	1..1	SHALL		3372-31122	
item	1..1	SHALL		3372-31123	
@root	1..1	SHALL		3372-31124	2.16.840.1.113883.10.20.28.4.6 6
@extension	1..1	SHALL		3372-33422	2018-05-01
id	1..1	SHALL		3372-31125	
code	1..1	SHALL		3372-31126	
@valueSet	0..1	SHOULD		3372-31127	
title	1..1	SHALL		3372-31128	
statusCode	1..1	SHALL		3372-31129	
@code	1..1	SHALL		3372-33147	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = active
priorityCode	0..1	MAY		3372-31133	
item	0..1	SHOULD		3372-31134	
targetSiteCode	0..1	MAY		3372-33420	
item	1..1	SHALL		3372-33421	
@valueSet	0..1	SHOULD		3372-33424	
participation	0..1	MAY		3372-33506	
@typeCode	1..1	SHALL		3372-33508	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-33507	

low	1..1	SHALL		3372-33509	
role	1..1	SHALL		3372-33598	
@classCode	1..1	SHALL		3372-33599	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3372-33600	
outboundRelationship	0..1	MAY		3372-31143	
@typeCode	1..1	SHALL		3372-33148	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-31144	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="PROC"** Procedure (CONF:3372-33158).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-31120).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-31121).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-31122).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-31123) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.66"** (CONF:3372-31124).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33422).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-31125).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-31126).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31127).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-31128).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-31129).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-33147).
9. **MAY** contain zero or one [0..1] **priorityCode** (CONF:3372-31133).
Note: QDM Attribute: Ordinality
 - a. The priorityCode, if present, **SHOULD** contain zero or one [0..1] **item** (CONF:3372-31134).
10. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:3372-33420).
Note: QDM Attribute: Anatomical Location Site
 - a. The targetSiteCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3372-33421).

- i. This item **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33424).
11. **MAY** contain zero or one [0..1] **participation** (CONF:3372-33506) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-33508).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-33507).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-33509).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-33598).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-33599).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-33600).
12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31143) such that it
Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-33148).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-31144).
Note: QDM Attribute: Reason

Figure 56: Procedure, Order (V3) Example

```
<procedureCriteria classCode="PROC" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.66" extension="2018-05-01"/>
  </templateId>
  <id root="7d559e0a-4e01-4f52-b87b-a3342705e2f2"/>
  <code valueSet="{$QDMElementValueSetOID}"/>
  <title value="Procedure, Order"/>
  <statusCode code="active"/>
</procedureCriteria>
```

5.53 Procedure, Performed (V3)

[ProcedureCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2018-05-01 (open)]

Table 117: Procedure, Performed (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Component (optional) Incision Datetime (optional) Result (V2) (optional) Status (V2) (optional)

This template represents the QDM data type: Procedure, Performed.

A procedure may be a surgery or other type of physical manipulation of a person's body in whole or in part for purposes of making observations and diagnoses or providing treatment.

This template represents a procedure that has been performed.

Timing: The Relevant Period addresses: StartTime = the time the procedure begins; StopTime = the time the procedure is completed.

Table 118: Procedure, Performed (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
ProcedureCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2018-05-01)					
@classCode	1..1	SHALL		3372-31349	PROC
@moodCode	1..1	SHALL		3372-31336	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3372-31337	
templateId	1..1	SHALL		3372-31338	
item	1..1	SHALL		3372-31339	
@root	1..1	SHALL		3372-31340	2.16.840.1.113883.10.20.28.4.6 7
@extension	1..1	SHALL		3372-33398	2018-05-01
id	1..1	SHALL		3372-31341	
code	1..1	SHALL		3372-31342	
@valueSet	0..1	SHOULD		3372-31343	
title	1..1	SHALL		3372-31344	
statusCode	1..1	SHALL		3372-31345	
@code	1..1	SHALL		3372-313150	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = completed
effectiveTime	0..1	MAY	IVL_TS	3372-31346	
low	0..1	MAY		3372-31347	
high	0..1	MAY		3372-31348	
priorityCode	0..1	MAY		3372-31349	
item	1..1	SHALL		3372-31350	
@valueSet	0..1	SHOULD		3372-33151	
methodCode	0..1	MAY		3372-31351	
item	1..1	SHALL		3372-31352	

@valueSet	0..1	SHOULD		3372-31353	
targetSiteCode	0..1	MAY		3372-33401	
item	1..1	SHALL		3372-33402	
@valueSet	0..1	SHOULD		3372-33404	
participation	0..1	MAY		3372-34556	
@typeCode	1..1	SHALL		3372-34559	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34557	
low	1..1	SHALL		3372-34560	
role	1..1	SHALL		3372-34558	
@classCode	1..1	SHALL		3372-34561	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34562	
outboundRelationship	0..1	MAY		3372-31360	
@typeCode	1..1	SHALL		3372-31366	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-31361	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01
outboundRelationship	0..1	MAY		3372-31362	
@typeCode	1..1	SHALL		3372-31367	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
procedureCriteria	1..1	SHALL		3372-33153	Incision Datetime (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.89:2017-05-01
outboundRelationship	0..1	MAY		3372-31364	
@typeCode	1..1	SHALL		3372-31368	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = VALUE
observationCriteria	1..1	SHALL		3372-31365	Result (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.101:2017-08-01
outboundRelationship	0..1	MAY		3372-33408	

@typeCode	1..1	SHALL		3372-33409	REFR
observationCriteria	1..1	SHALL		3372-33410	Status (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01)
outboundRelationship	0..*	MAY		3372-34624	
@typeCode	1..1	SHALL		3372-34625	REFR
observationCriteria	1..1	SHALL		3372-34626	Component (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="PROC"** Procedure (CONF:3372-33149).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood [urn:oid:2.16.840.1.113883.5.1001](#)) (CONF:3372-31336).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-31337).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-31338).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-31339) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.67"** (CONF:3372-31340).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33398).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-31341).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-31342).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31343).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-31344).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-31345).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActCode [urn:oid:2.16.840.1.113883.5.4](#)) (CONF:3372-33150).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-31346) such that it
Note: QDM Attribute: Relevant Period
 - a. **MAY** contain zero or one [0..1] **low** (CONF:3372-31347).
Note: startTime (The time the procedure begins)
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3372-31348).
Note: stopTime (The time the procedure is completed)
10. **MAY** contain zero or one [0..1] **priorityCode** (CONF:3372-31349).
Note: QDM Attribute: Ordinality
 - a. The priorityCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3372-31350).
 - i. This item **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33151).

11. **MAY** contain zero or one [0..1] **methodCode** (CONF:3372-31351).

Note: QDM Attribute: Method

- a. The methodCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3372-31352).

- i. This item **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31353).

12. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:3372-33401).

Note: QDM Attribute: Anatomical Location Site

- a. The targetSiteCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3372-33402).

- i. This item **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33404).

13. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34556) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34559).
- b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34557).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34560).

Note: QDM Attribute: Author dateTime

- c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34558).

- i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34561).

- ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34562).

14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31360) such that it

Note: QDM Attribute: Reason

- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-31366).
- b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-31361).

15. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31362) such that it

Note: QDM Attribute: Incision dateTime

- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-31367).
- b. **SHALL** contain exactly one [1..1] **Incision Datetime** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.89:2017-05-01) (CONF:3372-33153).

16. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31364) such that it

Note: QDM Attribute: Result

- a. **SHALL** contain exactly one [1..1] **@typeCode="VALUE"** Has value (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-31368).
- b. **SHALL** contain exactly one [1..1] **Result (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01) (CONF:3372-31365).

17. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-33408) such that it

Note: QDM Attribute: Status

- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers to (CONF:3372-33409).
- b. **SHALL** contain exactly one [1..1] Status (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01) (CONF:3372-33410).

18. **MAY** contain zero or more [0..*] **outboundRelationship** (CONF:3372-34624) such that it

Note: QDM Attribute: Components

- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CONF:3372-34625).
- b. **SHALL** contain exactly one [1..1] Component (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01) (CONF:3372-34626).

Figure 57: Procedure, Performed (V3) Example

```
<procedureCriteria classCode="PROC" moodCode="EVN">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.67" extension="2018-05-01"/>
    </templateId>
    <id root="6cc25a38-8781-4d79-a580-6a83d1b33575"/>
    <code valueSet="{$QDMElementValueSetOID}"/>
    <title value="Procedure, Performed"/>
    <statusCode code="completed"/>
</procedureCriteria>
```

5.54 Procedure, Recommended (V2)

[ProcedureCriteria: identifier

urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2018-05-01 (open)]

Table 119: Procedure, Recommended (V2) Contexts

Contained By:	Contains:
<u>Data Criteria Section (V3)</u> (optional)	<u>Reason</u> (optional)

This template represents the QDM data type: Procedure, Recommended.

A procedure may be a surgery or other type of physical manipulation of a person's body in whole or in part for purposes of making observations and diagnoses or providing treatment.

This template represents a recommendation for a procedure.

Timing: The time the recommendation is authored (i.e., provided to the patient).

All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.

Table 120: Procedure, Recommended (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
ProcedureCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2018-05-01)					
@classCode	1..1	SHALL		3372-33154	PROC
@moodCode	1..1	SHALL		3372-31209	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3372-31210	
templateId	1..1	SHALL		3372-31211	
item	1..1	SHALL		3372-31212	
@root	1..1	SHALL		3372-31213	2.16.840.1.113883.10.20.28.4.6 8
@extension	1..1	SHALL		3372-33417	2018-05-01
id	1..1	SHALL		3372-31214	
code	1..1	SHALL		3372-31215	
@valueSet	0..1	SHOULD		3372-31216	
title	1..1	SHALL		3372-31217	
statusCode	1..1	SHALL		3372-31218	
@code	1..1	SHALL		3372-33155	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = completed
priorityCode	0..1	MAY		3372-31222	
item	1..1	SHALL		3372-31223	
@valueSet	0..1	SHOULD		3372-33156	
targetSiteCode	0..1	MAY		3372-33413	
item	1..1	SHALL		3372-33414	
@valueSet	0..1	SHOULD		3372-33416	
participation	0..1	MAY		3372-34465	
@typeCode	1..1	SHALL		3372-34468	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT

time	1..1	SHALL		3372-34466	
low	1..1	SHALL		3372-34469	
role	1..1	SHALL		3372-34467	
@classCode	1..1	SHALL		3372-34470	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34471	
outboundRelationship	0..1	MAY		3372-31233	
@typeCode	1..1	SHALL		3372-33157	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-31234	Reason (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)

1. **SHALL** contain exactly one [1..1] **@classCode="PROC"** Procedure (CONF:3372-33154).
2. **SHALL** contain exactly one [1..1] **@moodCode="INT"** Intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-31209).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-31210).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-31211).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-31212) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.68"** (CONF:3372-31213).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33417).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-31214).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-31215).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-31216).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-31217).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-31218).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-33155).
9. **MAY** contain zero or one [0..1] **priorityCode** (CONF:3372-31222).
Note: QDM Attribute: Ordinality
 - a. The priorityCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3372-31223).
 - i. This item **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33156).

10. **MAY** contain zero or one [0..1] **targetSiteCode** (CONF:3372-33413).

Note: QDM Attribute: Anatomical Location Site

- a. The targetSiteCode, if present, **SHALL** contain exactly one [1..1] **item** (CONF:3372-33414).
 - i. This item **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33416).

11. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34465) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34468).
- b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34466).

- i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34469).

Note: QDM Attribute: Author dateTIme (The time the recommendation is authored (i.e., provided to the patient))

- c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34467).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34470).

- ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34471).

12. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-31233) such that it

Note: QDM Attribute: Reason

- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-33157).
- b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-31234).

Figure 58: Procedure, Recommended (V2) Example

```
<procedureCriteria classCode="PROC" moodCode="INT">
    <templateId>
        <item root="2.16.840.1.113883.10.20.28.4.68" extension="2018-05-01"/>
    </templateId>
    <id root="7d559e0a-4e01-4f52-b87b-a3342705e2f2"/>
    <code valueSet="{$QDMElementValueSetOID}"/>
    <title value="Procedure, Recommended"/>
    <statusCode code="completed"/>
</procedureCriteria>
```

5.55 Program Participation (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.130:2018-05-01 (open)]

Table 121: Program Participation (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Participation

Participation represents a patient's coverage by a program such as an insurance or medical plan or a payment agreement. Such programs can include patient-centered medical home, disease-specific programs, etc.

