

Cardiology: Admission Orders - Heart Failure Order Set

Order Set: Conceptual Structure

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**Knowledge Based Systems (KBS)
Office of Informatics and Information Governance (OIIG)
Clinical Decision Support (CDS)**

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Cardiology: Admission Orders - Heart Failure Order Set: Order Set: Conceptual Structure

by Knowledge Based Systems (KBS), Office of Informatics and Information Governance (OIIG), and Clinical Decision Support (CDS)

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Preface

Table 1. Revision History

Date	Life Cycle Event
June 20, 2018	Published
April 10, 2018	Published
April 10, 2018	Reviewed
August 29, 2017	Pre-published
August 10, 2017	Created

Table 2. Clinical White Paper Contributors

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Table 3. Artifact Identifier

Domain	Artifact ID	Name
urn:va.gov:kbs:knart:artifact:r1	d65f4c6f-d870-5ecd-9df7-eb935c920d92	O24

Artifact Applicability

Table 4. Applicability Foci, Description and Codes

Focus	Description	Code System	Code	Value Set	Value Set Version
PatientAgeGroup	Population 18 years old or older			N/A	N/A
ClinicalVenue	Outpatient clinic, hospital, and ED settings	SNOMED CT	33022008 Hospital-based outpatient department (environment)	N/A	N/A
ClinicalFocus	diagnosis suggestive of initial or recurrent heart failure	SNOMED CT	84114007 Heart failure (disorder)	N/A	N/A
WorkflowSetting	admission	SNOMED CT	305056002 Admission procedure (procedure)	N/A	N/A

Models

Table 5. Model References

Referenced Model	Description
urn:solor.io:anf-model:0.9	VA Analysis Normal Form Model

Chapter 1. External Data Definitions

No externalData expression definitions and no trigger definitions are present.

Chapter 2. Expression Definitions

No expression definitions are present.

Chapter 3. Admit to

Admit To?

Logi- cal # #	<p># prompt: Medical Ward</p> <p>response: Boolean (Single)</p> <p>responseBinding: Property ("admitToMedicalWard")</p> <p>Condition:elm:IsTrue (elm:Property("admitToMedicalWard" from: elm:ParameterRef(Responses)))</p> <p># Medical Ward</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 305342007 Admission to ward (procedure) </p>
Logi- cal # #	<p># prompt: Telemetry</p> <p>response: Boolean (Single)</p> <p>responseBinding: Property ("admitToTelemetry")</p> <p>Condition:elm:IsTrue (elm:Property("admitToTelemetry" from: elm:ParameterRef(Responses)))</p> <p># Telemetry</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 75f0ca2c-e68a-44ca-81f8-10e53ff7a855 Admission to telemetry department (procedure) </p>
Logi- cal # #	<p># prompt: Stepdown unit</p> <p>response: Boolean (Single)</p> <p>responseBinding: Property ("admitToStepdownUnit")</p> <p>Condition:elm:IsTrue (elm:Property("admitToStepdownUnit" from: elm:ParameterRef(Responses)))</p> <p># Stepdown unit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 4d555c8a-d2af-4dbf-b81a-9eaddec2a7d8 Admission to stepdown unit (procedure) </p>
Logi- cal # #	<p># prompt: ICU</p>

Logical # #	<p>response: Boolean (Single)</p> <p>responseBinding: Property ("admitToICU")</p> <p>Condition:elm:IsTrue (elm:Property("admitToICU" from: elm:ParameterRef(Responses)))</p> <p># ICU</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 305351004 Admission to intensive care unit (procedure) </p>
	<p># prompt: Other Location</p> <p>response: Boolean (Single)</p> <p>responseBinding: Property ("admitToOtherLocation")</p> <p>Condition:elm:IsTrue (elm:Property("admitToOtherLocation" from: elm:ParameterRef(Responses)))</p> <p># Other Location</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 305056002 Admission procedure (procedure) </p>

Chapter 4. Diagnosis?

prompt: Congestive heart failure (CHF)

response: Code (Single)

response EnumerationConstraint (List)

range:

item: Congestive heart failure (CHF)([a997cc03-3e99-40eb-833a-6374c7750a3a |Observation
procedure (procedure)] ->(363702006 |Has focus (attribute))->[42343007 |Congestive heart
failure (disorder)])

☞ item: Obtain Other Diagnosis

Chapter 5. Allergies

Medication Allergies?

Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] -
>(363702006 |Has focus (attribute))->[416098002 |Drug allergy (disorder)]

prompt: No known drug allergies

itemCode: [a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] -
>(363702006 |Has focus (attribute))->[416098002 |Drug allergy (disorder)]

response: Boolean (Single)

Obtain Other List of allergies

prompt: Obtain Other List of allergies

response: Code (Multiple)

Chapter 6. Code Status

prompt: Code Status?

response: Code (Single)

response EnumerationConstraint (List)

range:

item: Full code([a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[304252001 |For resuscitation (finding)])

item: Do Not Resuscitate (DNR)([a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[304253006 |Not for resuscitation (finding)])

item: Do Not Intubate (DNI)([a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[1371000205103 |Not for intubation (finding)])

☞ item: Other Code Status

Chapter 7. Vital Signs and Monitoring

# Continuous telemetry	
#	Vital signs
#	Routine
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 61746007 Taking patient vital signs (procedure) priority: Precoordinated Expression 50811001 Routine (qualifier val- ue)	
Logical #	#
# prompt: Obtain Vital Sign Frequency in Hours response: Real (Single) responseBinding: Property ("vitalSignFrequency") # Obtain Vital Sign Every User Input Hours actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 61746007 Taking pa- tient vital signs (procedure) priority: Precoordinated Expression 50811001 Routine (qualifier value) repetition[0].periodDuration.lowerBound: 1 repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: false repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoor- dinated Expression 258702006 hour (qualifier value) repetition[0].eventFrequency.lowerBound: vitalSignFre- quency repetition[0].eventFrequency.upperBound: vitalSignFre- quency repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.measureSemantic: Preco- ordinated Expression 258702006 hour (qualifier value)	
#	With pulse oximetry
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	

	<pre> statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 252465000 Pulse oximetry (proce- dure) repetition[0].periodDuration.lowerBound: 1 repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: false repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoordinated Ex- pression 258702006 hour (qualifier value) repetition[0].eventFrequency.lowerBound: vitalSignFrequency repetition[0].eventFrequency.upperBound: vitalSignFrequency repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.measureSemantic: Precoordinated Ex- pression 258702006 hour (qualifier value) </pre>
# Weight daily (pounds)	<pre> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 39857003 Weighing patient (procedure) requestedResult.measureSemantic: Precoordinated Expression 258693003 pounds (qualifier value) </pre>
# Height (inches)	<pre> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 14456009 Measuring height of patient (procedure) requestedResult.measureSemantic: Precoordinated Expression 258677007 Inch (qualifier value) </pre>
Condition: elm:IsTrue (elm:Property("admitToMedicalWard" from: elm:ParameterRef(Responses)))	
Medical Ward?	
If admitted to medical ward, then display the medical ward section.	
# Oxygen saturation every 4 hours	<pre> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 39857003 Weighing patient (procedure) repetition[0].eventFrequency.lowerBound: 4 repetition[0].eventFrequency.upperBound: 4 repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258702006 hour (qualifier value) </pre>

Logical # #	Intake/output recording
	<p>⊕ Routine per local policy</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 63061008 Measuring intake and output (procedure) </p> <p>unstructured[0]: per local policy</p> <p>priority: Precoordinated Expression 50811001 Routine (qualifier value) </p> <p>⊕ Strict per local policy</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>topic: Precoordinated Expression 63061008 Measuring intake and output (procedure) </p> <p>unstructured[0]: strict per local policy</p>
Logical # ⊕	<p># prompt: Intake/Output Recording Frequency</p> <p>response: Real (Single)</p> <p>responseBinding: Property ("intakeOutputRecordingFrequency")</p> <p># Intake/Output Recording Frequency in Hours</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 63061008 Measuring intake and output (procedure) </p> <p>repetition[0].eventFrequency.lowerBound: intakeOutputRecordingFrequency</p> <p>repetition[0].eventFrequency.upperBound: intakeOutputRecordingFrequency</p> <p>repetition[0].eventFrequency.includeLowerBound: true</p> <p>repetition[0].eventFrequency.includeUpperBound: true</p> <p>repetition[0].eventFrequency.measureSemantic: intake-OutputRecordingFrequency</p>
	<p>Condition:elm:IsTrue (elm:Property("admitToICU" from: elm:ParameterRef(Responses)))</p> <p>ICU?</p>
	If admitted to ICU, then display the ICU section.
	# Oxygen saturation continuous
	<p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 104847001 Oxygen saturation measurement (procedure) </p> <p>repetition[0].periodDuration.lowerBound: 1</p>

```

repetition[0].periodDuration.includeLowerBound: true
repetition[0].periodDuration.includeUpperBound: false
repetition[0].periodDuration.resolution: 1
repetition[0].periodDuration.measureSemantic: Precoordinated Expression
258701004 |min (qualifier value)|

```

Intake and output

⊗ Routine

```

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested
    (qualifier value)|
    topic: Precoordinated Expression 63061008 |Measuring intake and out-
    put (procedure)|
    priority: Precoordinated Expression 50811001 |Routine (qualifier val-
    ue)|

```

⊗ Strict

```

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested
    (qualifier value)|
    topic: Precoordinated Expression 44ee63fe-94f-
    b-4cf1-97d7-a2e73075596f |Measuring intake and output, strict (proce-
    dure)

```

⊗ Every 1 hour

```

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested
    (qualifier value)|
    topic: Precoordinated Expression 63061008 |Measuring intake and out-
    put (procedure)|
    repetition[0].periodDuration.lowerBound: 1
    repetition[0].periodDuration.includeLowerBound: true
    repetition[0].periodDuration.includeUpperBound: false
    repetition[0].periodDuration.measureSemantic: Precoordinated Ex-
    pression 258702006 |hour (qualifier value)|
    repetition[0].eventFrequency.lowerBound: 1
    repetition[0].eventFrequency.upperBound: 1
    repetition[0].eventFrequency.includeLowerBound: true
    repetition[0].eventFrequency.includeUpperBound: true
    repetition[0].eventFrequency.measureSemantic: Precoordinated Ex-
    pression 258702006 |hour (qualifier value)|

```

Invasive hemodynamic monitoring

```

Represented Concepts: 386341005 |Invasive hemodynamic monitoring (regime/ther-
apy)|

```

Arterial line

```

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

```

statementType: Precoordinated Expression 385644000 |Requested
(qualifier value)|

topic: Precoordinated Expression 392247006 |Insertion of catheter into
artery (procedure)|

Pulmonary artery catheter

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested
(qualifier value)|

topic: Precoordinated Expression 82936005 |Introduction of catheter
into pulmonary artery (procedure)|

