

# **Neurosurgery: Radiculopathy (Lumbar Thoracic) Documentation Template**

## **Documentation Template: Conceptual Structure**

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**Department of Veterans Affairs (VA)**



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

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# Neurosurgery: Radiculopathy (Lumbar Thoracic) Documentation Template: Documentation Template: 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
June 16, 2018	Published
June 12, 2018	Published
March 29, 2018	Published
March 29, 2018	Reviewed
August 29, 2017	Pre-published
August 10, 2017	Created

**Table 2. Clinical White Paper Contributors**

Name	Role	Affiliation
David (Cory) Adamson, MD	Author	Physician, Atlanta, GA
Jacob Rachlin, MD	Author	Chief of Neurosurgery, VA Boston Health Care System, Boston, MA
Joseph King, MD	Author	Physician, Surgical Service, VA New England Healthcare System, West Haven, CT

**Table 3. Artifact Identifier**

Domain	Artifact ID	Name
urn:va.gov:kbs:knart:artifact:r1	b6bede46-4000-506c-a616-256f35bd0cf2	B40

# 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	SNOMED CT	133936004  Adult (person)	N/A	N/A
ClinicalVenue	Primary Care	SNOMED CT	5351000124100   Primary care clinic (environment)	N/A	N/A
ClinicalFocus	Referral to Neurosurgery for Radiculopathy (Lumbar/Thoracic).			N/A	N/A
TargetUser	Primary Care Provider	SNOMED CT	453231000124104  Primary care provider (occupation)	N/A	N/A
TargetUser	Emergency Medicine Provider	SNOMED CT	225728007   Accident and Emergency department (environment)	N/A	N/A
TargetUser	Anesthesiology Provider	SNOMED CT	1311000205109  Anesthesiology department (environment)	N/A	N/A
TargetUser	Pain Clinic Provider	SNOMED CT	702897005   Pain clinic (environment)	N/A	N/A
TargetUser	Physical Therapy Provider	SNOMED CT	7a8d82a5-6876-4b44-985c-6d6d483012c0  Physical therapy department (environment)	N/A	N/A
WorkflowTask	Referral to Neurosurgery for Radiculopathy (Lumbar/Thoracic).			N/A	N/A

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# Models

**Table 5. Model References**

Referenced Model	Description
urn:solor.io:anf-model:1.0	VA Analysis Normal Form Model

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# Chapter 1. External Data Definitions

## Definitions

**Table 1.1. lumbarThoracicSpineMRI**

Expression: type=elm:Query
Annotation: Lumbar/Thoracic Spine MRI
Codes: elm:value[elm:Code]: [398166005  Performed (qualifier value) elm:value[elm:Code]: [700319007  Magnetic resonance imaging of thoracic and lumbar spine (procedure) ]

**Table 1.2. lumbarThoracicSpineMRIInterpretation**

Expression: type=elm:Query
Annotation: Lumbar/Thoracic Spine MRI Interpretation
Codes: elm:value[elm:Code]: [398166005  Performed (qualifier value) elm:value[elm:Code]: [[370851004  Evaluation of diagnostic study results (procedure)] ->(363702006  Has focus (attribute))- >[700319007  Magnetic resonance imaging of thoracic and lumbar spine (procedure)]]

**Table 1.3. lumbarThoracicSpineCTMyelogram**

Expression: type=elm:Query
Annotation: Lumbar/Thoracic Spine CT Myelogram
Codes: elm:value[elm:Code]: [398166005  Performed (qualifier value) elm:value[elm:Code]: [42182e51-7e8b-4550-9a72-99b6987a0f12  Computed tomography myelogram of thoracolumbar region (procedure)]

**Table 1.4. lumbarThoracicSpineCTMyelogramInterpretation**

Expression: type=elm:Query
Annotation: Lumbar/Thoracic Spine CT Myelogram Interpretation
Codes: elm:value[elm:Code]: [398166005  Performed (qualifier value) elm:value[elm:Code]: [[370851004  Evaluation of diagnostic study results (procedure)] ->(363702006  Has focus (attribute))- >[182e51-7e8b-4550-9a72-99b6987a0f12  Computed tomography myelogram of thoracolumbar region (procedure)]]

**Table 1.5. lumbarThoracicSpineCT**

Expression: type=elm:Query
Annotation: Lumbar/Thoracic Spine CT
Codes: elm:value[elm:Code]: [398166005  Performed (qualifier value) elm:value[elm:Code]: [702487007  Computed tomography of thoracic and lumbar spine (procedure) ]