Table 122: Program Participation (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.130:2018-05-01)					
@classCode	1..1	SHALL		3372-34829	OBS
@moodCode	1..1	SHALL		3372-34830	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3372-34831	
templateId	1..1	SHALL		3372-34819	
item	1..1	SHALL		3372-34820	
@root	1..1	SHALL		3372-34824	2.16.840.1.113883.10.20.28.4.1 30
@extension	1..1	SHALL		3372-34825	2018-05-01
id	1..1	SHALL		3372-34832	
code	1..1	SHALL		3372-34821	
@code	1..1	SHALL		3372-34834	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = ASSERTION
title	1..1	SHALL		3372-34881	
statusCode	1..1	SHALL		3372-34822	
@code	1..1	SHALL		3372-34827	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3372-34823	
low	0..1	MAY		3372-34828	
high	0..1	MAY		3372-34835	
value	1..1	SHALL	CD	3372-34833	
@valueSet	0..1	SHOULD		3372-34836	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3372-34829).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-34830).
3. **SHALL NOT** contain [0..0] @actionNegationInd (CONF:3372-34831).
4. **SHALL** contain exactly one [1..1] templateId (CONF:3372-34819).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3372-34820) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.130" (CONF:3372-34824).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-34825).
5. **SHALL** contain exactly one [1..1] id (CONF:3372-34832).
6. **SHALL** contain exactly one [1..1] code (CONF:3372-34821).
 - a. This code **SHALL** contain exactly one [1..1] @code="ASSERTION" Assertion (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3372-34834).
7. **SHALL** contain exactly one [1..1] title (CONF:3372-34881).
8. **SHALL** contain exactly one [1..1] statusCode (CONF:3372-34822).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-34827).
9. **MAY** contain zero or one [0..1] effectiveTime (CONF:3372-34823) such that it
 Note: QDM Attribute: Participation Period
 - a. **MAY** contain zero or one [0..1] low (CONF:3372-34828).
 Note: enrollmentStartdate – The time the patient enrolled in the program
 - b. **MAY** contain zero or one [0..1] high (CONF:3372-34835).
 Note: enrollmentEnddate – The time the patient's enrollment in the program ends
10. **SHALL** contain exactly one [1..1] value with @xsi:type="CD" (CONF:3372-34833).
 Note: QDM Attribute: Code
 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3372-34836).

Figure 59: Program Participation (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.130" extension="2018-05-01"/>
  </templateId>
  <id root="35cf9fd6-0d3d-4f86-91bf-a87fbf5ba8ef"/>
  <title value="Program Participation"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.56 Provider Care Experience

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.70:2017-05-01 (open)]

Table 123: Provider Care Experience Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Provider Care Experience.

Data elements that meet this criterion indicate the provider's experience with availability of resources (e.g., scheduling, equipment, space, and such consumables as medications). Provider care experience gauges provider satisfaction with key structures, processes, and outcomes in the healthcare delivery system.

Timing: The time the care experience is recorded; author time.

Table 124: Provider Care Experience Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.70:2017-05-01)					
@classCode	1..1	SHALL		3335-32218	OBS
@moodCode	1..1	SHALL		3335-32219	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..0	SHALL NOT		3335-34708	
templateId	1..1	SHALL		3335-32220	
item	1..1	SHALL		3335-32221	
@root	1..1	SHALL		3335-32222	2.16.840.1.113883.10.20.28.4.70
@extension	1..1	SHALL		3335-33701	2017-05-01
id	1..1	SHALL		3335-32223	
code	1..1	SHALL		3335-32224	
@code	1..1	SHALL		3335-32225	405193005
@codeSystem	1..1	SHALL		3335-32226	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3335-32227	
statusCode	1..1	SHALL		3335-32228	
@code	1..1	SHALL		3335-32229	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3335-34390	
low	1..1	SHALL		3335-34391	
value	1..1	SHALL	CD	3335-32230	
@valueSet	0..1	SHOULD		3335-32231	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3335-32218).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-32219).
3. **SHALL NOT** contain [0..0] @actionNegationInd (CONF:3335-34708).

4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-32220).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-32221) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.70"** (CONF:3335-32222).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-33701).
5. **SHALL** contain exactly one [1..1] **id** (CONF:3335-32223).
6. **SHALL** contain exactly one [1..1] **code** (CONF:3335-32224).
 - a. This code **SHALL** contain exactly one [1..1] **@code="405193005"** Caregiver Satisfaction (CONF:3335-32225).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.6.96"** (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-32226).
7. **SHALL** contain exactly one [1..1] **title** (CONF:3335-32227).
8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3335-32228).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3335-32229).
9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3335-34390) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3335-34391).

Note: QDM Attribute: Author dateTime (The time the care experience is recorded)
10. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:3335-32230).

Note: QDM Attribute: Code

 - a. This value **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3335-32231).

Figure 60: Provider Care Experience Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.70" extension="2017-05-01"/>
  </templateId>
  <id root="a0b2aa8d-16b8-47b3-831b-94fcbbe31e36"/>
  <code code="405193005" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Caregiver Satisfaction"/>
  </code>
  <title value="Provider Care Experience"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.57 Provider Characteristic (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.71:2017-08-01 (open)]

Table 125: Provider Characteristic (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Provider Characteristic.

Provider characteristics refer to specific factors about a provider. Included are demographics, behavioral factors, social, or cultural factors, available resources, and preferences.

Timing: The time the characteristic is authored.

Table 126: Provider Characteristic (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.71:2017-08-01)					
@classCode	1..1	SHALL		3346-31740	OBS
@moodCode	1..1	SHALL		3346-31741	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
templateId	1..1	SHALL		3346-31742	
item	1..1	SHALL		3346-31743	
@root	1..1	SHALL		3346-31744	2.16.840.1.113883.10.20.28.4.71
@extension	1..1	SHALL		3346-34121	2017-08-01
id	1..1	SHALL		3346-31745	
statusCode	1..1	SHALL		3346-31748	
@code	1..1	SHALL		3346-31749	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-31750	
low	1..1	SHALL		3346-31751	
participation	1..1	SHALL		3346-31746	
@typeCode	1..1	SHALL		3346-34842	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = DRIV
role	1..1	SHALL		3346-31753	
@classCode	1..1	SHALL		3346-31754	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ASSIGNED
playingEntity	1..1	SHALL		3346-34837	
@classCode	1..1	SHALL		3346-34838	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = PSN
@determinerCode	1..1	SHALL		3346-34839	urn:oid:2.16.840.1.113883.5.30 (EntityDeterminer) = KIND
code	1..1	SHALL		3346-34840	
@valueSet	0..1	SHOULD		3346-34841	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3346-31740).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-31741).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-31742).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-31743) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.71"** (CONF:3346-31744).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-34121).
4. **SHALL** contain exactly one [1..1] **id** (CONF:3346-31745).
5. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-31748).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-31749).
6. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-31750) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:3346-31751).

Note: QDM Attribute: Author dateTime (The time the characteristic is authored)
7. **SHALL** contain exactly one [1..1] **participation** (CONF:3346-31746) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** Is derived from (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34842).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3346-31753).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ASSIGNED"** Assigned Entity (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-31754).
 - ii. This role **SHALL** contain exactly one [1..1] **playingEntity** (CONF:3346-34837).
 1. This playingEntity **SHALL** contain exactly one [1..1] **@classCode="PSN"** Person (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3346-34838).
 2. This playingEntity **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** (CodeSystem: EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3346-34839).
 3. This playingEntity **SHALL** contain exactly one [1..1] **code** (CONF:3346-34840).

Note: QDM Attribute: Code

 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3346-34841).

Figure 61: Provider Characteristic (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.71" extension="2017-08-01"/>
  </templateId>
  <id root="1b9dd45d-6d1e-4abb-87eb-2e1f1549bd58"/>
  <statusCode code="completed" />
  <participation typeCode="DRIV">
    <role classCode="ASSIGNED">
      <playingEntity classCode="PSN" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingDevice>
    </role>
  </participation>
</observationCriteria>
```

5.58 Reason

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01 (open)]

Table 127: Reason Contexts

Contained By:	Contains:
Device, Order (optional) Device, Recommended (optional) Encounter, Order (optional) Encounter, Recommended (optional) Intervention, Order (optional) Intervention, Recommended (optional) Patient Characteristic Clinical Trial Participant (optional) Assessment, Performed (V2) (optional) Diagnostic Study, Performed (V2) (optional) Encounter, Performed (V2) (optional) Laboratory Test, Performed (V2) (optional) Immunization, Order (V2) (optional) Medication, Discharge (V2) (optional) Intervention, Performed (V2) (optional) Physical Exam, Performed (V2) (optional) Medication, Dispensed (V2) (optional) Assessment, Order (optional) Assessment, Recommended (V2) (optional) Communication, Performed (optional) Device, Applied (V2) (optional) Diagnostic Study, Order (V3) (optional) Immunization, Administered (V3) (optional) Laboratory Test, Order (V2) (optional) Laboratory Test, Recommended (V2) (optional) Medication, Administered (V3) (optional) Physical Exam, Order (V2) (optional) Physical Exam, Recommended (V2) (optional) Procedure, Order (V3) (optional) Procedure, Recommended (V2) (optional) Procedure, Performed (V3) (optional) Substance, Order (V3) (optional) Substance, Recommended (V3) (optional) Medication, Order (V3) (optional)	

This template represents the QDM attribute: Reason.

It represents the thought process or justification for an action or for not performing an action. In some measures, specific treatments are acceptable inclusion criteria only if a justified reason is present. Each of these measures uses a value set (often, but not exclusively, using SNOMED CT) to express acceptable justification reasons. Other measures specify reasons as justification for exclusions. Examples include patient, system, or medical-related reasons for

declining to perform specific actions. Each of these measures also uses a value set to express acceptable justification reasons for declining to perform expected actions.

Table 128: Reason Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01)					
@classCode	1..1	SHALL		3335-29895	OBS
@moodCode	1..1	SHALL		3335-29896	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3335-29897	
item	1..1	SHALL		3335-29898	
@root	1..1	SHALL		3335-29899	2.16.840.1.113883.10.20.28.4.8
@extension	1..1	SHALL		3335-33686	2017-05-01
code	1..1	SHALL		3335-29901	
@code	1..1	SHALL		3335-29902	410666004
@codeSystem	1..1	SHALL		3335-29903	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3335-33173	
value	1..1	SHALL	CD	3335-29904	
@valueSet	0..1	SHOULD		3335-34681	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3335-29895).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3335-29896).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3335-29897).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3335-29898) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.88"** (CONF:3335-29899).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-05-01"** (CONF:3335-33686).
4. **SHALL** contain exactly one [1..1] **code** (CONF:3335-29901).
 - a. This code **SHALL** contain exactly one [1..1] **@code="410666004"** Reason (CONF:3335-29902).

- b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3335-29903).
- 5. **SHALL** contain exactly one [1..1] **title** (CONF:3335-33173).
- 6. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3335-29904).
 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3335-34681).

Figure 62: Reason Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.88" extension="2017-05-01"/>
  </templateId>
  <id root="05c07740-1f8d-417e-a9f2-fc769b1d342d"/>
  <code code="410666004" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Reason"/>
  </code>
  <title value="Reason"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.59 Related To

[observationCriteria: identifier
 urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01 (open)]

Table 129: Related To Contexts

Contained By:	Contains:
Assessment, Performed (V2) (optional) Care Goal (V2) (optional) Communication, Performed (optional)	

This template represents the QDM attribute: Related To.

Something to which the QDM element is related.

The id of this template references the existing id of the QDM element this is related to. The root attribute of the id is required.

Table 130: Related To Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01)					
@classCode	1..1	SHALL		3346-34725	OBS
@moodCode	1..1	SHALL		3346-34726	EVN
templateId	1..1	SHALL		3346-34717	
item	1..1	SHALL		3346-34718	
@root	1..1	SHALL		3346-34721	2.16.840.1.113883.10.20.28.4.127
@extension	1..1	SHALL		3346-34722	2017-08-01
id	1..1	SHALL		3346-34727	
@root	1..1	SHALL		3346-34730	
@extension	0..1	MAY		3346-34731	
code	1..1	SHALL		3346-34719	
@code	1..1	SHALL		3346-34723	42752001
@codeSystem	1..1	SHALL		3346-34724	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3346-34729	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3346-34725).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CONF:3346-34726).
3. **SHALL** contain exactly one [1..1] templateId (CONF:3346-34717).
 - a. This templateId **SHALL** contain exactly one [1..1] item (CONF:3346-34718) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.127" (CONF:3346-34721).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-34722).
4. **SHALL** contain exactly one [1..1] id (CONF:3346-34727).
 - a. This id **SHALL** contain exactly one [1..1] @root (CONF:3346-34730).
 - b. This id **MAY** contain zero or one [0..1] @extension (CONF:3346-34731).
5. **SHALL** contain exactly one [1..1] code (CONF:3346-34719).

- a. This code **SHALL** contain exactly one [1..1] @code="42752001" Due to (CONF:3346-34723).
- b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-34724).
- 6. **SHALL** contain exactly one [1..1] **title** (CONF:3346-34729).

Figure 63: Related To Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.127" extension="2017-08-01"/>
  </templateId>
  <id root="302625d2-e41a-4d51-ba11-af0dfc81a11b"/>
  <code code="42752001" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Due to"/>
  </code>
  <title value="Related To"/>
</observationCriteria>
```

5.60 Result (V2)

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01 (open)]

Table 131: Result (V2) Contexts

Contained By:	Contains:
Diagnostic Study, Performed (V2) (optional) Laboratory Test, Performed (V2) (optional) Intervention, Performed (V2) (optional) Physical Exam, Performed (V2) (optional) Procedure, Performed (V3) (optional)	

This template represents the QDM attribute: Result.

This represents the final consequences or data collected from a sequence of actions or events, or observable entities including, but not limited to procedures, laboratory tests, physical examinations, or diagnostic tests.

This template is used to represent result in all actCriteria except observationCriteria, where result is represented directly using observationCriteria/value. However, even though "Diagnostic Study, Performed" and "Laboratory Test, Performed" are observationCriteria, because these two data types also contain Result dateTime attribute, this Result template is also used to represent result in lieu of observation/value.