Chapter 8. Activity

```
# Bed rest
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
    value)|
    topic: Precoordinated Expression 225316001 |Bedrest (regime/therapy)|

# Bed rest with bedside commode
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
    value)|
    topic: Precoordinated Expression 1d5d8220-9818-4c10-a471-3b9ad32d061e |
    Bedrest with bedside commode (regime/therapy)

# Bed rest with bathroom privileges
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
    value)|
    topic: Precoordinated Expression 424410003 |Bedrest with bathroom privi-
    leges (regime/therapy)|

Logical # #
    # prompt: Frequency
    response: String (Single)
responseBinding: Property ("ambulateWithAssistanceFrequency")
# Ambulate with assistance with user provided frequency
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |
    Requested (qualifier value)|
    topic: Precoordinated Expression
    b43fa6a5-94a3-4098-8514-b4b5da9b899d |Ambulating
    with assistance (regime/therapy)
    repetition[0].eventFrequency.lowerBound: ambulateWith-
    AssistanceFrequency
    repetition[0].eventFrequency.upperBound: ambulateWith-
    AssistanceFrequency
    repetition[0].eventFrequency.includeLowerBound: true
    repetition[0].eventFrequency.includeUpperBound: true
    repetition[0].eventSeparation.resolution: ambulateWithAs-
    sistanceFrequency

# Occupational/physical therapy assessment/assistance
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
    value)|
```

Logical # #	<p>topic: Precoordinated Expression 410155007 Occupational therapy assessment (procedure) </p> <hr/> <p># prompt: Frequency response: String (Single) responseBinding: Property ("outOfBedToChairFrequency") # Out of bed to chair with user provided Frequency actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 445970000 Moving subject from bed to chair (procedure) repetition[0].eventFrequency.lowerBound: outOfBedToChairFrequency repetition[0].eventFrequency.upperBound: outOfBedToChairFrequency repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true</p>
Logical # #	<hr/> <p># prompt: Activity response: String (Single) responseBinding: Property ("userSpecifiedOtherActivity") # User Specified Other activity actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: userSpecifiedOtherActivity</p>
Logical # #	<hr/> <p># prompt: Reason response: Code (Single) response range: EnumerationConstraint (List) item: May be off telemetry for lab testing([223438000 Recommendation to discontinue a procedure (procedure)] ->(363702006 Has focus (attribute))->[15220000 Laboratory test (procedure)]) item: May be off telemetry for imaging studies([223438000 Recommendation to discontinue a procedure (procedure)] ->(363702006 Has focus (attribute))->[422952004 Cardiac telemetry (regime/therapy)]) item: May be off telemetry for imaging studies([223438000 Recommendation to discontinue a procedure (procedure)] ->(363702006 Has focus (attribute))->[363679005 Imaging (procedure)]) responseBinding: Property ("offTelemetryReason")</p>

	<p># May be off telemetry for Reason</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 </p> <p>Requested (qualifier value) </p> <p>topic: offTelemetryReason</p>
--	---

Chapter 9. Nursing

Urinary Catheter

Visual ► #

Insert Foley (indwelling urinary) catheter (note: routine urinary catheterization not recommended unless benefits outweigh risks)

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 446583004 |Insertion of indwelling catheter into urinary bladder (procedure)|

#

Discontinue urinary catheter after 48hrs (reorder for continued use)

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 446583004 |Insertion of indwelling catheter into urinary bladder (procedure)|

unstructured[0]: reorder for continued use

repetition[0].periodDuration.lowerBound: 0

repetition[0].periodDuration.upperBound: 48

repetition[0].periodDuration.includeLowerBound: false

repetition[0].periodDuration.includeUpperBound: true

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258702006 |hour (qualifier value)|

Condom catheter

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 46a4b669-f7e6-4aa7-8ad8-7ff5c1fbce83 |Catheterization of urinary bladder using condom catheter (procedure)|

Peripheral Intravenous (IV) Line

Insert peripheral IV line

⊕ Saline lock

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 6b343927-35d-f-458e-b365-69fd00ba12e6 |Insertion of peripheral venous cannula with saline lock (procedure)|

⊕ Heparin lock

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

	<p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 491e8c86-91e0-49a7-a4a3-dd1da05ad071 Insertion of peripheral venous cannula with heparin lock (procedure)</p>
# Routine IV Care per local policy	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	<p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 423687009 Peripheral intravenous catheter care (regime/therapy) </p> <p>unstructured[0]: per local policy</p>
Fluid Restriction	
Logical # #	<p># prompt: Maximum liters per 24 hours</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("maximumLitersPerDay")</p> <p># Restrict Fluids</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 25389001 Fluid restriction (procedure) </p> <p>requestedResult.lowerBound: maximumLitersPerDay</p> <p>requestedResult.upperBound: maximumLitersPerDay</p> <p>requestedResult.includeLowerBound: true</p> <p>requestedResult.includeUpperBound: true</p> <p>requestedResult.resolution: 1</p> <p>requestedResult.measureSemantic: Precoordinated Expression 258858008 Liter/24 hours (qualifier value) </p>
Diet	
* Regular	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	<p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Regular 400c3d0a-171f-4b6f-83f8-638e72a22068 Regular diet (regime/therapy)</p>
* Nil per os (NPO)	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	<p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 182923009 Nil by mouth (regime/therapy) </p>
* Cardiac diet	
# Low sodium	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	

	<p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 437421000124105 Decreased sodium diet (regime/therapy) </p> <p># Low cholesterol</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 436711000124106 Decreased cholesterol diet (regime/therapy) </p> <p># Low fat</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression 436861000124104 Decreased fat diet (regime/therapy) </p>
* 2gm Na	<p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: 2gm Na fcb801a9-8501-4343-a466-ace348383326 Cardiac semi-soft 2 gram sodium diet (regime/therapy)</p>
* No added salt	<p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression d37a9b17-bcb1-48a2-ab42-6b952d49404f No salt added diet (regime/therapy)</p>
Logical # *	<p># prompt: Calories</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("userProvidedCaloriesValue")</p> <p># Calories</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression a6894e46-3838-430b-b163-99fc45eada51 Diabetic diet (regime/therapy)</p> <p>requestedResult.lowerBound: maximumLitersPerDay</p> <p>requestedResult.upperBound: userProvidedCaloriesValue</p> <p>requestedResult.includeLowerBound: true</p> <p>requestedResult.includeUpperBound: true</p> <p>requestedResult.resolution: 1</p> <p>requestedResult.measureSemantic: Precoordinated Expression 258790008 calorie (qualifier value) </p>

Logical # *	
	<div># prompt: Diet</div> <div>response: Tuple (Multiple)</div> <div>response EnumerationConstraint (List)</div> <div>range:</div> <div>item: tube feeding(61420007 Tube feeding of patient (regime/therapy))</div> <div>item: Total Parenteral Nutrition (TPN)(225372007 Total parenteral nutrition (regime/therapy))</div> <div>☞ item: Other diet</div> <div># Other Diet</div> <div>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</div> <div>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </div> <div>topic: Precoordinated Expression TSR-NoCode</div>

Chapter 10. Venous Thromboembolism (VTE) Prophylaxis

# Conduct VTE prophylaxis risk screening	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
statementType: Precoordinated Expression 385644000 Requested (qualifier value)	
topic: Precoordinated Expression 443749004 Assessment of risk of venous thromboembolism (procedure)	
# Order appropriate VTE protocol	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
statementType: Precoordinated Expression 385644000 Requested (qualifier value)	
topic: Precoordinated Expression 439993001 Prevention of deep vein thrombosis (regime/therapy)	
Notify Clinician for:	
Logical # #	# Temperature in Degrees Celsius prompt: Temperature response: Real (Single) responseBinding: Property ("temperatureMeasurement") # High Temperature Notification Limit prompt: High Temperature Notification Limit in Degrees Celsius response: Real (Single) responseBinding: Property ("highTemperatureLimit") initialValue: elm:Literal (Real) 38.5 Condition: elm:Greater (elm:Property("temperatureMeasurement" from: elm:ParameterRef(Responses)) elm:Property("highTemperatureLimit" from: elm:ParameterRef(Responses))) # Temperature greater than high temperature notification limit actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression TSR-NoCode
Logical # #	# Systolic Blood Pressure prompt: Systolic Blood Pressure response: Integer (Single) responseBinding: Property ("systolicBloodPressure")

Logical # #

High Systolic Blood Pressure Notification Limit [default: 170 mmHg]
 prompt: High Systolic Blood Pressure Notification Limit
 in mmHg
 response: Integer (Single)
responseBinding: Property ("highSystolicBloodPressureLimit")
initialValue: elm:Literal (Real) 170
Condition:elm:Greater (elm:Property("systolicBloodPressure" from:
 elm:ParameterRef(Responses)) elm:Property("highSystolicBloodPres-
 sureLimit" from: elm:ParameterRef(Responses)))
 # Systolic blood pressure (BP) measurement is greater than high notifi-
 cation limit
 actionSentence[type=elm:Instance, classType=anf:ClinicalState-
 ment-Notification]
 statementType: Precoordinated Expression
 385644000 |Requested (qualifier value)|
 topic: Precoordinated Expression TSR-NoCode

Logical # #

Systolic Blood Pressure
 prompt: Systolic Blood Pressure
 response: Integer (Single)
 # Low Systolic Blood Pressure Notification Limit [default: 90 mmHg]
 prompt: Low Systolic Blood Pressure Notification Limit
 in mmHg
 response: Integer (Single)
responseBinding: Property ("lowSystolicBloodPressureLimit")
initialValue: elm:Literal (Real) 90
Condition:elm:Less (elm:Property("systolicBloodPressure" from:
 elm:ParameterRef(Responses)) elm:Property("lowSystolicBloodPres-
 sureLimit" from: elm:ParameterRef(Responses)))
 # Systolic blood pressure (BP) measurement is lower than low notifica-
 tion limit
 actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
 statementType: Precoordinated Expression
 385644000 |Requested (qualifier value)|
 topic: Precoordinated Expresssion TSR-
 NoCode

Diastolic Blood Pressure
 prompt: Diastolic Blood Pressure
 response: Integer (Single)
responseBinding: Property ("diastolicBloodPressure")
 # High Diastolic Blood Pressure Notification Limit [default: 110
 mmHg]

Logical # #	<p>prompt: High Diastolic Blood Pressure Notification Limit in mmHg</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("highDiastolicBloodPressureLimit")</p> <p>initialValue: elm:Literal (Real) 110</p> <p>Condition:elm:Greater (elm:Property("diastolicBloodPressure" from: elm:ParameterRef(Responses)) elm:Property("highDiastolicBloodPressureLimit" from: elm:ParameterRef(Responses)))</p> <p># Diastolic blood pressure (BP) is greater than high notification limit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression</p> <p>385644000 Requested (qualifier value) </p> <p>topic: Precoordinated Expression TSR-NoCode</p>
	<p># Diastolic Blood Pressure</p> <p>prompt: Diastolic Blood Pressure</p> <p>response: Integer (Single)</p> <p># Low Diastolic Blood Pressure Notification Limit [default: 40 mmHg]</p> <p>prompt: Low Diastolic Blood Pressure Notification Limit in mmHg</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("lowDiastolicBloodPressureLimit")</p> <p>initialValue: elm:Literal (Real) 40</p> <p>Condition:elm:Less (elm:Property("diastolicBloodPressure" from: elm:ParameterRef(Responses)) elm:Property("lowDiastolicBloodPressureLimit" from: elm:ParameterRef(Responses)))</p> <p># Diastolic blood pressure (BP) measurement is lower than low notification limit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>topic: Precoordinated Expression TSR-NoCode</p>
Logical # #	<p># Heart Rate</p> <p>prompt: Heart rate</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("heartRate")</p> <p># High Heart Rate Notification Limit [default: 130 bpm]</p> <p>prompt: High Heart Rate Notification Limit in bpm</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("highHeartRateLimit")</p> <p>initialValue: elm:Literal (Real) 130</p>