**Table 1.6. lumbarThoracicSpineCTInterpretation**

Expression: type=elm:Query
Annotation: Lumbar/Thoracic Spine CT Interpretation
Codes: elm:value[elm:Code]: [398166005  Performed (qualifier value) elm:value[elm:Code]: [[370851004  Evaluation of diagnostic study results (procedure)] ->(363702006  Has focus (attribute))- >[702487007  Computed tomography of thoracic and lumbar spine (procedure)]]



## Triggers

No trigger definitions are present.

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# Chapter 2. Expression Definitions

No expression definitions are present.

# Chapter 3. Chief Complaint

❖ What are the patient's chief complaints?

	<p>❖ prompt: Complaint</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Pain</p> <p>item: Numbness</p> <p>item: Weakness</p> <p>☞ item: Other</p> <p>Location of symptoms.</p>
	<p>❖ prompt: Where are these symptoms occurring?</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Low Back Pain([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] - &gt;(363702006  Has focus (attribute))- &gt;[279039007  Low back pain (finding)])</p> <p>item: Left Leg Pain([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] - &gt;(363702006  Has focus (attribute))- &gt;[10601006  Pain in lower limb (finding)]- - &gt;(272741003  Laterality (attribute))-&gt;[7771000  Left (qualifier value)];)</p> <p>item: Right Leg Pain([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] - &gt;(363702006  Has focus (attribute))- &gt;[10601006  Pain in lower limb (finding)]- -&gt;(272741003  Laterality (attribute))- &gt;[24028007  Right (qualifier value)];)</p> <p>item: Low Back Numbness([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] - &gt;(363702006  Has focus (attribute))- &gt;[44077006   Numbness (finding)]- - &gt;(363698007  Finding site (attribute))- &gt;[113182001  Skin structure of lower back (body structure)];)</p> <p>item: Left Leg Numbness([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] - &gt;(363702006  Has focus (attribute))- &gt;[44077006   Numbness (finding)]- -</p>

>(363698007 |Finding site (attribute))-  
 >[371304004 |Skin structure of lower limb  
 (body structure)]- ->(272741003 |Laterality  
 (attribute))->[7771000 |Left (qualifier value)];)

item: Right Leg

Numbness([a997cc03-3e99-40eb-833a-6374c7750a3a  
 |Observation procedure (procedure)] -  
 >(363702006 |Has focus (attribute))-  
 >[44077006 |Numbness (finding)]- -  
 >(363698007 |Finding site (attribute))-  
 >[371304004 |Skin structure of lower limb  
 (body structure)]- ->(272741003 |Laterality  
 (attribute))->[24028007 |Right (qualifier  
 value)];)

item: Low Back

Weakness([a997cc03-3e99-40eb-833a-6374c7750a3a  
 |Observation procedure (procedure)] -  
 >(363702006 |Has focus (attribute))-  
 >[13791008 |Asthenia (finding)]- ->(363698007  
 |Finding site (attribute))->[37822005 |Lower  
 back structure (body structure)];)

item: Left Leg

Weakness([a997cc03-3e99-40eb-833a-6374c7750a3a  
 |Observation procedure (procedure)] -  
 >(363702006 |Has focus (attribute))-  
 >[13791008 |Asthenia (finding)]- ->(363698007  
 |Finding site (attribute))->[371304004 |Skin  
 structure of lower limb (body structure)]- -  
 >(272741003 |Laterality (attribute))->[ 7771000  
 |Left (qualifier value)];)

item: Right Leg

Weakness([a997cc03-3e99-40eb-833a-6374c7750a3a  
 |Observation procedure (procedure)] -  
 >(363702006 |Has focus (attribute))-  
 >[13791008 |Asthenia (finding)]- ->(363698007  
 |Finding site (attribute))->[371304004 |Skin  
 structure of lower limb (body structure)]-  
 ->(272741003 |Laterality (attribute))-  
 >[24028007 |Right (qualifier value)];)

☞ item: Other

Details

Please provide details regarding the character of the pain (e.g., burning, shooting, aching, electric, jabbing, etc.).