Table 132: Result (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01)					
@classCode	1..1	SHALL		3346-32186	OBS
@moodCode	1..1	SHALL		3346-32187	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
templateId	1..1	SHALL		3346-32188	
item	1..1	SHALL		3346-32189	
@root	1..1	SHALL		3346-32190	2.16.840.1.113883.10.20.28.4.1 01
@extension	1..1	SHALL		3346-34653	2017-08-01
code	1..1	SHALL		3346-32192	
@code	1..1	SHALL		3346-32193	394617004
@codeSystem	1..1	SHALL		3346-32194	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3346-32195	
effectiveTime	0..1	MAY	IVL_TS	3346-34761	
low	1..1	SHALL		3346-34762	
value	1..1	SHALL		3346-32196	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3346-32186).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-32187).
3. **SHALL** contain exactly one [1..1] templateId (CONF:3346-32188).
 - a. This templateId **SHALL** contain exactly one [1..1] item (CONF:3346-32189) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.101" (CONF:3346-32190).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-34653).
4. **SHALL** contain exactly one [1..1] code (CONF:3346-32192).
 - a. This code **SHALL** contain exactly one [1..1] @code="394617004" Result (CONF:3346-32193).

- b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-32194).
- 5. **SHALL** contain exactly one [1..1] **title** (CONF:3346-32195).
- 6. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-34761).
Note: QDM Attribute: Result dateTime (The time the result report is generated and saved in the database)
 - a. The effectiveTime, if present, **SHALL** contain exactly one [1..1] **low** (CONF:3346-34762).
- 7. **SHALL** contain exactly one [1..1] **value** (CONF:3346-32196).
Note: QDM Attribute: Result

Figure 64: Result (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.101" extension="2017-08-01"/>
  </templateId>
  <id root="6626ee8e-e72b-4382-97a0-9a00ac27763a"/>
  <code code="394617004" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Result"/>
  </code>
  <title value="Result"/>
  <value xsi:type="CD" valueSet="${QDMElementValueSetOID}"/>
</observationCriteria>
```

5.61 Severity Observation (V2)

[observationCriteria: identifier
urn:h17ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01 (open)]

Table 133: Severity Observation (V2) Contexts

Contained By:	Contains:
Adverse Event (V2) (optional) Allergy Intolerance (V2) (optional) Symptom (V2) (optional) Diagnosis (V2) (optional)	

This template represents the QDM attribute: Severity.

Severity observation represents the gravity of the problem, such as allergy or reaction, in terms of its actual or potential impact on the patient.

Table 134: Severity Observation (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01)					
@classCode	1..1	SHALL		3346-30129	OBS
@moodCode	1..1	SHALL		3346-30130	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
templateId	1..1	SHALL		3346-30131	
item	1..1	SHALL		3346-30132	
@root	1..1	SHALL		3346-30133	2.16.840.1.113883.10.20.28.4.9 3
@extension	1..1	SHALL		3346-33691	2017-08-01
code	1..1	SHALL		3346-30135	
@code	1..1	SHALL		3346-30136	SEV
@codeSystem	1..1	SHALL		3346-30137	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
title	1..1	SHALL		3346-30140	
value	1..1	SHALL	CD	3346-30138	
@valueSet	0..1	SHOULD		3346-34843	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3346-30129).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-30130).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-30131).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-30132) such that it
 - i. This item **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.28.4.93" (CONF:3346-30133).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-33691).
4. **SHALL** contain exactly one [1..1] **code** (CONF:3346-30135).
 - a. This code **SHALL** contain exactly one [1..1] **@code="SEV"** Severity Observation (CONF:3346-30136).
 - b. This code **SHALL** contain exactly one [1..1]
@codeSystem="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode
urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30137).

5. **SHALL** contain exactly one [1..1] **title** (CONF:3346-30140).
6. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3346-30138).
 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-34843).

Figure 65: Severity Observation (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.93" extension="2017-08-01"/>
  </templateId>
  <code code="SEV" codeSystem="2.16.840.1.113883.5.4" codeSystemName="HL7 ActCode">
    <displayName value="Severity Observation"/>
  </code>
  <title value="Severity"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

5.62 Status (V2)

[observationCriteria: identifier
 urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01 (open)]

Table 135: Status (V2) Contexts

Contained By:	Contains:
Diagnostic Study, Performed (V2) (optional) Laboratory Test, Performed (V2) (optional) Intervention, Performed (V2) (optional) Procedure, Performed (V3) (optional)	

This template represents the QDM attribute: Status.

Status represents the particular stage of the subject within a defined process.

Table 136: Status (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01)					
@classCode	1..1	SHALL		3346-30151	OBS
@moodCode	1..1	SHALL		3346-30152	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
templateId	1..1	SHALL		3346-30153	
item	1..1	SHALL		3346-30155	
@root	1..1	SHALL		3346-30156	2.16.840.1.113883.10.20.28.4.9 4
@extension	1..1	SHALL		3346-33690	2017-08-01
code	1..1	SHALL		3346-30158	
@code	1..1	SHALL		3346-30159	33999-4
@codeSystem	1..1	SHALL		3346-30160	urn:oid:2.16.840.1.113883.6.1 (LOINC)
title	1..1	SHALL		3346-30161	
value	1..1	SHALL	CD	3346-30162	
@valueSet	0..1	SHOULD		3346-34844	

1. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CONF:3346-30151).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood
urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-30152).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-30153).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-30155) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.94"** (CONF:3346-30156).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-33690).
4. **SHALL** contain exactly one [1..1] **code** (CONF:3346-30158).
 - a. This code **SHALL** contain exactly one [1..1] **@code="33999-4"** Status (CONF:3346-30159).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CodeSystem: LOINC
urn:oid:2.16.840.1.113883.6.1) (CONF:3346-30160).
5. **SHALL** contain exactly one [1..1] **title** (CONF:3346-30161).
6. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3346-30162).

- a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-34844).

Figure 66: Status (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.94" extension="2017-08-01"/>
  </templateId>
  <code code="33999-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">
    <displayName value="Status"/>
  </code>
  <title value="Status"/>
  <value xsi:type="CD" valueSet="${QDMElementValueSetOID}"/>
</observationCriteria>
```

5.63 Substance, Administered (V3)

[substanceAdministrationCriteria: identifier
 urn:hl7ii:2.16.840.1.113883.10.20.28.4.73:2018-05-01 (open)]

Table 137: Substance, Administered (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	

This template represents the QDM data type: Substance, Administered.

A substance is a chemical element and its compounds in the natural state or obtained by any manufacturing process (other than pharmaceutical drugs), including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent that may be separated without affecting the stability of the substance or changing its composition. Examples of a substance may include but are not limited to: environmental agents (e.g., pollen, dust) and food (e.g., vitamins).

This template represents a substance that has been administered.

Timing: The Relevant Period addresses: StartTime = when a single substance administration event starts (e.g., the initiation of an intravenous infusion, or administering a the substance orally or topically to a patient); StopTime = when a single substance administration event ends (e.g., the end time of the intravenous infusion, or the administration of a substance orally or topically is completed - for oral or topical administration, the start and stop times are the same).

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Table 138: Substance, Administered (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.73:2018-05-01)					
@classCode	1..1	SHALL		3372-32878	SBADM
@moodCode	1..1	SHALL		3372-32879	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
@actionNegationInd	0..1	MAY		3372-32880	
templateId	1..1	SHALL		3372-32881	
item	1..1	SHALL		3372-32882	
@root	1..1	SHALL		3372-32883	2.16.840.1.113883.10.20.28.4.7 3
@extension	1..1	SHALL		3372-33393	2018-05-01
id	1..1	SHALL		3372-32884	
code	1..1	SHALL		3372-32885	
@code	1..1	SHALL		3372-33177	416118004
@codeSystem	1..1	SHALL		3372-33178	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3372-32887	
statusCode	1..1	SHALL		3372-32888	
@code	1..1	SHALL		3372-32889	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3372-32890	
low	0..1	MAY		3372-32891	
high	0..1	MAY		3372-32892	
effectiveTime	0..1	MAY	PIVL_TS	3372-34845	
period	0..1	MAY		3372-34846	
routeCode	0..1	MAY		3372-32894	
@valueSet	0..1	SHOULD		3372-32895	

doseQuantity	0..1	MAY		3372-32896	
participation	1..1	SHALL		3372-32897	
@typeCode	1..1	SHALL		3372-32898	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3372-32899	
@classCode	1..1	SHALL		3372-32900	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ADMM
playingMaterial	1..1	SHALL		3372-32901	
@classCode	1..1	SHALL		3372-32902	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MAT
@determinerCode	1..1	SHALL		3372-32903	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3372-32904	
@valueSet	0..1	SHOULD		3372-32905	
participation	0..1	MAY		3372-34563	
@typeCode	1..1	SHALL		3372-34566	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34564	
low	1..1	SHALL		3372-34567	
role	1..1	SHALL		3372-34565	
@classCode	1..1	SHALL		3372-34568	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34569	

1. **SHALL** contain exactly one [1..1] **@classCode="SBADM"** Substance Administration (CONF:3372-32878).
2. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-32879).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-32880).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-32881).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-32882) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.73"** (CONF:3372-32883).

- ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33393).
- 5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-32884).
- 6. **SHALL** contain exactly one [1..1] **code** (CONF:3372-32885).
 - a. This code **SHALL** contain exactly one [1..1] **@code="416118004"** Administration (CONF:3372-33177).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.6.96 "** (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3372-33178).
- 7. **SHALL** contain exactly one [1..1] **title** (CONF:3372-32887).
- 8. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-32888).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-32889).
- 9. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-32890) such that it

Note: QDM Attribute: Relevant Period

 - a. **MAY** contain zero or one [0..1] **low** (CONF:3372-32891).

Note: startTime (When a single substance administration event starts (e.g., the initiation of an intravenous infusion, or administering a the substance orally or topically to a patient))
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3372-32892).

Note: stopTime (When a single substance administration event ends (e.g., the end time of the intravenous infusion, or the administration of a substance orally or topically is completed - for oral or topical administration, the start and stop times are the same))
- 10. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3372-34845) such that it

Note: QDM Attribute: Frequency

 - a. **MAY** contain zero or one [0..1] **period** (CONF:3372-34846).
- 11. **MAY** contain zero or one [0..1] **routeCode** (CONF:3372-32894).

Note: QDM Attribute: Route

 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-32895).
- 12. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3372-32896).

Note: QDM Attribute: Dosage
- 13. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-32897) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CSM"** Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-32898).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-32899).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ADMM"** Administerable Material (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-32900).
 - ii. This role **SHALL** contain exactly one [1..1] **playingMaterial** (CONF:3372-32901).

1. This playingMaterial **SHALL** contain exactly one [1..1] **@classCode="MAT"** Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-32902).
 2. This playingMaterial **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-32903).
 3. This playingMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3372-32904).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-32905).
14. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34563) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34566).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34564).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34567).
Note: QDM Attribute: Author dateTime
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34565).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34568).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34569).

Figure 67: Substance, Administered (V3) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.73" extension="2018-05-01"/>
  </templateId>
  <id root="8918e418-fdc0-4c9c-b902-67502e324b9b"/>
  <code code="416118004" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Administration"/>
  </code>
  <title value="Substance, Administered"/>
  <statusCode code="completed" />
  <participation typeCode="CSM">
    <role classCode="ADMM">
      <playingMaterial classCode="MAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.64 Substance, Order (V3)

[substanceAdministrationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.77:2018-05-01 (open)]

Table 139: Substance, Order (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Supply (optional)

This template represents the QDM data type: Substance, Order.

This template represents a request by a clinician or appropriately licensed care provider to a pharmacy to provide a substance to a patient.

Timing: The time the order is signed; author datetime.

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Table 140: Substance, Order (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.77:2018-05-01)					
@classCode	1..1	SHALL		3372-32623	SBADM
@moodCode	1..1	SHALL		3372-32624	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = RQO
@actionNegationInd	0..1	MAY		3372-32625	
templateId	1..1	SHALL		3372-32626	
item	1..1	SHALL		3372-32627	
@root	1..1	SHALL		3372-32628	2.16.840.1.113883.10.20.28.4.7 7
@extension	1..1	SHALL		3372-33652	2018-05-01
id	1..1	SHALL		3372-32629	
title	1..1	SHALL		3372-32632	
statusCode	1..1	SHALL		3372-32633	
@code	1..1	SHALL		3372-32634	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
repeatNumber	0..1	MAY		3372-32638	
routeCode	0..1	MAY		3372-32639	
@valueSet	0..1	SHOULD		3372-32640	
doseQuantity	0..1	MAY		3372-32641	
participation	1..1	SHALL		3372-32642	
@typeCode	1..1	SHALL		3372-32643	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3372-32644	
@classCode	1..1	SHALL		3372-32645	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ADMM
playingMaterial	1..1	SHALL		3372-32646	
@classCode	1..1	SHALL		3372-32647	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MAT

@determinerCode	1..1	SHALL		3372-32648	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3372-32649	
@valueSet	0..1	SHOULD		3372-32650	
participation	0..1	MAY		3372-33511	
@typeCode	1..1	SHALL		3372-33513	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-33512	
low	1..1	SHALL		3372-33514	
role	1..1	SHALL		3372-33601	
@classCode	1..1	SHALL		3372-33602	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3372-33603	
outboundRelationship	0..1	MAY		3372-32651	
@typeCode	1..1	SHALL		3372-32652	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-32653	<u>Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01)</u>
outboundRelationship	0..1	MAY		3372-34485	
@typeCode	1..1	SHALL		3372-34486	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
supplyCriteria	1..1	SHALL		3372-34848	<u>Supply (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.129:2017-08-01)</u>

1. **SHALL** contain exactly one [1..1] **@classCode="SBADM"** Substance Administration (CONF:3372-32623).
2. **SHALL** contain exactly one [1..1] **@moodCode="RQO"** Request (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-32624).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-32625).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-32626).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-32627) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.77"** (CONF:3372-32628).

- ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33652).
- 5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-32629).
- 6. **SHALL** contain exactly one [1..1] **title** (CONF:3372-32632).
- 7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-32633).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-32634).
- 8. **MAY** contain zero or one [0..1] **repeatNumber** (CONF:3372-32638).
Note: QDM Attribute: Refills
- 9. **MAY** contain zero or one [0..1] **routeCode** (CONF:3372-32639).
Note: QDM Attribute: Route
 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-32640).
- 10. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3372-32641).
Note: QDM Attribute: Dosage
- 11. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-32642) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CSM"** Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-32643).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-32644).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ADMM"** Administerable Material (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-32645).
 - ii. This role **SHALL** contain exactly one [1..1] **playingMaterial** (CONF:3372-32646).
 - 1. This playingMaterial **SHALL** contain exactly one [1..1] **@classCode="MAT"** Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-32647).
 - 2. This playingMaterial **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-32648).
 - 3. This playingMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3372-32649).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-32650).
 - 12. **MAY** contain zero or one [0..1] **participation** (CONF:3372-33511) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-33513).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-33512).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-33514).
Note: QDM Attribute: Author dateTime (The time the order is signed)
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-33601).

- i. This role **SHALL** contain exactly one [1..1] **@classCode="ROL"** Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-33602).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-33603).
13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-32651) such that it
 Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32652).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-32653).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-34485) such that it
 Note: QDM Attribute: Supply
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34486).
 - b. **SHALL** contain exactly one [1..1] **Supply** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01) (CONF:3372-34488).

Figure 68: Substance, Order (V3) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.77" extension="2018-05-01"/>
  </templateId>
  <id root="58f3015d-d2dc-45ac-bf6d-fa8d1588603f"/>
  <title value="Substance, Order"/>
  <statusCode code="active"/>
  <participation typeCode="CSM">
    <role classCode="ADMM">
      <playingMaterial classCode="MAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}"/>
      </playingMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.65 Substance, Recommended (V3)

[substanceAdministrationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.78:2018-05-01 (open)]

Table 141: Substance, Recommended (V3) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Reason (optional) Supply (optional)

This template represents the QDM data type: Substance, Recommended.

A substance is a chemical element and its compounds in the natural state or obtained by any manufacturing process (other than pharmaceutical drugs), including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent that may be separated without affecting the stability of the substance or changing its composition. Examples of a substance may include but are not limited to: environmental agents (e.g., pollen, dust) and food (e.g., vitamins).

This template represents a recommendation for a substance.

Timing: The time the recommendation is authored (i.e., provided to the patient).

Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.

Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication).

Table 142: Substance, Recommended (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
substanceAdministrationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.78:2018-05-01)					
@classCode	1..1	SHALL		3372-32063	SBADM
@moodCode	1..1	SHALL		3372-32064	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = INT
@actionNegationInd	0..1	MAY		3372-32065	
templateId	1..1	SHALL		3372-32066	
item	1..1	SHALL		3372-32125	
@root	1..1	SHALL		3372-32126	2.16.840.1.113883.10.20.28.4.7 8
@extension	1..1	SHALL		3372-33693	2018-05-01
id	1..1	SHALL		3372-32067	
title	1..1	SHALL		3372-32069	
statusCode	1..1	SHALL		3372-32070	
@code	1..1	SHALL		3372-32071	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = active
repeatNumber	0..1	MAY		3372-32121	
routeCode	0..1	MAY		3372-32123	
@valueSet	0..1	SHOULD		3372-33200	
doseQuantity	0..1	MAY		3372-32124	
participation	1..1	SHALL		3372-32103	
@typeCode	1..1	SHALL		3372-32104	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CSM
role	1..1	SHALL		3372-32105	
@classCode	1..1	SHALL		3372-32106	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ADMM
playingMaterial	1..1	SHALL		3372-32107	
@classCode	1..1	SHALL		3372-32108	urn:oid:2.16.840.1.113883.5.41 (HL7EntityClass) = MAT

@determinerCode	1..1	SHALL		3372-32109	urn:oid:2.16.840.1.113883.5.30 (HL7EntityDeterminer) = KIND
code	1..1	SHALL		3372-32110	
@valueSet	0..1	SHOULD		3372-32111	
participation	0..1	MAY		3372-34473	
@typeCode	1..1	SHALL		3372-34476	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = AUT
time	1..1	SHALL		3372-34474	
low	1..1	SHALL		3372-34477	
role	1..1	SHALL		3372-34475	
@classCode	1..1	SHALL		3372-34478	urn:oid:2.16.840.1.113883.5.11 0 (HL7RoleClass) = ROL
id	0..1	MAY		3372-34479	
outboundRelationship	0..1	MAY		3372-32112	
@typeCode	1..1	SHALL		3372-32113	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = RSON
observationCriteria	1..1	SHALL		3372-32114	<u>Reason (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.88:2017-05-01)</u>
outboundRelationship	0..1	MAY		3372-34488	
@typeCode	1..1	SHALL		3372-34489	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
supplyCriteria	1..1	SHALL		3372-34849	<u>Supply (identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.129:2017-08-01)</u>

1. **SHALL** contain exactly one [1..1] **@classCode="SBADM"** Substance Administration (CONF:3372-32063).
2. **SHALL** contain exactly one [1..1] **@moodCode="INT"** Intent (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3372-32064).
3. **MAY** contain zero or one [0..1] **@actionNegationInd** (CONF:3372-32065).
Note: QDM Attribute: Negation Rationale
4. **SHALL** contain exactly one [1..1] **templateId** (CONF:3372-32066).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3372-32125) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.78"** (CONF:3372-32126).

- ii. This item **SHALL** contain exactly one [1..1] **@extension="2018-05-01"** (CONF:3372-33693).
- 5. **SHALL** contain exactly one [1..1] **id** (CONF:3372-32067).
- 6. **SHALL** contain exactly one [1..1] **title** (CONF:3372-32069).
- 7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3372-32070).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3372-32071).
- 8. **MAY** contain zero or one [0..1] **repeatNumber** (CONF:3372-32121).
Note: QDM Attribute: Refills
- 9. **MAY** contain zero or one [0..1] **routeCode** (CONF:3372-32123).
Note: QDM Attribute: Route
 - a. The routeCode, if present, **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-33200).
- 10. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:3372-32124).
Note: QDM Attribute: Dosage
- 11. **SHALL** contain exactly one [1..1] **participation** (CONF:3372-32103) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CSM"** Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-32104).
 - b. **SHALL** contain exactly one [1..1] **role** (CONF:3372-32105).
 - i. This role **SHALL** contain exactly one [1..1] **@classCode="ADMM"** Administerable Material (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-32106).
 - ii. This role **SHALL** contain exactly one [1..1] **playingMaterial** (CONF:3372-32107).
 - 1. This playingMaterial **SHALL** contain exactly one [1..1] **@classCode="MAT"** Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-32108).
 - 2. This playingMaterial **SHALL** contain exactly one [1..1] **@determinerCode="KIND"** Kind (CodeSystem: HL7EntityDeterminer urn:oid:2.16.840.1.113883.5.30) (CONF:3372-32109).
 - 3. This playingMaterial **SHALL** contain exactly one [1..1] **code** (CONF:3372-32110).
Note: QDM Attribute: Code
 - a. This code **SHOULD** contain zero or one [0..1] **@valueSet** (CONF:3372-32111).
- 12. **MAY** contain zero or one [0..1] **participation** (CONF:3372-34473) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="AUT"** Author (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34476).
 - b. **SHALL** contain exactly one [1..1] **time** (CONF:3372-34474).
 - i. This time **SHALL** contain exactly one [1..1] **low** (CONF:3372-34477).
Note: QDM Attribute: Author dateTime (The time the recommendation is authored (i.e., provided to the patient))
 - c. **SHALL** contain exactly one [1..1] **role** (CONF:3372-34475).

- i. This role **SHALL** contain exactly one [1..1] @classCode="ROL" Role (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34478).
 - ii. This role **MAY** contain zero or one [0..1] **id** (CONF:3372-34479).
13. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-32112) such that it
 Note: QDM Attribute: Reason
- a. **SHALL** contain exactly one [1..1] @typeCode="RSON" Has Reason (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-32113).
 - b. **SHALL** contain exactly one [1..1] **Reason** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01) (CONF:3372-32114).
14. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3372-34488) such that it
 Note: QDM Attribute: Supply
- a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34489).
 - b. **SHALL** contain exactly one [1..1] **Supply** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01) (CONF:3372-34849).

Figure 69: Substance, Recommended (V3) Example

```
<substanceAdministrationCriteria classCode="SBADM" moodCode="INT">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.78" extension="2018-05-01"/>
  </templateId>
  <id root="e208b889-30eb-4c2b-be1f-372084e98bbc"/>
  <title value="Substance, Recommended"/>
  <statusCode code="active"/>
  <participation typeCode="CSM">
    <role classCode="ADMM">
      <playingMaterial classCode="MAT" determinerCode="KIND">
        <code valueSet="{$QDMElementValueSetOID}" />
      </playingMaterial>
    </role>
  </participation>
</substanceAdministrationCriteria>
```

5.66 Supply

[supplyCriteria: identifier urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01 (open)]

Table 143: Supply Contexts

Contained By:	Contains:
Immunization, Order (V2) (optional) Medication, Discharge (V2) (optional) Substance, Order (V3) (optional) Substance, Recommended (V3) (optional) Medication, Order (V3) (optional)	

This template represents the QDM Attribute: Supply

The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication)

Table 144: Supply Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
supplyCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01)					
@classCode	1..1	SHALL		3346-34795	SPLY
@moodCode	1..1	SHALL		3346-34796	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3346-34771	
item	1..1	SHALL		3346-34772	
@root	1..1	SHALL		3346-34783	2.16.840.1.113883.10.20.28.4.129
@extension	1..1	SHALL		3346-34784	2017-08-01
id	1..1	SHALL		3346-34797	
title	1..1	SHALL		3346-34798	
quantity	1..1	SHALL		3346-34800	

1. **SHALL** contain exactly one [1..1] @classCode="SPLY" Supply (CONF:3346-34795).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-34796).
3. **SHALL** contain exactly one [1..1] templateId (CONF:3346-34771).

- a. This templateId **SHALL** contain exactly one [1..1] **item** (CONF:3346-34772) such that it
 - i. This item **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.28.4.129"** (CONF:3346-34783).
 - ii. This item **SHALL** contain exactly one [1..1] **@extension="2017-08-01"** (CONF:3346-34784).
 - 4. **SHALL** contain exactly one [1..1] **id** (CONF:3346-34797).
 - 5. **SHALL** contain exactly one [1..1] **title** (CONF:3346-34798).
 - 6. **SHALL** contain exactly one [1..1] **quantity** (CONF:3346-34800).
- Note: QDM Attribute: Supply

Figure 70: Supply Example

```
<supplyCriteria classCode="SPLY" moodCode="RQO">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.129" extension="2017-08-01"/>
  </templateId>
  <id root="5ab17ed3-166c-4265-9c61-d254e30c8e83"/>
  <title value="Supply"/>
  <quantity xsi:type="IVL_PQ">
    <low value="50" unit="mL"/>
  </quantity>
</supplyCriteria>
```

5.67 Symptom (V2)

[observationCriteria: identifier
 urn:hl7ii:2.16.840.1.113883.10.20.28.4.116:2017-08-01 (open)]

Table 145: Symptom (V2) Contexts

Contained By:	Contains:
Data Criteria Section (V3) (optional)	Severity Observation (V2) (optional)

This template represents the QDM data type: Symptom.

A symptom is a patient's reported perception of departure from normal functioning that is present at the time indicated.

Timing: The Prevalence Period references the time from the onset date to the abatement date.

The onset datetime corresponds to the implicit start datetime of the datatype and the abatement datetime corresponds to the implicit stop datetime of the datatype. If the abatement datetime is null, then the symptom is considered to still be active. When this datatype is used with timing relationships, the criterion is looking for whether the symptom was active for the time frame indicated by the timing relationships.