Logical # #	<p>Condition:elm:Greater (elm:Property("heartRate" from: elm:ParameterRef(Responses)) elm:Property("highHeartRateLimit" from: elm:ParameterRef(Responses)))</p> <p># Heart Rate is greater than high notification limit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>topic: Precoordinated Expression TSR-NoCode</p>
Logical # #	<p># Heart Rate</p> <p>prompt: Heart rate</p> <p>response: Integer (Single)</p> <p># Low Heart Rate Notification Limit [default: 50 bpm]</p> <p>prompt: Low Heart Rate Notification Limit in bpm</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("lowHeartRateLimit")</p> <p>initalValue: elm:Literal (Real) 50</p> <p>Condition:elm:Less (elm:Property("heartRate" from: elm:ParameterRef(Responses)) elm:Property("lowHeartRateLimit" from: elm:ParameterRef(Responses)))</p> <p># Heart Rate is less than high notification limit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>topic: Precoordinated Expression TSR-NoCode</p>
Logical # #	<p># Respiratory Rate</p> <p>prompt: Respiratory rate</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("respiratoryRate")</p> <p># High Respiratory Rate Notification Limit [default: 24 breaths per minute]</p> <p>prompt: High Respiratory Rate Notification Limit in breaths per minute</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("highRespiratoryRateLimit")</p> <p>initalValue: elm:Literal (Real) 24</p> <p>Condition:elm:Greater (elm:Property("respiratoryRate" from: elm:ParameterRef(Responses)) elm:Property("highRespiratoryRateLimit" from: elm:ParameterRef(Responses)))</p> <p># Respiratory Rate is greater than high notification limit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>topic: Precoordinated Expression TSR-NoCode</p>

Logical # #	<p># Respiratory Rate</p> <p>prompt: Respiratory rate</p> <p>response: Integer (Single)</p> <p># Low Respiratory Rate Notification Limit [default: 10 breaths per minute]</p> <p>prompt: Low Respiratory Rate Notification Limit in breaths per minute</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("lowRespiratoryRateLimit")</p> <p>initialValue: elm:Literal (Real) 10</p> <p>Condition:elm:Less (elm:Property("respiratoryRate" from: elm:ParameterRef(Responses)) elm:Property("lowRespiratoryRateLimit" from: elm:ParameterRef(Responses)))</p> <p># Respiratory Rate is greater than high notification limit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>topic: Precoordinated Expression TSR-NoCode</p>
	<p># Respiratory Rate</p> <p>prompt: Urine Output</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("urineOutputLimit")</p> <p># Low Urine Output Notification Limit [default: 0.5 mL/kg/hr]</p> <p>prompt: Low Urine Output Notification Limit in mL/kg/hr</p> <p>response: Integer (Single)</p> <p>responseBinding: Property ("lowUrineOutputLimit")</p> <p>initialValue: elm:Literal (Real) 0.5</p> <p>Condition:elm:Less (elm:Property("urineOutputLimit" from: elm:ParameterRef(Responses)) elm:Property("lowUrineOutputLimit" from: elm:ParameterRef(Responses)))</p> <p># Urine Output is less than low notification limit</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>topic: Precoordinated Expression TSR-NoCode</p>

Chapter 11. Immunizations

Pneumovax

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Postcoordinated Expression [416118004 |Administration (procedure)] ->(260686004 |

Method (attribute))->[129445006 |Administration - action (qualifier value)] ->(363701004 |

Direct substance (attribute))->[398730001 |Pneumococcal vaccine (substance)]

Influenza vaccine

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Postcoordinated Expression [416118004 |Administration (procedure)] ->(260686004 |

Method (attribute))->[129445006 |Administration - action (qualifier value)] ->(363701004 |

Direct substance (attribute))->[46233009 |Influenza virus vaccine (product)]

Chapter 12. Laboratory Tests

Basic metabolic profile now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 1421000205106 |Basic metabolic panel (procedure)

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Basic metabolic profile daily

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 1421000205106 |Basic metabolic panel (procedure)

repetition[0].periodDuration.lowerBound: 1

repetition[0].periodDuration.includeLowerBound: true

repetition[0].periodDuration.includeUpperBound: false

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258702006 |hour (qualifier value)|

repetition[1].periodDuration.lowerBound: 1

repetition[1].periodDuration.upperBound: 1

repetition[1].periodDuration.includeLowerBound: true

repetition[1].periodDuration.includeUpperBound: true

repetition[1].periodDuration.resolution: 1

repetition[1].periodDuration.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

Complete metabolic panel now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 1411000205104 |Comprehensive metabolic panel (procedure)

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Complete metabolic panel in AM

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 1411000205104 |Comprehensive metabolic panel (procedure)

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

repetition[0].periodDuration.lowerBound: 1

repetition[0].periodDuration.upperBound: 1

repetition[0].periodDuration.includeLowerBound: true

repetition[0].periodDuration.includeUpperBound: true

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

Brain natriuretic peptide now

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 390917008 |Brain natriuretic peptide measurement (procedure)|
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
```

Brain natriuretic peptide in AM

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 390917008 |Brain natriuretic peptide measurement (procedure)|
  repetition[0].eventFrequency.lowerBound: 1
  repetition[0].eventFrequency.upperBound: 1
  repetition[0].eventFrequency.includeLowerBound: true
  repetition[0].eventFrequency.includeUpperBound: true
  repetition[0].eventFrequency.resolution: 1
  repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|
```

Complete blood count now

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 26604007 |Complete blood count (procedure)|
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
```

Complete blood count in AM

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 26604007 |Complete blood count (procedure)|
  repetition[0].eventFrequency.lowerBound: 1
  repetition[0].eventFrequency.upperBound: 1
  repetition[0].eventFrequency.includeLowerBound: true
  repetition[0].eventFrequency.includeUpperBound: true
  repetition[0].eventFrequency.resolution: 1
  repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|
```

Fasting lipid profile in AM

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 252150008 |Fasting lipid profile (procedure)|
  repetition[0].eventFrequency.lowerBound: 1
  repetition[0].eventFrequency.upperBound: 1
  repetition[0].eventFrequency.includeLowerBound: true
  repetition[0].eventFrequency.includeUpperBound: true
  repetition[0].eventFrequency.resolution: 1
```

repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

Partial Thromboplastin Time (PTT) now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 42525009 |Partial thromboplastin time, activated (procedure)|

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Partial Thromboplastin Time (PTT) in AM

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 42525009 |Partial thromboplastin time, activated (procedure)|

repetition[0].eventFrequency.lowerBound: 1

repetition[0].eventFrequency.upperBound: 1

repetition[0].eventFrequency.includeLowerBound: true

repetition[0].eventFrequency.includeUpperBound: true

repetition[0].eventFrequency.resolution: 1

repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

Prothrombin Time (PT)/International Normalized Ratio (INR) now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 396451008 |Prothrombin time (procedure)|

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Prothrombin Time (PT)/International Normalized Ratio (INR) daily

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 396451008 |Prothrombin time (procedure)|

repetition[0].eventFrequency.lowerBound: 1

repetition[0].eventFrequency.includeLowerBound: true

repetition[0].eventFrequency.includeUpperBound: false

repetition[0].eventFrequency.upperBound: 1

repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 |day (qualifier value)|

repetition[0].periodDuration.lowerBound: 1

repetition[0].periodDuration.upperBound: 1

repetition[0].periodDuration.includeLowerBound: true

repetition[0].periodDuration.includeUpperBound: true

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

Liver function testing daily

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  topic: Precoordinated Expression 26958001 |Hepatic function panel (procedure)|
  repetition[0].eventFrequency.lowerBound: 1
  repetition[0].eventFrequency.includeLowerBound: true
  repetition[0].eventFrequency.includeUpperBound: false
  repetition[0].eventFrequency.upperBound: 1
  repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 |day
(qualifier value)|
  repetition[0].periodDuration.lowerBound: 1
  repetition[0].periodDuration.upperBound: 1
  repetition[0].periodDuration.includeLowerBound: true
  repetition[0].periodDuration.includeUpperBound: true
  repetition[0].periodDuration.resolution: 1
  repetition[0].periodDuration.measureSemantic: Precoordinated Expression 73775008 |Morning
(qualifier value)|

# Thyroid Stimulating Hormone (TSH) now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 61167004 |Thyroid stimulating hormone measurement (proce-
dure)|
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

# Thyroid Stimulating Hormone (TSH) in AM
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 61167004 |Thyroid stimulating hormone measurement (proce-
dure)|
  repetition[0].periodDuration.lowerBound: 1
  repetition[0].periodDuration.upperBound: 1
  repetition[0].periodDuration.includeLowerBound: true
  repetition[0].periodDuration.includeUpperBound: true
  repetition[0].periodDuration.resolution: 1
  repetition[0].periodDuration.measureSemantic: Precoordinated Expression 73775008 |Morning
(qualifier value)|

# Troponin I
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 121870001 |Troponin I measurement (procedure)|
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

# Troponin I q 8 hours x 3
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
```

topic: Precoordinated Expression 121870001 |Troponin I measurement (procedure)|
repetition[0].eventFrequency.lowerBound: 8
repetition[0].eventFrequency.upperBound: 8
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258702006 |hour
(qualifier value)|
repetition[0].eventDuration.lowerBound: 24
repetition[0].eventDuration.upperBound: 24
repetition[0].eventDuration.includeLowerBound: true
repetition[0].eventDuration.includeUpperBound: true
repetition[0].eventDuration.measureSemantic: Precoordinated Expression 258702006 |hour
(qualifier value)|

Magnesium now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 38151008 |Magnesium measurement (procedure)|
priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Magnesium in AM

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 38151008 |Magnesium measurement (procedure)|
repetition[0].eventFrequency.lowerBound: 1
repetition[0].eventFrequency.upperBound: 1
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.resolution: 1
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning
(qualifier value)|

Digoxin level now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 25514001 |Digoxin measurement (procedure)|
priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Digoxin level in AM urinalysis

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 7ab0a3e5-ea2d-45c4-916a-6e03a4771b93 |Urine digoxin mea-
surement (procedure)|
repetition[0].eventFrequency.lowerBound: 1
repetition[0].eventFrequency.upperBound: 1

```
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.resolution: 1
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning
(qualifier value)|
```

Arterial Blood Gas now

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 91308007 |Blood gases, arterial measurement (procedure)|
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
```

Point of Care Tests

Blood glucose every 4 hours

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Blood glucose 33747003 |Glucose measurement, blood (procedure)|
  repetition[0].eventFrequency.lowerBound: 4
  repetition[0].eventFrequency.includeLowerBound: true
  repetition[0].eventFrequency.includeUpperBound: false
  repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258702006 |hour (qualifier value)|
```

Blood glucose now

```
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 33747003 |Glucose measurement, blood (procedure)|
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
```

Chapter 13. Diagnostic Testing

12-lead electrocardiogram (Dx: heart failure) now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 268400002 |12 lead electrocardiogram (procedure)|

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] ->(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]

12-lead electrocardiogram (Dx: heart failure) in AM

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 268400002 |12 lead electrocardiogram (procedure)|

purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] ->(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]

repetition[0].eventFrequency.lowerBound: 1

repetition[0].eventFrequency.upperBound: 1

repetition[0].eventFrequency.includeLowerBound: true

repetition[0].eventFrequency.includeUpperBound: true

repetition[0].eventFrequency.resolution: 1

repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

Log-ical # # X-ray chest (Dx: heart failure)

Posterioranterior (PA)/Lateral now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 42869005 |Diagnostic radiography of chest, combined posteroanterior and lateral (procedure)|

purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] ->(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Posterioranterior (PA)/Lateral in AM