prompt: Pain characteristics

response: Code (Multiple)

response range: EnumerationConstraint (List)

item: burning([a997cc03-3e99-40eb-833a-6374c7750a3a  
 |Observation procedure (procedure)] -  
 >(363702006 |Has focus (attribute))-  
 >[36349006 |Burning pain (finding)])

	<p>item: shooting([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -&gt;(363702006  Has focus (attribute))-&gt;[49575005  Shooting pain (finding)])</p> <p>item: aching([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -&gt;(363702006  Has focus (attribute))-&gt;[27635008  Aching pain (finding)])</p> <p>item: electric([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -&gt;(363702006  Has focus (attribute))-&gt;[723316007  Electric shock type pain (finding)])</p> <p>item: jabbing([a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -&gt;(363702006  Has focus (attribute))-&gt;[55145008  Stabbing pain (finding)])</p> <p>☞ item: Other</p> <p>Details</p>
	<p>Duration of symptoms</p> <p>prompt: What is the duration of symptoms?</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Acute (less than 2 weeks)([72274001  Nerve root disorder (disorder)] -&gt;(363698007  Finding site (attribute))-&gt;[737530005  Structure of thoracolumbar spinal cord nerve root (body structure)] -&gt;(263502005  Clinical course (attribute))-&gt;[373933003  Acute onset (qualifier value)])</p> <p>item: Subacute (less than 3 months)([72274001  Nerve root disorder (disorder)] -&gt;(363698007  Finding site (attribute))-&gt;[737530005  Structure of thoracolumbar spinal cord nerve root (body structure)] -&gt;(263502005  Clinical course (attribute))-&gt;[373935005  Subacute onset (qualifier value)])</p> <p>item: Chronic (greater than 3 months)([72274001  Nerve root disorder (disorder)] -&gt;(363698007  Finding site (attribute))-&gt;[737530005  Structure of thoracolumbar spinal cord nerve root (body structure)] -&gt;(263502005  Clinical course (attribute))-&gt;[90734009  Chronic (qualifier value)])</p>

# Chapter 4. Prior Conservative Therapies

Which conservative therapies have been tried?

Medications	
# ❖	<p>Non-steroidal anti-inflammatory drug (NSAIDs)</p> <p>Represented Concepts: [416118004  Administration (procedure)] -&gt;(260686004  Method (attribute))-&gt;[129445006  Administration - action (qualifier value)] -&gt;(363701004  Direct substance (attribute))-&gt;[16403005  Non-steroidal anti-inflammatory agent (product)]</p> <p># prompt: NSAID response: Code (Single)</p> <p># prompt: Dose response: PhysicalQuantity (Single)</p> <p># prompt: Date Started response: Timestamp (Single)</p> <p># prompt: Date Ended response: Timestamp (Single)</p> <p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 398166005  Performed (qualifier value) </p> <p>topic: Ppstcoordinated Expression [416118004  Administration (procedure)] -&gt;(260686004  Method (attribute))-&gt;[129445006  Administration - action (qualifier value)] -&gt;(363701004  Direct substance (attribute))-&gt;[16403005  Non-steroidal anti-inflammatory agent (product)]</p> <p>timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false</p>
# ❖	<p>Opioids</p> <p>Represented Concepts: [416118004  Administration (procedure)] -&gt;(260686004  Method (attribute))-&gt;[129445006  Administration - action (qualifier value)] -&gt;(363701004  Direct substance (attribute))-&gt;[360204007  Opiate (product)]</p> <p># prompt: Opioid Medication response: Code (Single)</p> <p># prompt: Dose response: PhysicalQuantity (Single)</p>

	<p># prompt: Date Started response: Timestamp (Single)</p> <p># prompt: Date Ended response: Timestamp (Single)</p> <p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 398166005  Performed (qualifier value) </p> <p>topic: Postcoordinated Expression [416118004  Administration (procedure)] -&gt;(260686004  Method (attribute))-&gt;[129445006   Administration - action (qualifier value)] - &gt;(363701004  Direct substance (attribute))- &gt;[360204007  Opiate (product)]</p> <p>timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false</p>
# ♦ Antiepileptics	<p>Represented Concepts: [416118004  Administration (procedure)] - &gt;(260686004  Method (attribute))-&gt;[129445006  Administration - action (qualifier value)] -&gt;(363701004  Direct substance (attribute))- &gt;[63094006  Anticonvulsant (product)]</p> <hr/> <p># prompt: Antiepileptic Medication response: Code (Single)</p> <p># prompt: Dose response: PhysicalQuantity (Single)</p> <p># prompt: Date Started response: Timestamp (Single)</p> <p># prompt: Date Ended response: Timestamp (Single)</p> <p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 398166005  Performed (qualifier value) </p> <p>topic: Postcoordinated Expression [416118004  Administration (procedure)] -&gt;(260686004  Method (attribute))-&gt;[129445006   Administration - action (qualifier value)] - &gt;(363701004  Direct substance (attribute))- &gt;[63094006  Anticonvulsant (product)]</p> <p>timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true</p>