Table 146: Symptom (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.116:2017-08-01)					
@classCode	1..1	SHALL		3346-34108	OBS
@moodCode	1..1	SHALL		3346-34109	urn:oid:2.16.840.1.113883.5.10 01 (HL7ActMood) = EVN
templateId	1..1	SHALL		3346-34079	
item	1..1	SHALL		3346-34080	
@root	1..1	SHALL		3346-34093	2.16.840.1.113883.10.20.28.4.1 16
@extension	1..1	SHALL		3346-34480	2017-08-01
id	1..1	SHALL		3346-34112	
code	1..1	SHALL		3346-34081	
@code	1..1	SHALL		3346-34095	418799008
@codeSystem	1..1	SHALL		3346-34096	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3346-34111	
statusCode	1..1	SHALL		3346-34082	
@code	1..1	SHALL		3346-34097	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	0..1	MAY	IVL_TS	3346-34083	
low	0..1	MAY		3346-34098	
high	0..1	MAY		3346-34099	
value	1..1	SHALL	CD	3346-34088	
@valueSet	0..1	SHOULD		3346-34105	
outboundRelationship	0..1	MAY		3346-34078	
@typeCode	1..1	SHALL		3346-34092	urn:oid:2.16.840.1.113883.5.10 02 (HL7ActRelationshipType) = REFR
observationCriteria	1..1	SHALL		3346-	Severity Observation (V2)

				34091	(identifier: urn:hl7ii:2.16.840.1.113883.10. 20.28.4.93:2017-08-01)
--	--	--	--	-----------------------	---------------------------------------------------------------------------------------------

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3346-34108).
2. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3346-34109).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3346-34079).
 - a. **SHALL** contain exactly one [1..1] **item** (CONF:3346-34080) such that it
 - i. This item **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.116" (CONF:3346-34093).
 - ii. This item **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-34480).
4. **SHALL** contain exactly one [1..1] **id** (CONF:3346-34112).
5. **SHALL** contain exactly one [1..1] **code** (CONF:3346-34081).
 - a. This code **SHALL** contain exactly one [1..1] @code="418799008" Symptom (CONF:3346-34095).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-34096).
6. **SHALL** contain exactly one [1..1] **title** (CONF:3346-34111).
7. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3346-34082).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3346-34097).
8. **MAY** contain zero or one [0..1] **effectiveTime** (CONF:3346-34083) such that it

Note: QDM Attribute: Prevalence Period (References the time from the onset date to the abatement date)

 - a. **MAY** contain zero or one [0..1] **low** (CONF:3346-34098).

Note: Onset dateTime
 - b. **MAY** contain zero or one [0..1] **high** (CONF:3346-34099).

Note: Abatement dateTime (If the abatement datetime is null, then the symptom is considered to still be active)
9. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3346-34088).

Note: QDM Attribute: Code

 - a. This value **SHOULD** contain zero or one [0..1] @valueSet (CONF:3346-34105).
10. **MAY** contain zero or one [0..1] **outboundRelationship** (CONF:3346-34078) such that it

Note: QDM Attribute: Severity

 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34092).
 - b. **SHALL** contain exactly one [1..1] **Severity Observation (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01) (CONF:3346-34091).

Figure 71: Symptom (V2) Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.116" extension="2017-08-01"/>
  </templateId>
  <id root="9e4e810d-3c3e-461e-86f8-6fe7a0b1ca2b"/>
  <code code="418799008" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Symptom"/>
  </code>
  <title value="Symptom"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" valueSet="${QDMElementValueSetOID}"/>
</observationCriteria>
```

5.68 Target Outcome

[observationCriteria: identifier
urn:hl7ii:2.16.840.1.113883.10.20.28.4.128:2017-08-01 (open)]

Table 147: Target Outcome Contexts

Contained By:	Contains:
Care Goal (V2) (optional)	

This template represents the QDM attribute: Target Outcome.

The expected outcome that will indicate the care goal is achieved, or met.

Table 148: Target Outcome Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observationCriteria (identifier: urn:hl7ii:2.16.840.1.113883.10.20.28.4.128:2017-08-01)					
@classCode	1..1	SHALL		3346-29112	OBS
@moodCode	1..1	SHALL		3346-29113	GOL
templateId	1..1	SHALL		3346-29104	
item	1..1	SHALL		3346-29105	
@root	1..1	SHALL		3346-29108	2.16.840.1.113883.10.20.28.4.128
@extension	1..1	SHALL		3346-29109	2017-08-01
id	1..1	SHALL		3346-29114	
code	1..1	SHALL		3346-29106	
@code	1..1	SHALL		3346-29110	385676005
@codeSystem	1..1	SHALL		3346-29111	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
title	1..1	SHALL		3346-29116	
value	1..1	SHALL		3346-29107	

1. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CONF:3346-29112).
2. **SHALL** contain exactly one [1..1] @moodCode="GOL" Goal (CONF:3346-29113).
3. **SHALL** contain exactly one [1..1] templateId (CONF:3346-29104).
 - a. **SHALL** contain exactly one [1..1] item (CONF:3346-29105) such that it
 - i. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.128" (CONF:3346-29108).
 - ii. **SHALL** contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-29109).
4. **SHALL** contain exactly one [1..1] id (CONF:3346-29114).
5. **SHALL** contain exactly one [1..1] code (CONF:3346-29106).
 - a. This code **SHALL** contain exactly one [1..1] @code="385676005" Outcome of action (CONF:3346-29110).
 - b. This code **SHALL** contain exactly one [1..1] @codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:3346-29111).

6. **SHALL** contain exactly one [1..1] **title** (CONF:3346-29116).
7. **SHALL** contain exactly one [1..1] **value** (CONF:3346-29107).

Figure 72: Target Outcome Example