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 42869005 |Diagnostic radiography of chest, combined posteroanterior and lateral (procedure)|

purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] ->(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]

repetition[0].eventFrequency.lowerBound: 1

```

repetition[0].eventFrequency.upperBound: 1
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.resolution: 1
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

# Portable Anteroposterior (AP) now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  topic: Postcoordinated Expression [67632007 |Diagnostic radiography of chest, posteroanterior (procedure)]- -(260686004 |Method (attribute))->[278110001 |Radiographic imaging - action (qualifier value)]- -(405813007 |Procedure site - Direct (attribute))->[51185008 |Thoracic structure (body structure)] -(424226004 |Using device (attribute))->[468611003 |Diagnostic x-ray system generator, portable (physical object)];
  purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

# Portable Anteroposterior (AP) in AM
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  topic: Postcoordinated Expression [67632007 |Diagnostic radiography of chest, posteroanterior (procedure)]- -(260686004 |Method (attribute))->[278110001 |Radiographic imaging - action (qualifier value)]- -(405813007 |Procedure site - Direct (attribute))->[51185008 |Thoracic structure (body structure)] -(424226004 |Using device (attribute))->[468611003 |Diagnostic x-ray system generator, portable (physical object)];
  purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]
  repetition[0].eventFrequency.lowerBound: 1
  repetition[0].eventFrequency.upperBound: 1
  repetition[0].eventFrequency.includeLowerBound: true
  repetition[0].eventFrequency.includeUpperBound: true
  repetition[0].eventFrequency.resolution: 1
  repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning (qualifier value)|

# Echocardiogram, transthoracic (TTE) (Dx: Heart failure) now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
  statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
  topic: Precoordinated Expression 433236007 |Transthoracic echocardiography (procedure)|
  purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]
  priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

```


Echocardiogram, transthoracic (TTE) (Dx: Heart failure) in AM

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 433236007 |Transthoracic echocardiography (procedure)|
purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -
>(363702006 |Has focus (attribute))->[84114007 |Heart failure (disorder)]
repetition[0].eventFrequency.lowerBound: 1
repetition[0].eventFrequency.upperBound: 1
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.resolution: 1
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning
(qualifier value)|

Echocardiogram, transesophageal (TEE), (Dx: Heart failure) now

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 105376000 |Transesophageal echocardiography (procedure)|
priority: Precoordinated Expression 49499008 |Stat (qualifier value)|

Echocardiogram, transesophageal (TEE), (Dx: Heart failure) in AM

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 105376000 |Transesophageal echocardiography (procedure)|
repetition[0].eventFrequency.lowerBound: 1
repetition[0].eventFrequency.upperBound: 1
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.resolution: 1
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 73775008 |Morning
(qualifier value)|

Thallium Myocardial Perfusion Imaging (MPI) viability testing

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Thallium Myocardial Perfusion Imaging (MPI) viability testing 431511008 |Myocardial
perfusion stress imaging using Thallium 201 (procedure)|

MPI single-photon emission computed tomography (SPECT) for the etiology of cardiomyopathy

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
topic: Precoordinated Expression 16545381000119101 |Single photon emission computed to-
mography of myocardial perfusion with computed tomography (procedure)|
purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -
>(363702006 |Has focus (attribute))->[85898001 |Cardiomyopathy (disorder)]

Cardiac magnetic resonance imaging (MRI) (with Gd delayed enhancement) for viability/etiology of cardiomyopathy

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression c8006fd5-76d8-4c36-aa0c-90e6ff79d787 |Magnetic resonance imaging of heart with delayed gadolinium contrast (procedure)

purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -
>(363702006 |Has focus (attribute))->[85898001 |Cardiomyopathy (disorder)]

Multigated Acquisition Scan (MUGA) to define the Left Ventricular Ejection Fraction (LVEF) and/or Right Ventricular Ejection Fraction (RVEF)

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 404221001 |Multiple gated acquisition scanning (procedure)|

purpose[0]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -
>(363702006 |Has focus (attribute))->[250908004 |Left ventricular ejection fraction (observable entity)]

purpose[1]: Postcoordinated Expression [386053000 |Evaluation procedure (procedure)] -
>(363702006 |Has focus (attribute))->[250939002 |Right ventricular ejection fraction (observable entity)]

Chapter 14. Oxygen

Oxygen therapy per protocol

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 57485005 |Oxygen therapy (procedure)|

unstructured[0]: per protocol

Sen-

tence

#

prompt: Obtain Nasal cannula rate in L/min

response: *Response Data Type Needed*

responseBinding: Property ("nasalCannulaRate")

initialValue: elm:Literal (String) 2 L/min

User provided nasal cannula rate in L/min

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 371907003 |Oxygen administration by nasal cannula (procedure)|

repetition[0].periodDuration.lowerBound: nasalCannulaRate

repetition[0].periodDuration.upperBound: nasalCannulaRate

repetition[0].periodDuration.includeLowerBound: true

repetition[0].periodDuration.includeUpperBound: true

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258994006 |Liter/minute (qualifier value)|

Titrate to oxygen saturation > 90%

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 371907003 |Oxygen administration by nasal cannula (procedure)|

requestedResult.lowerBound: 91

requestedResult.upperBound: 100

requestedResult.includeLowerBound: true

requestedResult.includeUpperBound: true

requestedResult.resolution: 1

requestedResult.measureSemantic: Precoordinated Expression 258858008 |Liter/24 hours (qualifier value)|

repetition[0].periodDuration.lowerBound: nasalCannulaRate

repetition[0].periodDuration.upperBound: nasalCannulaRate

repetition[0].periodDuration.includeLowerBound: true

```

    repetition[0].periodDuration.includeUpperBound: true
    repetition[0].periodDuration.resolution: 1
    repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258752002 |% oxyhemoglobin (qualifier value)|
# Face mask 40% fraction of inspired oxygen (FiO2) titrate to oxygen saturation > 90%
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
    topic: Precoordinated Expression 371908008 |Oxygen administration by mask (procedure)|
    requestedResult.lowerBound: 91
    requestedResult.upperBound: 100
    requestedResult.includeLowerBound: true
    requestedResult.includeUpperBound: true
    requestedResult.resolution: 1
    requestedResult.measureSemantic: Precoordinated Expression 258752002 |% oxyhemoglobin (qualifier value)|
# Nonrebreather face mask 15 L titrate to oxygen saturation > 90%
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
    topic: Precoordinated Expression 429253002 |Oxygen administration by Venturi mask (procedure)|
    requestedResult.lowerBound: 91
    requestedResult.upperBound: 100
    requestedResult.includeLowerBound: true
    requestedResult.includeUpperBound: true
    requestedResult.resolution: 1
    requestedResult.measureSemantic: Precoordinated Expression 258752002 |% oxyhemoglobin (qualifier value)|

```

Chapter 15. Consults and Referrals

Consult cardiology

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 1221000205105 |Cardiology consultation and report (procedure)

Advanced heart failure service for heart failure management

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 1231000205107 |Advanced heart failure service consultation and report (procedure)

unstructured[0]: for heart failure management

Consult electrophysiology service for consideration of device therapy [(Implantable Cardioverter-Defibrillator (ICD), Cardiac Resynchronization Therapy (CRT)]

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Precoordinated Expression 1241000205102 |Electrophysiology service consultation and report (procedure)

unstructured[0]: for consideration of device therapy [(Implantable Cardioverter- Defibrillator (ICD), Cardiac Resynchronization Therapy (CRT)]

Chapter 16. Medications

Log- ical # #	<p>IV Fluid</p> <hr/> <p># Normal saline (NS)</p> <pre> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression 297751002 Infusion of saline solution (procedure) # Lactated Ringers (LR) actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [36576007 Infusion (procedure)] - >(363701004 Direct substance (attribute))->[347379006 Lactated Ringer's solution (product)] # Dextrose 5%, 1/2 Normal Saline actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Precoordinated Expression [36576007 Infusion (procedure)] - >(363701004 Direct substance (attribute))->[Rx;1795250 1000 ML Glucose 50 MG/ML / Sodium Chloride 4.5 MG/ML Injection] # Other User Specified IV Fluids actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Other User Specified IV Fluids TSR-NoCode </pre>
Sen- tence # #	<p>Aspirin enteric coated, select one of the following:</p> <hr/> <p>⊕ Aspirin enteric coated 81 mg daily</p> <pre> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Administration (procedure)] - ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;308416 Aspirin 81 MG Delayed Release Oral Tablet] requestedResult.lowerBound: 1 requestedResult.upperBound: 1 requestedResult.includeLowerBound: true requestedResult.includeUpperBound: true requestedResult.measureSemantic: Precoordinated Expression 421026006 Oral tablet (qualifier value) </pre>

	<p> repetition[0].eventFrequency.lowerBound: 1 repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.resolution: 1 repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) </p> <p> ★ Aspirin enteric coated 325 mg daily </p> <p> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] </p> <p> statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;198467 Aspirin 325 MG Delayed Release Oral Tablet] requestedResult.lowerBound: 1 requestedResult.upperBound: 1 requestedResult.includeLowerBound: true requestedResult.includeUpperBound: true requestedResult.measureSemantic: Precoordinated Expression 421026006 Oral tablet (qualifier value) repetition[0].periodDuration.lowerBound: 1 repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: true repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) </p>
Log-ical ##	<p>Diuretics</p> <hr/> <p> # prompt: Furosemide specify: 20-120 mg response: Real (Single) </p> <p> responseBinding: Property ("furosemideDose") </p> <p> # prompt: Furosemide specify: every Y hours response: Real (Single) </p> <p> responseBinding: Property ("furosemideEveryYHours") </p> <p> # Furosemide specify: 20-120 mg solution IV bolus now </p> <p> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] </p> <p> statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1162712 Furosemide Injectable Product] ->(410675002 Route of administration (attribute))->[47625008 Intravenous route (qualifier value)] ->(246501002 Technique (attribute))->[397801003 Single bolus (qualifier value)];- </p>

```

priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
requestedResult.lowerBound: furosemideDose
requestedResult.upperBound: furosemideDose
requestedResult.includeLowerBound: true
requestedResult.includeUpperBound: true
requestedResult.measureSemantic: Precoordinated Expression 258684004 |
milligram (qualifier value)|
# Furosemide specify: 20-120 mg solution IV bolus every Y hours
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]-
->(260686004 |Method (attribute))->[129445006 |Administration - action
(qualifier value)]->(363701004 |Direct substance (attribute))->[Rx;1162712
Furosemide Injectable Product]->(410675002 |Route of administration (at-
tribute))->[47625008 |Intravenous route (qualifier value)]->(246501002 |
Technique (attribute))->[397801003 |Single bolus (qualifier value)];-
requestedResult.lowerBound: furosemideDose
requestedResult.upperBound: furosemideDose
requestedResult.includeLowerBound: true
requestedResult.includeUpperBound: true
requestedResult.measureSemantic: Precoordinated Expression 258684004 |
milligram (qualifier value)|
repetition[0].eventFrequency.lowerBound: furosemideEveryYHours
repetition[0].eventFrequency.upperBound: furosemideEveryYHours
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.resolution: 1
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression
258702006 |hour (qualifier value)|
# prompt: Bumetanide specify: 0.5-2 mg
response: Real (Single)
responseBinding: Property ("bumetanideDose")
# prompt: Furosemide specify: every Y hours
response: Real (Single)
responseBinding: Property ("bumetanideEveryYHours")
# Bumetanide specify: 0.5-2 mg solution IV bolus now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]-
->(260686004 |Method (attribute))->[129445006 |Administration - action
(qualifier value)]->(363701004 |Direct substance (attribute))->[Rx;1151347

```



```

Bumetanide Injectable Product] ->(410675002 |Route of administration (at-
tribute))->[47625008 |Intravenous route (qualifier value)]- ->(246501002 |
Technique (attribute))->[397801003 |Single bolus (qualifier value)];
priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
requestedResult.lowerBound: bumetanideDose
requestedResult.upperBound: bumetanideDose
requestedResult.includeLowerBound: true
requestedResult.includeUpperBound: true
requestedResult.measureSemantic: Precoordinated Expression 258684004 |
milligram (qualifier value)|
# Bumetanide specify: 0.5-2 mg solution IV bolus every Y hours
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]-
->(260686004 |Method (attribute))->[129445006 |Administration - action
(qualifier value)]- ->(363701004 |Direct substance (attribute))->[Rx;1151347
Bumetanide Injectable Product] ->(410675002 |Route of administration (at-
tribute))->[47625008 |Intravenous route (qualifier value)]- ->(246501002 |
Technique (attribute))->[397801003 |Single bolus (qualifier value)];
requestedResult.lowerBound: bumetanideDose
requestedResult.upperBound: bumetanideDose
requestedResult.includeLowerBound: true
requestedResult.includeUpperBound: true
requestedResult.measureSemantic: Precoordinated Expression 258684004 |
milligram (qualifier value)|
repetition[0].eventFrequency.lowerBound: bumetanideEveryYHours
repetition[0].eventFrequency.upperBound: bumetanideEveryYHours
repetition[0].eventFrequency.includeLowerBound: true
repetition[0].eventFrequency.includeUpperBound: true
repetition[0].eventFrequency.resolution: 1
repetition[0].eventFrequency.measureSemantic: Precoordinated Expression
258702006 |hour (qualifier value)|
# Metolazone 2.5-5 mg oral daily, 30 minutes prior to loop diuretic dose
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]
->(260686004 |Method (attribute))->[129445006 |Administration - action
(qualifier value)]- ->(363701004 |Direct substance (attribute))->[Rx;1163518
Metolazone Oral Product] ->(410675002 |Route of administration (at-
tribute))->[26643006 |Oral route (qualifier value)]
unstructured[0]: 30 minutes prior to loop diuretic dose
repetition[0].periodDuration.lowerBound: 1

```

Log- ical # #	repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: true repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 day (qualifier value)	
	Potassium Replacement	
	# Potassium replacement per protocol actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;8591 Potassium Chloride] unstructured[0]: per protocol	
Sentence # #	Potassium chloride 10-20 meq	
	# Potassium chloride X meq (max 60 meq) oral ONCE actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Ad- ministration (procedure)] ->(260686004 Method (at- tribute))->[129445006 Administration - action (qual- ifier value)] ->(363701004 Direct substance (at- tribute))->[Rx;8591 Potassium Chloride] requestedResult.lowerBound: 0 requestedResult.upperBound: 60 requestedResult.includeLowerBound: false requestedResult.includeUpperBound: true requestedResult.measureSemantic: Precoordinated Ex- pression 258727004 milliequivalent (qualifier value) repetition[0].periodDuration.lowerBound: 1 repetition[0].periodDuration.upperBound: 1 repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: true repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoordi- nated Expression 258703001 day (qualifier value)	
	# Potassium chloride X meq (max 60 meq) oral DAILY actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Ad- ministration (procedure)] ->(260686004 Method (at-	

	<p>tribute))>[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))>[Rx;8591 Potassium Chloride]</p> <p>requestedResult.lowerBound: 0</p> <p>requestedResult.upperBound: 60</p> <p>requestedResult.includeLowerBound: false</p> <p>requestedResult.includeUpperBound: true</p> <p>requestedResult.measureSemantic: Precoordinated Expression 258727004 milliequivalent (qualifier value) </p> <p>repetition[0].periodDuration.lowerBound: 1</p> <p>repetition[0].periodDuration.upperBound: 1</p> <p>repetition[0].periodDuration.includeLowerBound: true</p> <p>repetition[0].periodDuration.includeUpperBound: true</p> <p>repetition[0].periodDuration.resolution: 1</p> <p>repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) </p> <p># Potassium chloride X meq (max 60 meq) oral BID</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Postcoordinated Expression [416118004 Administration (procedure)] ->(260686004 Method (attribute))>[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))>[Rx;8591 Potassium Chloride] ->(410675002 Route of administration (attribute))>[26643006 Oral route (qualifier value)]</p> <p>requestedResult.lowerBound: 0</p> <p>requestedResult.upperBound: 60</p> <p>requestedResult.includeLowerBound: false</p> <p>requestedResult.includeUpperBound: true</p> <p>requestedResult.measureSemantic: Precoordinated Expression 258727004 milliequivalent (qualifier value) </p> <p>repetition[0].eventFrequency.lowerBound: 2</p> <p>repetition[0].eventFrequency.upperBound: 2</p> <p>repetition[0].eventFrequency.includeLowerBound: true</p> <p>repetition[0].eventFrequency.includeUpperBound: true</p> <p>repetition[0].eventFrequency.resolution: 1</p> <p>repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) </p>
# Angiotensin-Converting Enzyme (ACE-I) Inhibitors [if not on Angiotensin Receptor Blockers (ARBs)]	
# Captopril [initial 6.25-12.5, max 50] mg oral, three times daily (tid)	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Postcoordinated Expression [416118004 |Administration (procedure)] ->(260686004 |Method (attribute))->[129445006 |Administration - action (qualifier value)] ->(363701004 |Direct substance (attribute))->[Rx;1155754 Captopril Pill] ->(410675002 |Route of administration (attribute))->[26643006 |Oral route (qualifier value)]

unstructured[0]: initial 6.25-12.5, max 50

requestedResult.lowerBound: 6.25

requestedResult.upperBound: 50

requestedResult.includeLowerBound: true

requestedResult.includeUpperBound: true

requestedResult.measureSemantic: Precoordinated Expression 258727004 | milliequivalent (qualifier value)|

repetition[0].eventFrequency.lowerBound: 3

repetition[0].eventFrequency.upperBound: 3

repetition[0].eventFrequency.includeLowerBound: true

repetition[0].eventFrequency.includeUpperBound: true

repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 |day (qualifier value)|

repetition[0].periodDuration.lowerBound: 1

repetition[0].periodDuration.includeLowerBound: true

repetition[0].periodDuration.includeUpperBound: false

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 |day (qualifier value)|

Lisinopril [initial 2.5-5, max 40]mg tablet oral daily hold for symptomatic systolic BP less than 90

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Postcoordinated Expression [416118004 |Administration (procedure)] ->(260686004 |Method (attribute))->[129445006 |Administration - action (qualifier value)] ->(363701004 |Direct substance (attribute))->[Rx;1164690 Lisinopril Pill] ->(410675002 |Route of administration (attribute))->[26643006 |Oral route (qualifier value)]

unstructured[0]: initial 2.5-5, max 40

unstructured[1]: hold for symptomatic systolic BP less than 90

requestedResult.lowerBound: 2.5

requestedResult.upperBound: 40

requestedResult.includeLowerBound: true

requestedResult.includeUpperBound: true

requestedResult.measureSemantic: Precoordinated Expression 258727004 | milliequivalent (qualifier value)|

```

    repetition[1].eventFrequency.lowerBound: 1
    repetition[1].eventFrequency.upperBound: 1
    repetition[1].eventFrequency.includeLowerBound: true
    repetition[1].eventFrequency.includeUpperBound: true
    repetition[1].eventFrequency.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
    repetition[0].periodDuration.lowerBound: 1
    repetition[0].periodDuration.includeLowerBound: true
    repetition[0].periodDuration.includeUpperBound: false
    repetition[0].periodDuration.resolution: 1
    repetition[0].periodDuration.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
# Enalapril [initial 2.5, max-20] mg tablet oral daily hold for symptomatic systolic BP less than 90
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
    value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]
    ->(260686004 |Method (attribute))->[129445006 |Administration - action
    (qualifier value)] ->(363701004 |Direct substance (attribute))->[Rx;1162653
    Enalapril Pill] ->(410675002 |Route of administration (attribute))->[26643006
    |Oral route (qualifier value)]
    unstructured[0]: initial 2.5, max-20
    unstructured[1]: hold for symptomatic systolic BP less than 90
    requestedResult.lowerBound: 2.5
    requestedResult.upperBound: 20
    requestedResult.includeLowerBound: true
    requestedResult.includeUpperBound: true
    requestedResult.measureSemantic: Precoordinated Expression 258727004 |
    milliequivalent (qualifier value)|
    repetition[0].eventFrequency.lowerBound: 1
    repetition[0].eventFrequency.upperBound: 1
    repetition[0].eventFrequency.includeLowerBound: true
    repetition[0].eventFrequency.includeUpperBound: true
    repetition[0].eventFrequency.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
    repetition[0].periodDuration.lowerBound: 1
    repetition[0].periodDuration.includeLowerBound: true
    repetition[0].periodDuration.includeUpperBound: false
    repetition[0].periodDuration.resolution: 1
    repetition[0].periodDuration.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
# Angiotensin II Receptor Blockers (ARBs) [if not on ACE-I]

```

Losartan [initial 25-50, max 150] mg tablet oral daily hold for symptomatic systolic BP less than 90

```

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]
    ->(260686004 |Method (attribute))->[129445006 |Administration - action (qualifier value)]
    ->(363701004 |Direct substance (attribute))->[Rx;1165343 Losartan Pill]
    ->(410675002 |Route of administration (attribute))->[26643006 |Oral route (qualifier value)]
    unstructured[0]: initial 25-50, max 150
    unstructured[1]: hold for symptomatic systolic BP less than 90
    requestedResult.lowerBound: 25
    requestedResult.upperBound: 150
    requestedResult.includeLowerBound: true
    requestedResult.includeUpperBound: true
    requestedResult.measureSemantic: Precoordinated Expression 258727004 |milliequivalent (qualifier value)|
    repetition[0].eventFrequency.lowerBound: 1
    repetition[0].eventFrequency.upperBound: 1
    repetition[0].eventFrequency.includeLowerBound: true
    repetition[0].eventFrequency.includeUpperBound: true
    repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 |day (qualifier value)|
    repetition[0].periodDuration.lowerBound: 1
    repetition[0].periodDuration.includeLowerBound: true
    repetition[0].periodDuration.includeUpperBound: false
    repetition[0].periodDuration.resolution: 1
    repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 |day (qualifier value)|

```

Valsartan [initial 20- 40, max 160]mg tablet oral 2 times daily hold for symptomatic systolic BP less than 90

```

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]
    ->(260686004 |Method (attribute))->[129445006 |Administration - action (qualifier value)]
    ->(363701004 |Direct substance (attribute))->[Rx;1164561 valsartan Pill]
    ->(410675002 |Route of administration (attribute))->[26643006 |Oral route (qualifier value)]
    unstructured[0]: initial 20- 40, max 160
    unstructured[1]: hold for symptomatic systolic BP less than 90
    requestedResult.lowerBound: 20
    requestedResult.upperBound: 160