```
<observationCriteria classCode="OBS" moodCode="EVN">
  <templateId>
    <item root="2.16.840.1.113883.10.20.28.4.128" extension="2017-08-01"/>
  </templateId>
  <code code="385676005" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
    <displayName value="Outcome of action"/>
  </code>
  <title value="Target Outcome"/>
  <value xsi:type="CD" valueSet="{$QDMElementValueSetOID}"/>
</observationCriteria>
```

6 TEMPLATE IDS IN THIS GUIDE

Table 149: Template List

Template Title	Template Type	templateId
QDM Templates for CQL-Based HQMF Header (V3)	Document	urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2018-05-01
Data Criteria Section (V3)	Section	urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2018-05-01
Measure Description Section	Section	urn:oid:2.16.840.1.113883.10.20.28.2.3
Measure Observations Section (V2)	Section	urn:hl7ii:2.16.840.1.113883.10.20.28.2.4:2018-05-01
Population Criteria Section (V2)	Section	urn:hl7ii:2.16.840.1.113883.10.20.28.2.7:2017-08-01
Admission Source	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.123:2017-05-01
Adverse Event (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.120:2017-08-01
Allergy Intolerance (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.119:2017-08-01
Assessment, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.131:2018-05-01
Assessment, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.117:2017-08-01
Assessment, Recommended (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2018-05-01
Care Goal (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.7:2017-08-01
Cause	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.105:2017-05-01
Communication, Performed	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.132:2018-05-01
Component	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01
Device, Applied (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2018-05-01
Device, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.15:2017-05-01
Device, Recommended	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.16:2017-05-01
Diagnosis (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01
Diagnostic Study, Order (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2018-05-01
Diagnostic Study, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.

Template Title	Template Type	templateId
		28.4.23:2017-08-01
Diagnostic Study, Recommended (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.24:2018-05-01
Dosage	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.125:2017-05-01
Encounter, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.27:2017-05-01
Encounter, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.5:2017-08-01
Encounter, Recommended	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.28:2017-05-01
Facility Location	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.92:2017-05-01
Family History	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.111:2017-05-01
Immunization, Administered (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.112:2018-05-01
Immunization, Order (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.113:2017-08-01
Incision Datetime	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.89:2017-05-01
Intervention, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.35:2017-05-01
Intervention, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.36:2017-08-01
Intervention, Recommended	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.37:2017-05-01
Laboratory Test Component	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.126:2017-05-01
Laboratory Test Reference Range	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.124:2017-05-01
Laboratory Test, Order (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.41:2018-05-01
Laboratory Test, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.42:2017-08-01
Laboratory Test, Recommended (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.43:2018-05-01
Medication, Active (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.44:2018-05-01
Medication, Administered (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.45:2018-05-01
Medication, Discharge (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.48:2017-08-01
Medication, Dispensed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.49:2017-08-01
Medication, Order (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.

Template Title	Template Type	templateId
		28.4.51:2018-05-01
Patient Care Experience	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.52:2017-05-01
Patient Characteristic (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.53:2017-08-01
Patient Characteristic Birth Date	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.54:2017-05-01
Patient Characteristic Clinical Trial Participant	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.6:2017-05-01
Patient Characteristic Ethnicity	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.56:2017-05-01
Patient Characteristic Expired	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.57:2017-05-01
Patient Characteristic Payer	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.58:2017-05-01
Patient Characteristic Race	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.59:2017-05-01
Patient Characteristic Sex	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.55:2017-05-01
Physical Exam, Order (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.61:2018-05-01
Physical Exam, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.62:2017-08-01
Physical Exam, Recommended (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.63:2018-05-01
Principal Diagnosis	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.122:2017-05-01
Procedure, Order (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.66:2018-05-01
Procedure, Performed (V3)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.67:2018-05-01
Procedure, Recommended (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.68:2018-05-01
Program Participation	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.130:2017-08-01
Provider Care Experience	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.70:2017-05-01
Provider Characteristic (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.71:2017-08-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.88:2017-05-01
Related To	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.127:2017-08-01
Result (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.101:2017-08-01
Severity Observation (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.

Template Title	Template Type	templateId
		28.4.93:2017-08-01
<u>Status (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.94:2017-08-01
<u>Substance, Administered (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.73:2018-05-01
<u>Substance, Order (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.77:2018-05-01
<u>Substance, Recommended (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.78:2018-05-01
<u>Supply</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.129:2017-08-01
<u>Symptom (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.116:2017-08-01
<u>Target Outcome</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20. 28.4.128:2017-08-01

Table 150: Template Containments

Template Title	Template Type	templateId
QDM Templates for CQL-Based HQMF Header (V3)	Document	urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2018-05-01
Measure Description Section	Section	urn:oid:2.16.840.1.113883.10.20.28.2.3
Population Criteria Section (V2)	Section	urn:hl7ii:2.16.840.1.113883.10.20.28.2.7:2017-08-01
Measure Observations Section (V2)	Section	urn:hl7ii:2.16.840.1.113883.10.20.28.2.4:2018-05-01
Data Criteria Section (V3)	Section	urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2018-05-01
Device, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.15:2017-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Device, Recommended	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.16:2017-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Encounter, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.27:2017-05-01
Facility Location	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Encounter, Recommended	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.28:2017-05-01
Facility Location	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Family History	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.111:2017-05-01
Intervention, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.35:2017-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Intervention, Recommended	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.37:2017-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Patient Care Experience	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.52:2017-05-01
Patient Characteristic Clinical Trial Participant	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.6:2017-05-01

Template Title	Template Type	templateId
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Patient Characteristic Birth Date</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.54:2017-05-01
<u>Patient Characteristic Ethnicity</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.56:2017-05-01
<u>Patient Characteristic Expired</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.57:2017-05-01
<u>Cause</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.105:2017-05-01
<u>Patient Characteristic Payer</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.58:2017-05-01
<u>Patient Characteristic Race</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.59:2017-05-01
<u>Patient Characteristic Sex</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.55:2017-05-01
<u>Provider Care Experience</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.70:2017-05-01
<u>Adverse Event (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.120:2017-08-01
<u>Facility Location</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01
<u>Severity Observation (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01
<u>Allergy Intolerance (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.119:2017-08-01
<u>Severity Observation (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01
<u>Assessment, Performed (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.117:2017-08-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Component</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01
<u>Related To</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01
<u>Care Goal (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.7:2017-08-01
<u>Related To</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01
<u>Target Outcome</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.128:2017-08-01
<u>Diagnostic Study, Performed (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.23:2017-08-01
<u>Facility Location</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01

Template Title	Template Type	templateId
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Component	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01
Result (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01
Status (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01
Encounter, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.5:2017-08-01
Admission Source	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.123:2017-05-01
Facility Location	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.92:2017-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Principal Diagnosis	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.122:2017-05-01
Diagnosis (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01
Severity Observation (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01
Laboratory Test, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.42:2017-08-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Laboratory Test Component	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.126:2017-05-01
Laboratory Test Reference Range	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.124:2017-05-01
Laboratory Test Reference Range	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.124:2017-05-01
Result (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01
Status (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01
Immunization, Order (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.113:2017-08-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Supply	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01
Medication, Discharge (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.48:2017-08-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01

Template Title	Template Type	templateId
Supply	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01
Patient Characteristic (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.53:2017-08-01
Provider Characteristic (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.71:2017-08-01
Symptom (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.116:2017-08-01
Severity Observation (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01
Diagnosis (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.110:2017-08-01
Severity Observation (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.93:2017-08-01
Intervention, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.36:2017-08-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Result (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01
Status (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01
Physical Exam, Performed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.62:2017-08-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Component	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01
Result (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01
Medication, Dispensed (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.49:2017-08-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Dosage	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.125:2017-05-01
Assessment, Order	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.131:2018-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Assessment, Recommended (V2)	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2018-05-01
Reason	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
Communication, Performed	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.132:2018-05-01

Template Title	Template Type	templateId
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Related To</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.127:2017-08-01
<u>Device, Applied (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Diagnostic Study, Order (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Diagnostic Study, Recommended (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2018-05-01
<u>Immunization, Administered (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.112:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Laboratory Test, Order (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Laboratory Test, Recommended (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Medication, Active (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2018-05-01
<u>Medication, Administered (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.45:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Physical Exam, Order (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.61:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Physical Exam, Recommended (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Procedure, Order (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Procedure, Recommended (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2018-05-01

Template Title	Template Type	templateId
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Procedure, Performed (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Component</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.121:2017-05-01
<u>Incision Datetime</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.89:2017-05-01
<u>Result (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.101:2017-08-01
<u>Status (V2)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.94:2017-08-01
<u>Substance, Administered (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.73:2018-05-01
<u>Substance, Order (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.77:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Supply</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01
<u>Substance, Recommended (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.78:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Supply</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01
<u>Medication, Order (V3)</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.51:2018-05-01
<u>Reason</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.88:2017-05-01
<u>Supply</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.129:2017-08-01
<u>Program Participation</u>	Entry	urn:hl7ii:2.16.840.1.113883.10.20.28.4.130:2017-08-01

7 VALUE SETS IN THIS GUIDE

Table 151: ObservationMeasureScoring

Value Set: ObservationMeasureScoring urn:oid:2.16.840.1.113883.1.11.20367 Observation values used to indicate the type of scoring (e.g., proportion, ratio) used by a health quality measure.			
Code	Code System	Code System OID	Print Name
COHORT	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	cohort measure scoring
CONTVAR	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	continuous variable measure scoring
PROPOR	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	proportion measure scoring
RATIO	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	ratio measure scoring

Table 152: ObservationMeasureType

Value Set: ObservationMeasureType urn:oid:2.16.840.1.113883.1.11.20368 Observation values used to indicate whether a health quality measure is used to example a process or outcome over time.			
Code	Code System	Code System OID	Print Name
OUTCOME	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	outcome measure type
PROCESS	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	process measure type
COMPOSITE	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	composite measure type
RESOURCE	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	resource use measure type
EFFICIENCY	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	efficiency measure type
EXPERIENCE	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	experience measure type
STRUCTURE	HL7ObservationValue	urn:oid:2.16.840.1.11388 3.5.1063	structure measure type

Table 153: RoleClassServiceDeliveryLocation

Value Set: RoleClassServiceDeliveryLocation urn:oid:2.16.840.1.113883.1.11.16927 Location(s) in which care being measured is rendered.			
Code	Code System	Code System OID	Print Name
SDLOC	HL7RoleClass	urn:oid:2.16.840.1.11388 3.5.110	service delivery location
DSDLOC	HL7RoleClass	urn:oid:2.16.840.1.11388 3.5.110	dedicated service delivery location/health care facility
ISDLOC	HL7RoleClass	urn:oid:2.16.840.1.11388 3.5.110	incidental service delivery location

8 CODE SYSTEMS IN THIS GUIDE

Table 154: Code Systems

Name	OID
EntityDeterminer	urn:oid:2.16.840.1.113883.5.30
HL7ActClass	urn:oid:2.16.840.1.113883.5.6
HL7ActCode	urn:oid:2.16.840.1.113883.5.4
HL7ActMood	urn:oid:2.16.840.1.113883.5.1001
HL7ActReason	urn:oid:2.16.840.1.113883.5.8
HL7ActRelationshipType	urn:oid:2.16.840.1.113883.5.1002
HL7ActStatus	urn:oid:2.16.840.1.113883.5.14
HL7EntityClass	urn:oid:2.16.840.1.113883.5.41
HL7EntityDeterminer	urn:oid:2.16.840.1.113883.5.30
HL7ObservationValue	urn:oid:2.16.840.1.113883.5.1063
HL7ParticipationType	urn:oid:2.16.840.1.113883.5.90
HL7RoleClass	urn:oid:2.16.840.1.113883.5.110
HL7RoleCode	urn:oid:2.16.840.1.113883.5.111
HL7RoleLinkType	urn:oid:2.16.840.1.113883.5.107
LOINC	urn:oid:2.16.840.1.113883.6.1
SNOMED CT	urn:oid:2.16.840.1.113883.6.96

9 RETIRED TEMPLATES

Table 155 Retired Templates

Name	OID	Description
Communication: From Patient to Provider (V3) - RETIRED	urn:hl7ii:2.16.840.1.113883.10 .20.28.4.8:2018-05-01	This template represents the QDM data type: Communication: From Patient to Provider. This represents a communication initiated by the patient and received by the provider. Timing: The time the communication occurs, or is sent; author time.
Communication: From Provider to Patient (V3) - RETIRED	urn:hl7ii:2.16.840.1.113883.10 .20.28.4.9:2018-05-01	This template represents the QDM data type: Communication: From Provider to Patient. This represents the provision of any communication to the patient. (e.g., results, findings, plans for care, medical advice, instructions, educational resources, appointments). Timing: The time the communication occurs, or is sent; author time.
Communication: From Provider to Provider (V3) - RETIRED	urn:hl7ii:2.16.840.1.113883.10 .20.28.4.10:2018-05-01	This template represents the QDM data type: Communication: From Provider to Provider. This represents the provision of any communication from one clinician to another regarding findings, assessments, plans of care, consultative advice, instructions, educational resources, etc. Timing: The time the communication occurs, or is sent; author time.