```

	<pre> requestedResult.includeLowerBound: true requestedResult.includeUpperBound: true requestedResult.measureSemantic: Precoordinated Expression 258727004 milliequivalent (qualifier value) repetition[0].eventFrequency.lowerBound: 2 repetition[0].eventFrequency.upperBound: 2 repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) repetition[0].periodDuration.lowerBound: 1 repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: false repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) </pre>
#	Angiotensin Receptor-Neprilysin Inhibitors (ARNIs)
#	Sacubitril 49 mg / Valsartan 51 mg 1 tablet oral daily 2 times hold for symptomatic systolic BP less than 90
	<pre> actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1656349 sacubitril 49 MG / valsartan 51 MG Oral Tablet] ->(410675002 Route of ad- ministration (attribute))->[26643006 Oral route (qualifier value)] unstructured[0]: hold for symptomatic systolic BP less than 90 requestedResult.lowerBound: 2 requestedResult.upperBound: 2 requestedResult.includeLowerBound: true requestedResult.includeUpperBound: true requestedResult.measureSemantic: Precoordinated Expression 258727004 milliequivalent (qualifier value) repetition[0].eventFrequency.lowerBound: 1 repetition[0].eventFrequency.upperBound: 1 repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) repetition[0].periodDuration.lowerBound: 1 repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: false </pre>

	repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 day (qualifier value)
# Beta-Blockers	
# Metoprolol succinate [initial 12.5-25, max 200] mg tablet oral daily hold for symptomatic sys- tolic BP less than 90	actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Administration (pro- cedure)] ->(260686004 Method (attribute))->[129445006 Adminis- tration - action (qualifier value)] ->(363701004 Direct substance (at- tribute))->[Rx;1163524 Metoprolol Pill] ->(410675002 Route of administra- tion (attribute))->[26643006 Oral route (qualifier value)] unstructured[0]: initial 12.5-25, max 200 unstructured[1]: hold for symptomatic systolic BP less than 90 requestedResult.lowerBound: 12.5 requestedResult.upperBound: 200 requestedResult.includeLowerBound: true requestedResult.includeUpperBound: true requestedResult.measureSemantic: Precoordinated Expression 258727004 milliequivalent (qualifier value) repetition[0].eventFrequency.lowerBound: 1 repetition[0].eventFrequency.upperBound: 1 repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) repetition[0].periodDuration.lowerBound: 1 repetition[0].periodDuration.includeLowerBound: true repetition[0].periodDuration.includeUpperBound: false repetition[0].periodDuration.resolution: 1 repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 day (qualifier value)
# Carvedilol [initial 3.125, max 25] mg tablet oral daily 2 times hold for symptomatic systolic BP less than 90	actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 Requested (qualifier value) topic: Postcoordinated Expression [416118004 Administration (pro- cedure)] ->(260686004 Method (attribute))->[129445006 Adminis- tration - action (qualifier value)] ->(363701004 Direct substance (at- tribute))->[Rx;1160590 carvedilol Pill] ->(410675002 Route of administra- tion (attribute))->[26643006 Oral route (qualifier value)]

	<p>unstructured[0]: initial 3.125, max 25</p> <p>unstructured[1]: hold for symptomatic systolic BP less than 90</p> <p>requestedResult.lowerBound: 3.125</p> <p>requestedResult.upperBound: 25</p> <p>requestedResult.includeLowerBound: true</p> <p>requestedResult.includeUpperBound: true</p> <p>requestedResult.measureSemantic: Precoordinated Expression 258727004 milliequivalent (qualifier value) </p> <p>repetition[0].eventFrequency.lowerBound: 1</p> <p>repetition[0].eventFrequency.upperBound: 1</p> <p>repetition[0].eventFrequency.includeLowerBound: true</p> <p>repetition[0].eventFrequency.includeUpperBound: true</p> <p>repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) </p> <p>repetition[0].periodDuration.lowerBound: 1</p> <p>repetition[0].periodDuration.includeLowerBound: true</p> <p>repetition[0].periodDuration.includeUpperBound: false</p> <p>repetition[0].periodDuration.resolution: 1</p> <p>repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258703001 day (qualifier value) </p>
# Aldosterone Antagonists	
# Spflironolactone [initial 12.5, max] 25 mg tablet oral daily	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	<p>statementType: Precoordinated Expression 385644000 Requested (qualifier value) </p> <p>topic: Postcoordinated Expression [416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1161123 Spironolactone Pill] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]</p> <p>unstructured[0]: initial 12.5, max 25</p> <p>requestedResult.lowerBound: 12.5</p> <p>requestedResult.upperBound: 25</p> <p>requestedResult.includeLowerBound: true</p> <p>requestedResult.includeUpperBound: true</p> <p>requestedResult.measureSemantic: Precoordinated Expression 258727004 milliequivalent (qualifier value) </p> <p>repetition[0].eventFrequency.lowerBound: 1</p> <p>repetition[0].eventFrequency.upperBound: 1</p> <p>repetition[0].eventFrequency.includeLowerBound: true</p> <p>repetition[0].eventFrequency.includeUpperBound: true</p>

```

    repetition[0].eventFrequency.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
    repetition[0].periodDuration.lowerBound: 1
    repetition[0].periodDuration.includeLowerBound: true
    repetition[0].periodDuration.includeUpperBound: false
    repetition[0].periodDuration.resolution: 1
    repetition[0].periodDuration.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
# Eplerenone [initial 25, max 50] mg tablet oral daily
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
    value)|
    topic: Postcoordinated Expression [416118004 |Administration (pro-
    cedure)] ->(260686004 |Method (attribute))->[129445006 |Adminis-
    tration - action (qualifier value)] ->(363701004 |Direct substance (at-
    tribute))->[Rx;1161910 eplerenone Pill] ->(410675002 |Route of administra-
    tion (attribute))->[26643006 |Oral route (qualifier value)]
    unstructured[0]: initial 25, max 50
    requestedResult.lowerBound: 25
    requestedResult.upperBound: 50
    requestedResult.includeLowerBound: true
    requestedResult.includeUpperBound: true
    requestedResult.measureSemantic: Precoordinated Expression 258727004 |
    milliequivalent (qualifier value)|
    repetition[0].eventFrequency.lowerBound: 1
    repetition[0].eventFrequency.upperBound: 1
    repetition[0].eventFrequency.includeLowerBound: true
    repetition[0].eventFrequency.includeUpperBound: true
    repetition[0].eventFrequency.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
    repetition[0].periodDuration.lowerBound: 1
    repetition[0].periodDuration.includeLowerBound: true
    repetition[0].periodDuration.includeUpperBound: false
    repetition[0].periodDuration.resolution: 1
    repetition[0].periodDuration.measureSemantic: Precoordinated Expression
    258703001 |day (qualifier value)|
# Hydralazine/Nitrates
# Hydralazine 37.5 mg/ Isosorbide dinitrate 20 mg 1 tablet oral 3 times daily (tid)
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
    statementType: Precoordinated Expression 385644000 |Requested (qualifier
    value)|
    topic: Postcoordinated Expression [416118004 |Administration (procedure)]
    ->(260686004 |Method (attribute))->[129445006 |Administration - action

```

(qualifier value)] ->(363701004 |Direct substance (attribute))->[Rx;905377 hydrALAZINE Hydrochloride 37.5 MG / Isosorbide Dinitrate 20 MG Oral Tablet] ->(410675002 |Route of administration (attribute))->[26643006 |Oral route (qualifier value)]

requestedResult.lowerBound: 1

requestedResult.upperBound: 1

requestedResult.includeLowerBound: true

requestedResult.includeUpperBound: true

requestedResult.measureSemantic: Precoordinated Expression 421026006 | Oral tablet (qualifier value)|

repetition[0].periodDuration.lowerBound: 1

repetition[0].periodDuration.includeLowerBound: true

repetition[0].periodDuration.includeUpperBound: false

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258702006 |hour (qualifier value)|

repetition[0].eventFrequency.lowerBound: 3

repetition[0].eventFrequency.upperBound: 3

repetition[0].eventFrequency.includeLowerBound: true

repetition[0].eventFrequency.includeUpperBound: true

repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 |day (qualifier value)|

Cardiac Glycosides

Digoxin 0.125 micrograms tablet oral daily

actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]

statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|

topic: Postcoordinated Expression [416118004 |Administration (procedure)] ->(260686004 |Method (attribute))->[129445006 |Administration - action (qualifier value)] ->(363701004 |Direct substance (attribute))->[Rx;197604 Digoxin 0.125 MG Oral Tablet] ->(410675002 |Route of administration (attribute))->[26643006 |Oral route (qualifier value)]

requestedResult.lowerBound: 1

requestedResult.upperBound: 1

requestedResult.includeLowerBound: true

requestedResult.includeUpperBound: true

requestedResult.measureSemantic: Precoordinated Expression 421026006 | Oral tablet (qualifier value)|

repetition[0].periodDuration.lowerBound: 1

repetition[0].periodDuration.includeLowerBound: true

repetition[0].periodDuration.includeUpperBound: false

repetition[0].periodDuration.resolution: 1

repetition[0].periodDuration.measureSemantic: Precoordinated Expression 258702006 hour (qualifier value) repetition[0].eventFrequency.lowerBound: 1 repetition[0].eventFrequency.upperBound: 1 repetition[0].eventFrequency.includeLowerBound: true repetition[0].eventFrequency.includeUpperBound: true repetition[0].eventFrequency.measureSemantic: Precoordinated Expression 258703001 day (qualifier value)
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Chapter 17. Tabular List

Terminology Service Request (TSR) Mappings

Table 17.1. Terminology Versions

Name	Identifier	Version
SNOMED CT	2.16.840.1.113883.6.96	United States Edition 20180301

Table 17.2. Terminology References

System	Code	Display Text ^a	References ^b
SNOMED CT	104847001 Oxygen saturation measurement (procedure)	Precoordinated Expression	1
SNOMED CT	105376000 Trans-esophageal echocardiography (procedure)	Precoordinated Expression	2
SNOMED CT	121870001 Troponin I measurement (procedure)	Precoordinated Expression	2
SNOMED CT	1221000205105 Cardiology consultation and report (procedure)	Precoordinated Expression	1
SNOMED CT	1231000205107 Advanced heart failure service consultation and report (procedure)	Precoordinated Expression	1
SNOMED CT	1241000205102 Electrophysiology service consultation and report (procedure)	Precoordinated Expression	1
SNOMED CT	1411000205104 Comprehensive metabolic panel (procedure)	Precoordinated Expression	2
SNOMED CT	1421000205106 Basic metabolic panel (procedure)	Precoordinated Expression	2
SNOMED CT	14456009 Measuring height of patient (procedure)	Precoordinated Expression	1
SNOMED CT	16545381000119101 Single photon emission computed tomography of myocardial perfusion with computed tomography (procedure)	Precoordinated Expression	1
SNOMED CT	182923009 Nil by mouth (regime/therapy)	Precoordinated Expression	1

System	Code	Display Text ^a	References ^b
SNOMED CT	1d5d8220-9818-4c10-a471-3b9ad32d061e Bedrest with bedside com-mode (regime/therapy)	Precoordinated Expression	1
SNOMED CT	225316001 Bedrest (regime/therapy)	Precoordinated Expression	1
SNOMED CT	225372007 Total parenteral nutrition (regime/therapy)	Total Parenteral Nutrition (TPN)	1
SNOMED CT	252150008 Fasting lipid profile (procedure)	Precoordinated Expression	1
SNOMED CT	252465000 Pulse oximetry (procedure)	Precoordinated Expression	1
SNOMED CT	25389001 Fluid restriction (procedure)	Precoordinated Expression	1
SNOMED CT	25514001 Digoxin measurement (procedure)	Precoordinated Expression	1
SNOMED CT	258677007 Inch (qualifier value)	Precoordinated Expression	1
SNOMED CT	258684004 milligram (qualifier value)	Precoordinated Expression	4
SNOMED CT	258693003 pounds (qualifier value)	Precoordinated Expression	1
SNOMED CT	258701004 min (qualifier value)	Precoordinated Expression	1
SNOMED CT	258702006 hour (qualifier value)	Precoordinated Expression	16
SNOMED CT	258703001 day (qualifier value)	Precoordinated Expression	30
SNOMED CT	258727004 milliequivalent (qualifier value)	Precoordinated Expression	13
SNOMED CT	258752002 % oxyhemoglobin (qualifier value)	Precoordinated Expression	3
SNOMED CT	258790008 calorie (qualifier value)	Precoordinated Expression	1
SNOMED CT	258858008 Liter/24 hours (qualifier value)	Precoordinated Expression	2
SNOMED CT	258994006 Liter/minute (qualifier value)	Precoordinated Expression	1
SNOMED CT	26604007 Complete blood count (procedure)	Precoordinated Expression	2
SNOMED CT	268400002 12 lead electrocardiogram (procedure)	Precoordinated Expression	2

System	Code	Display Text ^a	References ^b
SNOMED CT	26958001 Hepatic function panel (procedure)	Precoordinated Expression	1
SNOMED CT	297751002 Infusion of saline solution (procedure)	Precoordinated Expression	1
SNOMED CT	305056002 Admission procedure (procedure)	Precoordinated Expression	2
SNOMED CT	305342007 Admission to ward (procedure)	Precoordinated Expression	1
SNOMED CT	305351004 Admission to intensive care unit (procedure)	Precoordinated Expression	1
SNOMED CT	33022008 Hospital-based outpatient department (environment)	Outpatient clinic, hospital, and ED settings	1
SNOMED CT	33747003 Glucose measurement, blood (procedure)	Blood glucose	2
SNOMED CT	371907003 Oxygen administration by nasal cannula (procedure)	Precoordinated Expression	2
SNOMED CT	371908008 Oxygen administration by mask (procedure)	Precoordinated Expression	1
SNOMED CT	38151008 Magnesium measurement (procedure)	Precoordinated Expression	2
SNOMED CT	385644000 Requested (qualifier value)	Precoordinated Expression	122
SNOMED CT	386341005 Invasive hemodynamic monitoring (regime/therapy)	Precoordinated Expression	1
SNOMED CT	390917008 Brain natriuretic peptide measurement (procedure)	Precoordinated Expression	2
SNOMED CT	392247006 Insertion of catheter into artery (procedure)	Precoordinated Expression	1
SNOMED CT	396451008 Prothrombin time (procedure)	Precoordinated Expression	2
SNOMED CT	39857003 Weighing patient (procedure)	Precoordinated Expression	2
SNOMED CT	400c3d0a-171f-4b6f-83f8-638e72a22068 Regular diet (regime/therapy)	Regular diet	1

System	Code	Display Text ^a	References ^b
SNOMED CT	404221001 Multiple gated acquisition scanning (procedure)	Precoordinated Expression	1
SNOMED CT	410155007 Occupational therapy assessment (procedure)	Precoordinated Expression	1
SNOMED CT	421026006 Oral tablet (qualifier value)	Precoordinated Expression	4
SNOMED CT	423687009 Peripheral intravenous catheter care (regime/therapy)	Precoordinated Expression	1
SNOMED CT	424410003 Bedrest with bathroom privileges (regime/therapy)	Precoordinated Expression	1
SNOMED CT	42525009 Partial thromboplastin time, activated (procedure)	Precoordinated Expression	2
SNOMED CT	42869005 Diagnostic radiography of chest, combined posteroanterior and lateral (procedure)	Precoordinated Expression	2
SNOMED CT	429253002 Oxygen administration by Venturi mask (procedure)	Precoordinated Expression	1
SNOMED CT	431511008 Myocardial perfusion stress imaging using Thallium 201 (procedure)	Thallium Myocardial Perfusion Imaging (MPI) viability testing	1
SNOMED CT	433236007 Transthoracic echocardiography (procedure)	Precoordinated Expression	2
SNOMED CT	436711000124106 Decreased cholesterol diet (regime/therapy)	Precoordinated Expression	1
SNOMED CT	436861000124104 Decreased fat diet (regime/therapy)	Precoordinated Expression	1
SNOMED CT	437421000124105 Decreased sodium diet (regime/therapy)	Precoordinated Expression	1
SNOMED CT	439993001 Prevention of deep vein thrombosis (regime/therapy)	Precoordinated Expression	1
SNOMED CT	443749004 Assessment of risk of venous thromboembolism (procedure)	Precoordinated Expression	1

System	Code	Display Text ^a	References ^b
SNOMED CT	445970000 Moving subject from bed to chair (procedure)	Precoordinated Expression	1
SNOMED CT	446583004 Insertion of indwelling catheter into urinary bladder (procedure)	Precoordinated Expression	2
SNOMED CT	44ee63fe-94f-b-4cf1-97d7-a2e73075596f Measuring intake and output, strict (procedure)	Precoordinated Expression	1
SNOMED CT	46a4b669-f7e6-4aa7-8ad8-7ff5c1f-bce83 Catheterization of urinary bladder using condom catheter (procedure)	Precoordinated Expression	1
SNOMED CT	491e8c86-91e0-49a7-a4a3-dd1da05ad071 Insertion of peripheral venous cannula with heparin lock (procedure)	Precoordinated Expression	1
SNOMED CT	49499008 Stat (qualifier value)	Precoordinated Expression	20
SNOMED CT	4d555c8a-d2af-4dbf-b81a-9eaddec2a7d8 Admission to stepdown unit (procedure)	Precoordinated Expression	1
SNOMED CT	50811001 Routine (qualifier value)	Precoordinated Expression	4
SNOMED CT	57485005 Oxygen therapy (procedure)	Precoordinated Expression	1
SNOMED CT	61167004 Thyroid stimulating hormone measurement (procedure)	Precoordinated Expression	2
SNOMED CT	61420007 Tube feeding of patient (regime/therapy)	tube feeding	1
SNOMED CT	61746007 Taking patient vital signs (procedure)	Precoordinated Expression	2
SNOMED CT	63061008 Measuring intake and output (procedure)	Precoordinated Expression	5
SNOMED CT	6b343927-35d-f-458e-b365-69fd00ba12e6 Insertion of peripheral venous cannula with saline lock (procedure)	Precoordinated Expression	1
SNOMED CT	73775008 Morning (qualifier value)	Precoordinated Expression	16

System	Code	Display Text ^a	References ^b
SNOMED CT	75f0ca2c-e68a-44ca-81f8-10e53f-f7a855 Admission to telemetry department (procedure)	Precoordinated Expression	1
SNOMED CT	7ab0a3e5-ea2d-45c4-916a-6e03a4771b93 Urine digoxin measurement (procedure)	Precoordinated Expression	1
SNOMED CT	82936005 Introduction of catheter into pulmonary artery (procedure)	Precoordinated Expression	1
SNOMED CT	84114007 Heart failure (disorder)	diagnosis suggestive of initial or recurrent heart failure	1
SNOMED CT	91308007 Blood gases, arterial measurement (procedure)	Precoordinated Expression	1
SNOMED CT	TSR-NoCode ^c	Precoordinated Expression	12
SNOMED CT	[223438000 Recommendation to discontinue a procedure (procedure)] ->(363702006 Has focus (attribute))->[15220000 Laboratory test (procedure)]	May be off telemetry for lab testing	1
SNOMED CT	[223438000 Recommendation to discontinue a procedure (procedure)] ->(363702006 Has focus (attribute))->[363679005 Imaging (procedure)]	May be off telemetry for imaging studies	1
SNOMED CT	[223438000 Recommendation to discontinue a procedure (procedure)] ->(363702006 Has focus (attribute))->[422952004 Cardiac telemetry (regime/therapy)]	May be off telemetry for imaging studies	1
SNOMED CT	[36576007 Infusion (procedure)] ->(363701004 Direct substance (attribute))->[347379006 Lactated Ringer's solution (product)]	Postcoordinated Expression	1
SNOMED CT	[36576007 Infusion (procedure)] ->(363701004 Direct substance (attribute))->[Rx;1795250	Precoordinated Expression	1

System	Code	Display Text ^a	References ^b
	1000 ML Glucose 50 MG/ ML / Sodium Chloride 4.5 MG/ML Injection]		
SNOMED CT	[386053000 Evaluation procedure (procedure)] - >(363702006 Has focus (attribute))->[250908004 Left ventricular ejection fraction (observable enti- ty)]	Postcoordinated Expression	1
SNOMED CT	[386053000 Evaluation procedure (procedure)] - >(363702006 Has focus (attribute))->[250939002 Right ventricular ejection fraction (observable enti- ty)]	Postcoordinated Expression	1
SNOMED CT	[386053000 Evaluation procedure (procedure)] - >(363702006 Has focus (attribute))->[84114007 Heart failure (disorder)]	Postcoordinated Expression	8
SNOMED CT	[386053000 Evaluation procedure (procedure)] - >(363702006 Has focus (attribute))->[85898001 Cardiomyopathy (disor- der)]	Postcoordinated Expression	2
SNOMED CT	[416118004 Adminis- tration (procedure)] - >(260686004 Method (at- tribute))->[129445006 Administration - ac- tion (qualifier val- ue)] ->(363701004 Direct substance (at- tribute))->[398730001 Pneumococcal vaccine (substance)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Adminis- tration (procedure)] - >(260686004 Method (at- tribute))->[129445006 Administration - ac- tion (qualifier val- ue)] ->(363701004 Direct substance (at- tribute))->[46233009 Influenza virus vaccine (product)]	Postcoordinated Expression	1

System	Code	Display Text ^a	References ^b
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1155754 Captopril Pill] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1160590 carvedilol Pill] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1161123 Spironolactone Pill] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1161910	Postcoordinated Expression	1

System	Code	Display Text ^a	References ^b
	eplerenone Pill] - >(410675002 Route of administration (at- tribute))->[26643006 Oral route (qualifier value)]		
SNOMED CT	[416118004 Adminis- tration (procedure)] - >(260686004 Method (at- tribute))->[129445006 Administration - ac- tion (qualifier val- ue)] ->(363701004 Direct substance (at- tribute))->[Rx;1162653 Enalapril Pill] - >(410675002 Route of administration (at- tribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Adminis- tration (procedure)] - >(260686004 Method (at- tribute))->[129445006 Administration - ac- tion (qualifier val- ue)] ->(363701004 Direct substance (at- tribute))->[Rx;1163518 Metolazone Oral Prod- uct] ->(410675002 Route of administration (at- tribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Adminis- tration (procedure)] - >(260686004 Method (at- tribute))->[129445006 Administration - ac- tion (qualifier val- ue)] ->(363701004 Direct substance (at- tribute))->[Rx;1163524 Metoprolol Pill] - >(410675002 Route of administration (at- tribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Adminis- tration (procedure)] - >(260686004 Method (at- tribute))->[129445006	Postcoordinated Expression	1

System	Code	Display Text ^a	References ^b
	Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1164561 valsartan Pill] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]		
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1164690 Lisinopril Pill] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1165343 Losartan Pill] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1656349 sacubitril 49 MG / valsartan 51 MG Oral Tablet] ->(410675002 Route of administration (at-	Postcoordinated Expression	1