10 NEW TEMPLATES

Table 156 New Templates

Name	OID	Description
Communication, Performed	urn:hl7ii:2.16.840.1.113883.10 .20.28.4.132:2018-05-01	<p>This template represents the QDM data type: Communication, Performed</p> <p>Communication is a conveyance of information from one entity (e.g., person, organization, or device) to another.</p> <p>Timing:</p> <p>Relevant Period: The time the communication is sent (start time) to the time the communication is received (end time)</p> <p>Author dateTime the time the communication is documented (specifically significant for negation rationale, i.e., Communication Not Performed).</p>

11 CHANGES FROM PREVIOUS VERSION

11.1 QDM Templates for CQL-Based HQMF Header (V3)

[QDM Templates for CQL-Based HQMF Header \(V3\)](#)

<urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2018-05-01>

Change	Old	New
Name	QDM Templates for CQL-Based HQMF Header (V2)	QDM Templates for CQL-Based HQMF Header (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.1.2:2018-05-01
Description	This is the document header template for a CQL-based HQMF document that contains QDM-based entry templates (QDM Version 5.3).	This is the document header template for a CQL-based HQMF document that contains QDM-based entry templates (QDM Version 5.4).
CONF #: 3346-18596 Removed	SHOULD contain zero or one [0..1] subjectOf (CONF:3346-18596) such that it	
CONF #: 3346-18597 Removed	SHALL contain exactly one [1..1] measureAttribute (CONF:3346-18597).	
CONF #: 3346-18598 Removed	This measureAttribute SHALL contain exactly one [1..1] code (CONF:3346-18598).	
CONF #: 3346-18599 Removed	This code SHALL contain exactly one [1..1] @code="ITMCNT" Items Counted (CONF:3346-18599).	
CONF #: 3346-30059 Removed	This code SHALL contain exactly one [1..1] @codeSystem (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3346-30059).	
CONF #: 3346-29983 Removed	This measureAttribute SHALL contain exactly one [1..1] value with @xsi:type="CD" (CONF:3346-29983).	
CONF #: 3372-18772 Modified	SHALL contain exactly one [1..1] item (CONF:3346-18772) such that it	This templateId SHALL contain exactly one [1..1] item (CONF:3372-18772) such that it
CONF #: 3372-33755 Modified	SHALL contain zero or one [0..1] @extension="2017-08-01" (CONF:3346-33755).	SHALL contain zero or one [0..1] @extension="2018-05-01" (CONF:3372-33755).
CONF #: 3372-34631 Modified	This text SHALL contain exactly one [1..1] @mediaType="application/cql" (CONF:3346-34631).	This text SHALL contain exactly one [1..1] @mediaType="text/cql" (CONF:3372-34631).

11.2 Assessment, Recommended (V2)

Assessment, Recommended (V2) (urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2018-05-01)

Change	Old	New
Name	Assessment, Recommended	Assessment, Recommended (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2017-05-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.118:2018-05-01
CONF #: 3335-34265 Removed	MAY contain zero or one [0..1] methodCode (CONF:3335-34265). Note: QDM Attribute: Method	
CONF #: 3335-34266 Removed	The methodCode, if present, SHOULD contain zero or one [0..1] item (CONF:3335-34266).	
CONF #: 3335-34268 Removed	The item, if present, SHOULD contain zero or one [0..1] @valueSet (CONF:3335-34268).	
CONF #: 3372-34157 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.118" (CONF:3335-34157).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.118" (CONF:3372-34157).
CONF #: 3372-34273 Modified	This item SHALL contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-34273).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-34273).

11.3 Communication: From Patient to Provider (V3) - RETIRED

Communication: From Patient to Provider (V3) - RETIRED

(urn:hl7ii:2.16.840.1.113883.10.20.28.4.8:2018-05-01)

Change	Old	New
Status	Published	Retired
Name	Communication: From Patient to Provider (V2)	Communication: From Patient to Provider (V3) - RETIRED
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.8:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.8:2018-05-01

11.4 Communication: From Provider to Patient (V3) - RETIRED

Communication: From Provider to Patient (V3) - RETIRED

(urn:hl7ii:2.16.840.1.113883.10.20.28.4.9:2018-05-01)

Change	Old	New
Status	Published	Retired
Name	Communication: From Provider to Patient (V2)	Communication: From Provider to Patient (V3) - RETIRED
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.9:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.9:2018-05-01

11.5 Communication: From Provider to Provider (V3) - RETIRED

Communication: From Provider to Provider (V3) - RETIRED

(urn:hl7ii:2.16.840.1.113883.10.20.28.4.10:2018-05-01)

Change	Old	New
Status	Published	Retired
Name	Communication: From Provider to Provider (V2)	Communication: From Provider to Provider (V3) - RETIRED
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.10:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.10:2018-05-01

11.6 Device, Applied (V2)

[Device, Applied \(V2\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2018-05-01\)](#)

Change	Old	New
Name	Device, Applied	Device, Applied (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2017-05-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.13:2018-05-01
CONF #: 3335-33359 Removed	MAY contain zero or one [0..1] approachSiteCode (CONF:3335-33359). Note: QDM Attribute: Anatomical Approach Site	
CONF #: 3335-33360 Removed	The approachSiteCode, if present, SHOULD contain zero or one [0..1] item (CONF:3335-33360).	
CONF #: 3335-33362 Removed	The item, if present, SHOULD contain zero or one [0..1] @valueSet (CONF:3335-33362).	
CONF #: 3372-33060 Modified	The targetSiteCode, if present, SHOULD contain zero or one [0..1] item (CONF:3335-33060).	The targetSiteCode, if present, SHALL contain exactly one [1..1] item (CONF:3372-33060).
CONF #: 3372-31307 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.13" (CONF:3335-31307).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.13" (CONF:3372-31307).
CONF #: 3372-33361 Modified	This item SHALL contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33361).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33361).
CONF #: 3372-33061 Modified	The item, if present, SHOULD contain zero or one [0..1] @valueSet (CONF:3335-33061).	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3372-33061).

11.7 Diagnostic Study, Order (V3)

Diagnostic Study, Order (V3) (<urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2018-05-01>)

Change	Old	New
Name	Diagnostic Study, Order (V2)	Diagnostic Study, Order (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.22:2018-05-01
Description	<p>This template represents the QDM data type: Diagnostic Study, Order.</p> <p>Diagnostic Study represents any kind of medical test performed as a specific test or series of steps to aid in diagnosing or detecting disease (e.g., to establish a diagnosis, measure the progress or recovery from disease, confirm that a person is free from disease). The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.</p> <p>Diagnostic Study, Order represents that a diagnostic study has been ordered.</p> <p>Timing: The time the order is signed; author time.</p>	<p>This template represents the QDM data type: Diagnostic Study, Order. Diagnostic Study represents any kind of medical test performed as a specific test or series of steps to aid in diagnosing or detecting disease (e.g., to establish a diagnosis, measure the progress or recovery from disease, confirm that a person is free from disease). The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.</p> <p>Diagnostic Study, Order represents that a diagnostic study has been ordered.</p> <p>Timing: The time the order is signed; author time.</p>
CONF #: 3372-34723 Added		SHALL contain exactly one [1..1] @classCode="OBS" Observation (CONF:3372-34723).
CONF #: 3346-30115 Removed	MAY contain zero or one [0..1] methodCode (CONF:3346-30115). Note: QDM Attribute: Method	
CONF #: 3346-30116 Removed	The methodCode, if present, SHOULD contain zero or one [0..1] item (CONF:3346-30116).	
CONF #: 3346-30908 Removed	The item, if present, SHOULD contain zero or one [0..1] @valueSet (CONF:3346-30908).	
CONF #: 3346-30105 Removed	SHALL contain exactly one [1..1] @classCode="OBS" Observation	

Change	Old	New
	(CONF:3346-30105).	
CONF #: 3372-30109 Modified	SHALL contain exactly one [1..1] item (CONF:3346-30109).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-30109) such that it
CONF #: 3372-30117 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.22" (CONF:3346-30117).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.22" (CONF:3372-30117).
CONF #: 3372-33643 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33643).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33643).

11.8 Diagnostic Study, Recommended (V3)

[Diagnostic Study, Recommended \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2018-05-01\)](#)

Change	Old	New
Name	Diagnostic Study, Recommended (V2)	Diagnostic Study, Recommended (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.24:2018-05-01
Description	<p>This template represents the QDM data type: Diagnostic Study, Recommended.</p> <p>Diagnostic Study represents any kind of medical test performed as a specific test or series of steps to aid in diagnosing or detecting disease (e.g., to establish a diagnosis, measure the progress or recovery from disease, confirm that a person is free from disease). The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.</p> <p>Timing: The time the order is signed; author time.</p>	<p>This template represents the QDM data type: Diagnostic Study, Recommended.</p> <p>Diagnostic Study represents any kind of medical test performed as a specific test or series of steps to aid in diagnosing or detecting disease (e.g., to establish a diagnosis, measure the progress or recovery from disease, confirm that a person is free from disease). The QDM defines diagnostic studies as those that are not performed in organizations that perform testing on samples of human blood, tissue, or other substance from the body. Diagnostic studies may make use of digital images and textual reports. Such studies include but are not limited to imaging studies, cardiology studies (electrocardiogram, treadmill stress testing), pulmonary-function testing, vascular laboratory testing, and others.</p> <p>Timing: The time the order is signed; author time.</p> <p>All QDM datatypes referring to recommendations address the time that the recommendation occurs, a</p>

Change	Old	New
	All QDM datatypes referring to recommendations address the time that the recommendation occurs, a single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.	single point in time. Vendors have expressed concerns that recommendations are not necessarily captured or managed in a standard manner as part of structured data capture in clinical workflow; many are documented as part of assessments in narrative text. Measure developers should address feasibility of clinical workflow to capture recommendations when evaluating measures.
CONF #: 3346-30587 Removed	MAY contain zero or one [0..1] methodCode (CONF:3346-30587). Note: QDM Attribute: Method	
CONF #: 3346-30588 Removed	The methodCode, if present, SHOULD contain zero or one [0..1] item (CONF:3346-30588).	
CONF #: 3346-30913 Removed	The item, if present, SHOULD contain zero or one [0..1] @valueSet (CONF:3346-30913).	
CONF #: 3372-30576 Modified	SHALL contain exactly one [1..1] item (CONF:3346-30576).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-30576) such that it
CONF #: 3372-30577 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.24" (CONF:3346-30577).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.24" (CONF:3372-30577).
CONF #: 3372-33751 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33751).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33751).

11.9 Immunization, Administered (V3)

[Immunization, Administered \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.112:2018-05-01\)](#)

Change	Old	New
Name	Immunization, Administered (V2)	Immunization, Administered (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.112:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.112:2018-05-01
CONF #: 3346-34491 Removed	MAY contain zero or one [0..1] outboundRelationship (CONF:3346-34491) such that it Note: QDM Attribute: Supply	
CONF #: 3346-34492 Removed	SHALL contain exactly one [1..1]	

Change	Old	New
	@typeCode="REFR" Refers To (CONF:3346-34492).	
CONF #: 3346-34801 Removed	SHALL contain exactly one [1..1] supplyCriteria (CONF:3346-34801).	
CONF #: 3372-33831 Modified	SHALL contain exactly one [1..1] item (CONF:3346-33831).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-33831) such that it
CONF #: 3372-33836 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.112" (CONF:3346-33836).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.112" (CONF:3372-33836).
CONF #: 3372-34384 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-34384).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-34384).

11.10 Laboratory Test, Order (V2)

[Laboratory Test, Order \(V2\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2018-05-01\)](#)

Change	Old	New
Name	Laboratory Test, Order	Laboratory Test, Order (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2017-05-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.41:2018-05-01
CONF #: 3335-30402 Removed	MAY contain zero or one [0..1] methodCode (CONF:3335-30402). Note: QDM Attribute: Method	
CONF #: 3335-30403 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3335-30403).	
CONF #: 3335-30404 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3335-30404).	
CONF #: 3372-30393 Modified	SHALL contain exactly one [1..1] item (CONF:3335-30393).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-30393) such that it
CONF #: 3372-30394 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.41" (CONF:3335-30394).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.41" (CONF:3372-30394).
CONF #: 3372-33649 Modified	This item SHALL contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33649).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33649).

11.11 Laboratory Test, Recommended (V2)

[Laboratory Test, Recommended \(V2\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2018-05-01\)](#)

Change	Old	New
Name	Laboratory Test, Recommended	Laboratory Test, Recommended (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2017-05-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.43:2018-05-01
CONF #: 3335-30428 Removed	MAY contain zero or one [0..1] methodCode (CONF:3335-30428). Note: QDM Attribute: Method	
CONF #: 3335-30429 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3335-30429).	
CONF #: 3335-30430 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3335-30430).	
CONF #: 3372-30418 Modified	SHALL contain exactly one [1..1] item (CONF:3335-30418).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-30418) such that it
CONF #: 3372-30419 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.43" (CONF:3335-30419).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.43" (CONF:3372-30419).
CONF #: 3372-33692 Modified	This item SHALL contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33692).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33692).

11.12 Medication, Active (V3)

[Medication, Active \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2018-05-01\)](#)

Change	Old	New
Name	Medication, Active (V2)	Medication, Active (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.44:2018-05-01
Description	<p>This template represents the QDM data type: Medication, Active.</p> <p>Medication represents clinical drugs or chemical substances intended for use in the medical diagnosis, cure, treatment, or prevention of disease. Medication active represents medication that is currently being taken by the patient.</p> <p>Timing: The Relevant Period addresses: StartTime = when the medication is first known to be used (generally the time of entry on the medication list); StopTime = when the medication is discontinued (generally the time discontinuation is recorded on the list).</p>	<p>This template represents the QDM data type: Medication, Active.</p> <p>Medication represents clinical drugs or chemical substances intended for use in the medical diagnosis, cure, treatment, or prevention of disease. Medication active represents medication that is currently being taken by the patient.</p> <p>Timing: The Relevant Period addresses: StartTime = when the medication is first known to be used (generally the time of entry on the medication list); StopTime = when the medication is discontinued (generally the time discontinuation is recorded on the list).</p>

Change	Old	New
	<p>discontinued (generally the time discontinuation is recorded on the medication list).</p> <p>Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p> <p>Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication). Used while the patient was on the given medication.</p>	<p>medication list).</p> <p>Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p>
CONF #: 3346-34431 Removed	MAY contain zero or one [0..1] outboundRelationship (CONF:3346-34431) such that it Note: QDM Attribute: Supply	
CONF #: 3346-34432 Removed	SHALL contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34432).	
CONF #: 3346-34805 Removed	SHALL contain exactly one [1..1] supplyCriteria (CONF:3346-34805).	
CONF #: 3372-31954 Modified	SHALL contain exactly one [1..1] item (CONF:3346-31954).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-31954) such that it
CONF #: 3372-31955 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.44" (CONF:3346-31955).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.44" (CONF:3372-31955).
CONF #: 3372-33376 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33376).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33376).

11.13 Medication, Administered (V3)

[Medication, Administered \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.45:2018-05-01\)](#)

Change	Old	New
Name	Medication, Administered (V2)	Medication, Administered (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.45:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.45:2018-05-01
Description	This template represents the QDM data type: Medication, Administered.	This template represents the QDM data type: Medication, Administered.

Change	Old	New
	<p>A medication refers to clinical drugs or chemical substances intended for use in the medical diagnosis, cure, treatment, or prevention of disease. This template represents a medication that was administered.</p> <p>Timing: The Relevant Period addresses: StartTime = when a single medication administration event starts (e.g., the initiation of an intravenous infusion, or administering a pill or IM injection to a patient); StopTime = when a single medication administration event ends (e.g., the end time of the intravenous infusion, or the administration of a pill or IM injection is completed - for pills and IM injections, the start and stop times are the same).</p> <p>Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p> <p>Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication).</p>	<p>A medication refers to clinical drugs or chemical substances intended for use in the medical diagnosis, cure, treatment, or prevention of disease. This template represents a medication that was administered.</p> <p>Timing: The Relevant Period addresses: StartTime = when a single medication administration event starts (e.g., the initiation of an intravenous infusion, or administering a pill or IM injection to a patient); StopTime = when a single medication administration event ends (e.g., the end time of the intravenous infusion, or the administration of a pill or IM injection is completed - for pills and IM injections, the start and stop times are the same).</p> <p>Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p>
CONF #: 3346-34434 Removed	MAY contain zero or one [0..1] outboundRelationship (CONF:3346-34434) such that it Note: QDM Attribute: Supply	
CONF #: 3346-34435 Removed	SHALL contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34435).	
CONF #: 3346-34808 Removed	SHALL contain exactly one [1..1] supplyCriteria (CONF:3346-34808).	
CONF #: 3372-32051 Modified	SHALL contain exactly one [1..1] item (CONF:3346-32051).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-32051) such that it
CONF #: 3372-34542 Modified	SHALL contain exactly one [1..1] participation (CONF:3346-34542) such that it	MAY contain zero or one [0..1] participation (CONF:3372-34542) such that it
CONF #: 3372-32052 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.45" (CONF:3372-32052).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.45" (CONF:3372-32052).

Change	Old	New
	8.4.45" (CONF:3346-32052).	