System	Code	Display Text ^a	References ^b
	tribute))->[26643006 Oral route (qualifier value)]		
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;197604 Digoxin 0.125 MG Oral Tablet] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;198467 Aspirin 325 MG Delayed Release Oral Tablet]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;308416 Aspirin 81 MG Delayed Release Oral Tablet]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;8591 Potassium Chloride]	Postcoordinated Expression	3

System	Code	Display Text ^a	References ^b
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;8591 Potassium Chloride] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;905377 hydrALAZINE Hydrochloride 37.5 MG / Isosorbide Dinitrate 20 MG Oral Tablet] ->(410675002 Route of administration (attribute))->[26643006 Oral route (qualifier value)]	Postcoordinated Expression	1
SNOMED CT	[416118004 Administration (procedure)] ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)] ->(363701004 Direct substance (attribute))->[Rx;1151347 Bumetanide Injectable Product] ->(410675002 Route of administration (attribute))->[47625008 Intravenous route (qualifier value)] ->(246501002 Technique (attribute))->[397801003 Single bolus (qualifier value)];	Postcoordinated Expression	2

System	Code	Display Text ^a	References ^b
SNOMED CT	[416118004 Administration (procedure)]- ->(260686004 Method (attribute))->[129445006 Administration - action (qualifier value)]- ->(363701004 Direct substance (attribute))->[Rx;1162712 Furosemide Injectable Product] ->(410675002 Route of administration (attribute))->[47625008 Intravenous route (qualifier value)] ->(246501002 Technique (attribute))->[397801003 Single bolus (qualifier value)];-	Postcoordinated Expression	2
SNOMED CT	[67632007 Diagnostic radiography of chest, posteroanterior (procedure)]- ->(260686004 Method (attribute))->[278110001 Radiographic imaging - action (qualifier value)]- ->(405813007 Procedure site - Direct (attribute))->[51185008 Thoracic structure (body structure)] ->(424226004 Using device (attribute))->[468611003 Diagnostic x-ray system generator, portable (physical object)];	Postcoordinated Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a Observation procedure (procedure)] ->(363702006 Has focus (attribute))->[1371000205103 Not for intubation (finding)]	Do Not Intubate (DNI)	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a Observation procedure (procedure)] ->(363702006 Has focus (attribute))->[304252001 For resuscitation (finding)]	Full code	1

System	Code	Display Text ^a	References ^b
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a Observation procedure (procedure)] - >(363702006 Has focus (attribute))->[304253006 Not for resuscitation (finding)]	Do Not Resuscitate (DNR)	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a Observation procedure (procedure)] - >(363702006 Has focus (attribute))->[416098002 Drug allergy (disorder)]	Postcoordinated Expression	2
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a Observation procedure (procedure)] - >(363702006 Has focus (attribute))->[42343007 Congestive heart failure (disorder)]	Congestive heart failure (CHF)	1
SNOMED CT	a6894e46-3838-430b-b163-99fc45eada51 Dietetic diet (regime/therapy)	Precoordinated Expression	1
SNOMED CT	b43fa6a5-94a3-4098-8514-b4b5da9b899d Ambulating with assistance (regime/therapy)	Precoordinated Expression	1
SNOMED CT	c8006fd5-76d8-4c36-aa0c-90e6ff79d787 Magnetic resonance imaging of heart with delayed gadolinium contrast (procedure)	Precoordinated Expression	1
SNOMED CT	d37a9b17-bcb1-48a2-ab42-6b952d49404f No salt added diet (regime/therapy)	Precoordinated Expression	1
SNOMED CT	fc801a9-8501-4343-a466-ace348383326 Cardiac semi-soft 2 gram sodium diet (regime/therapy)	2gm Na	1

^aIf a code is used multiple times in the KNART, only the display text of the first instance is shown.

^bCount of the number of times the given code system and code pair is used in the KNART.

^cTSR-NoCode is a placeholder indicating a code was requested, but was not provided.

Chapter 18. Behavior Symbols

Table 18.1. Group Organizational Behavior

Sym- bol	Name	Definition
#	Sentence Group	A group of related alternative actions is a sentence group if the item referenced by the action is the same in all the actions, and each action simply constitutes a different variation on how to specify the details for that item. For example, two actions that could be in a SentenceGroup are "aspirin, 500 mg, 2 times per day" and "aspirin, 300 mg, 3 times per day". In both cases, aspirin is the item referenced by the action, and the two actions represent two different options for how aspirin might be ordered for the patient. Note that a SentenceGroup would almost always have an associated selection behavior of "AtMostOne", unless it's a required action, in which case, it would be "ExactlyOne".
#	Logical Group	A group with this behavior logically groups its sub-elements, and may be shown as a visual group to the end user, but it is not required to do so.
➤	Visual Group	Any group marked with this behavior should be displayed as a visual group to the end user.

Table 18.2. Group Selection Behavior

Sym- bol	Name	Definition
#	Any	Any number of the items in the group may be chosen, from zero to all.
#	All	All the items in the group must be selected as a single unit.
#	AllOrNone	All the items in the group are meant to be chosen as a single unit: either all must be selected by the end user, or none may be selected.
#	ExactlyOne	The end user must choose one and only one of the selectable items in the group. The user may not choose none of the items in the group.
★	AtMostOne	The end user may choose zero or at most one of the items in the group.
✱	OneOrMore	The end user must choose a minimum of one, and as many additional as desired.

Table 18.3. Required Behavior

Sym- bol	Name	Definition
◆	Must	An action with this behavior must be included in the actions processed by the end user; the end user may not choose not to include this action.

Sym- bol	Name	Definition
◇	Could	An action with this behavior may be included in the set of actions processed by the end user.
➤	MustUnlessDocumented	An action with this behavior must be included in the set of actions processed by the end user, unless the end user provides documentation as to why the action was not included.

Table 18.4. Precheck Behavior

Sym- bol	Name	Definition
▲	Yes	An action with this behavior is one of the most frequent actions that is, or should be, included by an end user, for the particular context in which the action occurs. The system displaying the action to the end user should consider "pre-checking" such an action as a convenience for the user.
#	No	An action with this behavior is one of the less frequent actions included by the end user, for the particular context in which the action occurs. The system displaying the actions to the end user would typically not "pre-check" such an action.

Table 18.5. Cardinality Behavior

Sym- bol	Name	Definition
◆	Single	An action with this behavior may only be completed once.
❖	Multiple	An action with this behavior may be repeated multiple times.

Table 18.6. Item Flags

Sym- bol	Name	Definition
☞	fillIn	This item, in a list entry, allows the user to enter a fill in value that is not present in the set of presented choices.

Table 18.7. Read Only Behavior

Sym- bol	Name	Definition
#	true	For a particular action or action group, specifies whether the elements are read only.

Appendix A. References

This appendix contains the list of related resources and supporting documents used in creating this KNART.

List of References

Related Resources

[CCWP] *Cardiology: Admission Orders - Heart Failure Clinical Content White Paper*

[CSD] *Cardiology: Admission Orders - Heart Failure Order Set Conceptual Structure Document*

[KVRpt] *Cardiology: Admission Orders - Heart Failure Order Set KNART Validation Report*

Supporting Evidence

[Yancy 2017] Yancy, Clyde W, Mariell Jessup, Biykem Bozkurt, Javed Butler, Donald E Casey, Monica M Colvin, Mark H Drazner, et al. 2017. "2017 ACC/AHA/HFSA Focused Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America." *Journal of Cardiac Failure* 23 (8): 628–51. doi:10.1016/j.cardfail.2017.04.014 (link [https://doi.org/10.1016/j.cardfail.2017.04.014])

[NLM 2017a] *BIDIL- hydralazine hydrochloride and isosorbide dinitrate tablet, film coated [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e1e63cd5-d1e4-4af5-bad5-1ad41ea46b00.* (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e1e63cd5-d1e4-4af5-bad5-1ad41ea46b00])

[NLM 2017b] *BUMETANIDE- bumetanide injection, solution [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e71daa68-2744-47da-64b4-0a725c2e8457.* (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e71daa68-2744-47da-64b4-0a725c2e8457])

[NLM 2017c] *BUMETANIDE- bumetanide tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=04236576-01c4-43a6-ac8a-60e23b5dc692.* (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=04236576-01c4-43a6-ac8a-60e23b5dc692])

[NLM 2017d] *CARVEDILOL- carvedilol tablet, coated [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=7d485d38-5d43-4a54-bc63-82734035c66a.* (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=7d485d38-5d43-4a54-bc63-82734035c66a])

[NLM 2017e] *DIGOXIN- digoxin tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=dfac7f13-28be-423d-9389-9089da29da17.* (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=dfac7f13-28be-423d-9389-9089da29da17])

[NLM 2017f] *ENALAPRIL MALEATE- enalapril maleate tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dai-*

- lymed/drugInfo.cfm?setid=ac0289a6-9533-4f8c-b46c-506dce1b90b5*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ac0289a6-9533-4f8c-b46c-506dce1b90b5])
- [NLM 2017g] *ENTRESTO- sacubitril and valsartan tablet, film coated [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=000dc81d-ab91-450c-8eae-8eb74e72296f*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=000dc81d-ab91-450c-8eae-8eb74e72296f])
- [NLM 2017h] *EPLERENONE- eplerenone tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=59e27acd-3877-babf-341b-b65968a8a607*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=59e27acd-3877-babf-341b-b65968a8a607])
- [NLM 2017i] *FUROSEMIDE - furosemide injection, solution [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c71371a7-75c5-45b8-b762-8d782d4c71bc*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c71371a7-75c5-45b8-b762-8d782d4c71bc])
- [NLM 2017j] *LASIX- furosemide tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=eadfe464-720b-4dcd-a0d8-45dba706bd33*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=eadfe464-720b-4dcd-a0d8-45dba706bd33])
- [NLM 2017k] *LISINOPRIL 2.5MG- lisinopril tablet; LISINOPRIL 5MG- lisinopril tablet; LISINOPRIL 10MG- lisinopril tablet; LISINOPRIL 20MG- lisinopril tablet; LISINOPRIL 40MG- lisinopril tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=09231502-068b-4439-8238-81c7e43a269c*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=09231502-068b-4439-8238-81c7e43a269c])
- [NLM 2017l] *LOSARTAN- losartan potassium tablet, film coated [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=3cdcf8c-c-4964-4c53-e054-00144ff88e88*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=3cdcf8c-c-4964-4c53-e054-00144ff88e88])
- [NLM 2017m] *SPIRONOLACTONE- spironolactone tablet; SPIRONOLACTONE- spironolactone tablet, film coated [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c23b6b9b-aec3-48a8-a518-76e4097f6479*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c23b6b9b-aec3-48a8-a518-76e4097f6479])
- [NLM 2017n] *TOPROL XL- metoprolol succinate tablet, extended release [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4a5762c6-d7a2-4e4c-10b7-8832b36fa5f4*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4a5762c6-d7a2-4e4c-10b7-8832b36fa5f4])
- [NLM 2017o] *VALSARTAN- valsartan tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=0135bbe4-0b38-4e92-8d7c-a4da3b6a544e*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=0135bbe4-0b38-4e92-8d7c-a4da3b6a544e])
- [Yancy 2013] Clyde W. Yancy, Mariell Jessup, Biykem Bozkurt, Javed Butler, Donald E. Casey, Mark H. Drazner, et al. 2013. "2013 ACCF/AHA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines." *Circulation* 128 (16): e240–327. doi:10.1161/CIR.0b013e31829e8776 (link [https://doi.org/10.1161/CIR.0b013e31829e8776])