CONF #: 3372-33386 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33386).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33386).

11.14 Medication, Order (V3)

[Medication, Order \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.51:2018-05-01\)](#)

Change	Old	New
Name	Medication, Order (V2)	Medication, Order (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.51:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.51:2018-05-01
CONF #: 3372-34860 Added		MAY contain zero or one [0..1] participation (CONF:3372-34860) such that it
CONF #: 3372-34861 Added		SHALL contain exactly one [1..1] role (CONF:3372-34861).
CONF #: 3372-34862 Added		SHALL contain exactly one [1..1] @typeCode="LOC" Location (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3372-34862).
CONF #: 3372-34863 Added		This role SHALL contain exactly one [1..1] @classCode="EXLOC" event location (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-34863).
CONF #: 3372-34864 Added		This role SHALL contain exactly one [1..1] code (CONF:3372-34864). Note: QDM Attribute:Setting - Where the medication is expected to be consumed or administered.
CONF #: 3346-30199 Removed	MAY contain zero or one [0..1] methodCode (CONF:3346-30199). Note: QDM Attribute: Method	
CONF #: 3346-30229 Removed	The methodCode, if present, SHALL contain zero or one [0..1] item (CONF:3346-30229).	
CONF #: 3346-30230 Removed	The item, if present, SHOULD contain zero or one [0..1] @valueSet (CONF:3346-30230).	
CONF #: 3372-29051 Modified	SHALL contain exactly one [1..1] item (CONF:3346-29051).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-29051) such that it
CONF #: 3372-29052 Modified	This item SHALL contain exactly	SHALL contain exactly one [1..1]

Change	Old	New
	one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.51" (CONF:3346-29052).	@root="2.16.840.1.113883.10.20.2 8.4.51" (CONF:3372-29052).
CONF #: 3372-33443 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33443).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33443).

11.15Physical Exam, Order (V2)

[Physical Exam, Order \(V2\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.61:2018-05-01\)](#)

Change	Old	New
Name	Physical Exam, Order	Physical Exam, Order (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.61:2017-05-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.61:2018-05-01
CONF #: 3335-31419 Removed	MAY contain zero or one [0..1] methodCode (CONF:3335-31419). Note: QDM Attribute: Method	
CONF #: 3335-31420 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3335-31420).	
CONF #: 3335-31421 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3335-31421).	
CONF #: 3372-31409 Modified	SHALL contain exactly one [1..1] item (CONF:3335-31409).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-31409) such that it
CONF #: 3372-31410 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.61" (CONF:3335-31410).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.61" (CONF:3372-31410).
CONF #: 3372-33437 Modified	This item SHALL contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33437).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33437).

11.16Physical Exam, Recommended (V2)

[Physical Exam, Recommended \(V2\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2018-05-01\)](#)

Change	Old	New
Name	Physical Exam, Recommended	Physical Exam, Recommended (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2017-05-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.63:2018-05-01
CONF #: 3335-31461 Removed	MAY contain zero or one [0..1] methodCode (CONF:3335-31461). Note: QDM Attribute: Method	
CONF #: 3335-31462 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3335-31462).	
CONF #: 3335-31463 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3335-31463).	
CONF #: 3372-31447 Modified	SHALL contain exactly one [1..1] item (CONF:3335-31447).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-31447) such that it

Change	Old	New
CONF #: 3372-31448 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.61" (CONF:3335-31448).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.61" (CONF:3372-31448).
CONF #: 3372-33449 Modified	This item SHALL contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33449).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33449).

11.17 Procedure, Order (V3)

[Procedure, Order \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2018-05-01\)](#)

Change	Old	New
Name	Procedure, Order (V2)	Procedure, Order (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.66:2018-05-01
CONF #: 3346-31135 Removed	MAY contain zero or one [0..1] methodCode (CONF:3346-31135). Note: QDM Attribute: Method	
CONF #: 3346-31136 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3346-31136).	
CONF #: 3346-33418 Removed	MAY contain zero or one [0..1] approachSiteCode (CONF:3346-33418). Note: QDM Attribute: Anatomical Approach Site	
CONF #: 3346-33419 Removed	The approachSiteCode, if present, SHALL contain exactly one [1..1] item (CONF:3346-33419).	
CONF #: 3346-31235 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3346-31235).	
CONF #: 3346-33423 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3346-33423).	
CONF #: 3372-31123 Modified	SHALL contain exactly one [1..1] item (CONF:3346-31123).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-31123) such that it
CONF #: 3372-31124 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.66" (CONF:3346-31124).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.66" (CONF:3372-31124).
CONF #: 3372-33422 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33422).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33422).

11.18 Procedure, Performed (V3)

Procedure, Performed (V3) (<urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2018-05-01>)

Change	Old	New
Name	Procedure, Performed (V2)	Procedure, Performed (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.67:2018-05-01
CONF #: 3346-33399 Removed	MAY contain zero or one [0..1] approachSiteCode (CONF:3346-33399). Note: QDM Attribute: Anatomical Approach Site	
CONF #: 3346-33400 Removed	The approachSiteCode, if present, SHALL contain exactly one [1..1] item (CONF:3346-33400).	
CONF #: 3346-33403 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3346-33403).	
CONF #: 3372-34556 Modified	SHALL contain exactly one [1..1] participation (CONF:3346-34556) such that it	MAY contain zero or one [0..1] participation (CONF:3372-34556) such that it
CONF #: 3372-33398 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33398).	This item SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33398).

11.19 Procedure, Recommended (V2)

Procedure, Recommended (V2) (<urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2018-05-01>)

Change	Old	New
Name	Procedure, Recommended	Procedure, Recommended (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2017-05-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.68:2018-05-01
CONF #: 3335-31224 Removed	MAY contain zero or one [0..1] methodCode (CONF:3335-31224). Note: QDM Attribute: Method	
CONF #: 3335-31225 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3335-31225).	
CONF #: 3335-33411 Removed	MAY contain zero or one [0..1] approachSiteCode (CONF:3335-33411). Note: QDM Attribute: Anatomical Approach Site	
CONF #: 3335-33412 Removed	The approachSiteCode, if present, SHALL contain exactly one [1..1] item (CONF:3335-33412).	
CONF #: 3335-31226 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3335-31226).	
CONF #: 3335-33415 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3335-33415).	
CONF #: 3372-31212 Modified	SHALL contain exactly one [1..1] item (CONF:3335-31212).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-31212) such that it
CONF #: 3372-31213 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.68" (CONF:3335-31213).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.68" (CONF:3372-31213).
CONF #: 3372-33417 Modified	This item SHALL contain exactly one [1..1] @extension="2017-05-01" (CONF:3335-33417).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33417).

11.20 Program Participation (V2)

[Program Participation \(V2\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.130:2018-05-01\)](#)

Change	Old	New
Name	Program Participation	Program Participation (V2)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.130:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.130:2018-05-01
CONF #: 3372-34881 Added		SHALL contain exactly one [1..1] title (CONF:3372-34881).
CONF #: 3372-34820 Modified	SHALL contain exactly one [1..1] item (CONF:3346-34820).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-34820) such that it
CONF #: 3372-34824 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.130" (CONF:3346-34824).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.130" (CONF:3372-34824).
CONF #: 3372-34825 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-34825).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-34825).
CONF #: 3372-34833 Modified	MAY contain zero or one [0..1] value with @xsi:type="CD" (CONF:3346-34833). Note: QDM Attribute: Code	SHALL contain exactly one [1..1] value with @xsi:type="CD" (CONF:3372-34833). Note: QDM Attribute: Code
CONF #: 3372-34836 Modified	The value, if present, SHOULD contain zero or one [0..1] @valueSet (CONF:3346-34836).	This value SHOULD contain zero or one [0..1] @valueSet (CONF:3372-34836).

11.21 Substance, Administered (V3)

Substance, Administered (V3) (<urn:hl7ii:2.16.840.1.113883.10.20.28.4.73:2018-05-01>)

Change	Old	New
Name	Substance, Administered (V2)	Substance, Administered (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.73:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.73:2018-05-01
Description	<p>This template represents the QDM data type: Substance, Administered.</p> <p>A substance is a chemical element and its compounds in the natural state or obtained by any manufacturing process (other than pharmaceutical drugs), including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent that may be separated without affecting the stability of the substance or changing its composition. Examples of a substance may include but are not limited to: environmental agents (e.g., pollen, dust) and food (e.g., vitamins).</p> <p>This template represents a substance that has been administered.</p> <p>Timing: The Relevant Period addresses: StartTime = when a single substance administration event starts (e.g., the initiation of an intravenous infusion, or administering a the substance orally or topically to a patient); StopTime = when a single substance administration event ends (e.g., the end time of the intravenous infusion, or the administration of a substance orally or topically is completed - for oral or topical administration, the start and stop times are the same). Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p> <p>Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication).</p>	<p>This template represents the QDM data type: Substance, Administered.</p> <p>A substance is a chemical element and its compounds in the natural state or obtained by any manufacturing process (other than pharmaceutical drugs), including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent that may be separated without affecting the stability of the substance or changing its composition. Examples of a substance may include but are not limited to: environmental agents (e.g., pollen, dust) and food (e.g., vitamins).</p> <p>This template represents a substance that has been administered.</p> <p>Timing: The Relevant Period addresses: StartTime = when a single substance administration event starts (e.g., the initiation of an intravenous infusion, or administering a the substance orally or topically to a patient); StopTime = when a single substance administration event ends (e.g., the end time of the intravenous infusion, or the administration of a substance orally or topically is completed - for oral or topical administration, the start and stop times are the same). Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p>

Change	Old	New
CONF #: 3346-34482 Removed	MAY contain zero or one [0..1] outboundRelationship (CONF:3346-34482) such that it Note: QDM Attribute: Supply	
CONF #: 3346-34483 Removed	SHALL contain exactly one [1..1] @typeCode="REFR" Refers To (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-34483).	
CONF #: 3346-34847 Removed	SHALL contain exactly one [1..1] supplyCriteria (CONF:3346-34847).	
CONF #: 3372-32882 Modified	SHALL contain exactly one [1..1] item (CONF:3346-32882).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-32882) such that it
CONF #: 3372-34563 Modified	SHALL contain exactly one [1..1] participation (CONF:3346-34563) such that it	MAY contain zero or one [0..1] participation (CONF:3372-34563) such that it
CONF #: 3372-32883 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.73" (CONF:3346-32883).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.2 8.4.73" (CONF:3372-32883).
CONF #: 3372-33393 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33393).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33393).

11.22 Substance, Order (V3)

[Substance, Order \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.77:2018-05-01\)](#)

Change	Old	New
Name	Substance, Order (V2)	Substance, Order (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.77:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.77:2018-05-01
Description	<p>This template represents the QDM data type: Substance, Order.</p> <p>This template represents a request by a clinician or appropriately licensed care provider to a pharmacy to provide a substance to a patient.</p> <p>Timing: The time the order is signed; author datetime.</p> <p>Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p> <p>Supply: The quantity (amount) of therapeutic agent that was provided to a patient (i.e., number of doses, number of tablets or pills, volume of medication).</p>	<p>This template represents the QDM data type: Substance, Order.</p> <p>This template represents a request by a clinician or appropriately licensed care provider to a pharmacy to provide a substance to a patient.</p> <p>Timing: The time the order is signed; author datetime.</p> <p>Dosage: Details of how medication is/is to be taken, i.e., the quantity (mg, cc, tablets) to be taken at a single administration.</p>
CONF #: 3346-33671 Removed	MAY contain zero or one [0..1] methodCode (CONF:3346-33671). Note: QDM Attribute: Method	
CONF #: 3346-33672 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3346-33672).	
CONF #: 3346-33673 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3346-33673).	
CONF #: 3372-32627 Modified	SHALL contain exactly one [1..1] item (CONF:3346-32627).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-32627) such that it
CONF #: 3372-32628 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.77" (CONF:3346-32628).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.77" (CONF:3372-32628).
CONF #: 3372-33652 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33652).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33652).

11.23 Substance, Recommended (V3)

[Substance, Recommended \(V3\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.4.78:2018-05-01\)](#)

Change	Old	New
Name	Substance, Recommended (V2)	Substance, Recommended (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.4.78:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.4.78:2018-05-01
CONF #: 3346-32122 Removed	MAY contain zero or one [0..1] methodCode (CONF:3346-32122). Note: QDM Attribute: Method	
CONF #: 3346-33198 Removed	The methodCode, if present, SHALL contain exactly one [1..1] item (CONF:3346-33198).	
CONF #: 3346-33199 Removed	This item SHOULD contain zero or one [0..1] @valueSet (CONF:3346-33199).	
CONF #: 3372-32125 Modified	SHALL contain exactly one [1..1] item (CONF:3346-32125).	This templateId SHALL contain exactly one [1..1] item (CONF:3372-32125) such that it
CONF #: 3372-32126 Modified	This item SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.78" (CONF:3346-32126).	SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.28.4.78" (CONF:3372-32126).
CONF #: 3372-33693 Modified	This item SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33693).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33693).
CONF #: 3372-32108 Modified	This playingMaterial SHALL contain exactly one [1..1] @classCode="MMAT" Manufactured Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3346-32108).	This playingMaterial SHALL contain exactly one [1..1] @classCode="MAT" Material (CodeSystem: HL7EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:3372-32108).
CONF #: 3372-32106 Modified	This role SHALL contain exactly one [1..1] @classCode="MANU" Manufactured (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3346-32106).	This role SHALL contain exactly one [1..1] @classCode="ADMM" Administerable Material (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3372-32106).

11.24 Data Criteria Section (V3)

Data Criteria Section (V3) (<urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2018-05-01>)

Change	Old	New
Name	Data Criteria Section (V2)	Data Criteria Section (V3)
Oid	urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2017-08-01	urn:hl7ii:2.16.840.1.113883.10.20.28.2.6:2018-05-01
CONF #: 3372-34678 Added		MAY contain zero or more [0..*] entry (CONF:3372-34678) such that it
CONF #: 3372-34679 Added		SHALL contain exactly one [1..1] observationCriteria (CONF:3372-34679).
CONF #: 3372-34680 Added		SHALL contain exactly one [1..1] typeId="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34680).
CONF #: 3372-34850 Added		MAY contain zero or more [0..*] entry (CONF:3372-34850) such that it
CONF #: 3372-34851 Added		SHALL contain exactly one [1..1] actCriteria (CONF:3372-34851).
CONF #: 3372-34852 Added		SHALL contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3372-34852).
CONF #: 3372-34878 Added		MAY contain zero or more [0..*] entry (CONF:3372-34878) such that it
CONF #: 3372-34879 Added		SHALL contain exactly one [1..1] observationCriteria (CONF:3372-34879).
CONF #: 3372-34880 Added		SHALL contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CONF:3372-34880).
CONF #: 3346-32670 Removed	MAY contain zero or more [0..*] entry (CONF:3346-32670) such that it	
CONF #: 3346-32673 Removed	MAY contain zero or more [0..*] entry (CONF:3346-32673) such that it	
CONF #: 3346-32676 Removed	MAY contain zero or more [0..*] entry (CONF:3346-32676) such that it	
CONF #: 3346-32671 Removed	SHALL contain exactly one [1..1] @typeCode="DRIV" Is Derived From	

Change	Old	New
	(CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-32671).	
CONF #: 3346-34481 Removed	SHALL contain exactly one [1..1] actCriteria (CONF:3346-34481).	
CONF #: 3346-32674 Removed	SHALL contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-32674).	
CONF #: 3346-32675 Removed	SHALL contain exactly one [1..1] actCriteria (CONF:3346-32675).	
CONF #: 3346-32677 Removed	SHALL contain exactly one [1..1] @typeCode="DRIV" Is Derived From (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3346-32677).	
CONF #: 3346-32678 Removed	SHALL contain exactly one [1..1] actCriteria (CONF:3346-32678).	
CONF #: 3372-33440 Modified	SHALL contain exactly one [1..1] @extension="2017-08-01" (CONF:3346-33440).	SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-33440).

11.25 Measure Observations Section (V2)

[Measure Observations Section \(V2\) \(urn:hl7ii:2.16.840.1.113883.10.20.28.2.4:2018-05-01\)](#)

Change	Old	New
Name	Measure Observations Section	Measure Observations Section (V2)
Oid	urn:oid:2.16.840.1.113883.10.20.28.2.4	urn:hl7ii:2.16.840.1.113883.10.20.28.2.4:2018-05-01
Description	The Measure Observations section defines computations (e.g., time from check in to antibiotic administration) used to score particular aspects of performance. Measure observations are used in ratio and continuous variable eMeasures.	The Measure Observations section defines computations (e.g., time from check in to antibiotic administration) used to score particular aspects of performance. Measure observations are used in ratio and continuous variable eCQM.
CONF #: 3372-30104 Added		SHALL contain exactly one [1..1] @extension="2018-05-01" (CONF:3372-30104).
CONF #: 3372-30105 Added		SHALL contain at least one [1..*] definition (CONF:3372-30105).
CONF #: 3372-34644 Added		Such definitions SHALL contain exactly one [1..1] measureObservationDefinition (CONF:3372-34644).
CONF #: 3372-34649 Added		This measureObservationDefinition SHALL contain exactly one [1..1] methodCode (CONF:3372-34649).
CONF #: 3372-34650 Added		This measureObservationDefinition SHALL contain exactly one [1..1] code (CONF:3372-34650).
CONF #: 3372-34651 Added		This measureObservationDefinition SHALL contain exactly one [1..1] value (CONF:3372-34651).
CONF #: 3372-18902 Modified	This templateId SHALL contain at least one [1..*] item (CONF:87-18902) such that it	This templateId SHALL contain exactly one [1..1] item (CONF:3372-18902) such that it