	# ❖	<p>timing.includeUpperBound: false</p> <p>Tricyclic antidepressants</p> <hr/> <p>Represented Concepts: [416118004  Administration (procedure)] -&gt;[260686004  Method (attribute))-&gt;[129445006  Administration - action (qualifier value)] -&gt;[363701004  Direct substance (attribute))-&gt;[63094006  Anticonvulsant (product)]</p> <hr/> <p># prompt: Tricyclic antidepressant medication  response: Code (Single)  # prompt: Dose  response: PhysicalQuantity (Single)  # prompt: Date Started  response: Timestamp (Single)  # prompt: Date Ended  response: Timestamp (Single)</p> <p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression  398166005  Performed (qualifier value)   topic: Postcoordinated Expression [416118004  Administration (procedure)] -&gt;[260686004  Method (attribute))-&gt;[129445006  Administration - action (qualifier value)] -&gt;[363701004  Direct substance (attribute))-&gt;[63094006  Anticonvulsant (product)]  timing.lowerBound: 1  timing.upperBound: +INF  timing.includeLowerBound: true  timing.includeUpperBound: false</p>
		<p>Other Medications</p> <hr/> <p># prompt: Other Medication  response: Code (Single)  # prompt: Dose  response: PhysicalQuantity (Single)  # prompt: Date Started  response: Timestamp (Single)  # prompt: Date Ended  response: Timestamp (Single)</p>
		Other therapies
		<p># Occupational Therapy</p> <hr/> <p>Represented Concepts: 84478008  Occupational therapy (regime/therapy) </p> <hr/> <p># prompt: Therapy Summary</p>



	<p>response: String (Single)</p> <p># prompt: Date started</p> <p>response: Timestamp (Single)</p> <p># prompt: Date ended</p> <p>response: Timestamp (Single)</p> <p># prompt: Visits</p> <p>response: Integer (Single)</p> <p># prompt: Outcome</p> <p>response: String (Single)</p>
	<p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 398166005  Performed (qualifier value) </p> <p>topic: Precoordinated Expression 84478008   Occupational therapy (regime/therapy) </p> <p>timing.lowerBound: 1</p> <p>timing.upperBound: +INF</p> <p>timing.includeLowerBound: true</p> <p>timing.includeUpperBound: false</p>
	<p># Acupuncture</p>
	<p>Represented Concepts: 44868003  Acupuncture (procedure) </p>
	<p># prompt: Therapy Summary</p> <p>response: String (Single)</p> <p># prompt: Date started</p> <p>response: Timestamp (Single)</p> <p># prompt: Date ended</p> <p>response: Timestamp (Single)</p> <p># prompt: Visits</p> <p>response: Integer (Single)</p> <p># prompt: Outcome</p> <p>response: String (Single)</p>
	<p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 398166005  Performed (qualifier value) </p> <p>topic: Precoordinated Expression 44868003   Acupuncture (procedure) </p> <p>timing.lowerBound: 1</p> <p>timing.upperBound: +INF</p> <p>timing.includeLowerBound: true</p> <p>timing.includeUpperBound: false</p>

#	Spinal Manipulation
	<p>Represented Concepts: 44275008  Manipulation of spine (procedure) </p> <p># prompt: Therapy Summary response: String (Single)</p> <p># prompt: Date started response: Timestamp (Single)</p> <p># prompt: Date ended response: Timestamp (Single)</p> <p># prompt: Visits response: Integer (Single)</p> <p># prompt: Outcome response: String (Single)</p> <p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 398166005  Performed (qualifier value)  topic: Precoordinated Expression 44275008   Manipulation of spine (procedure)  timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false</p>
#	Cognitive behavioral therapy
	<p>Represented Concepts: 304891004  Cognitive - behavior therapy (regime/therapy) </p> <p># prompt: Therapy Summary response: String (Single)</p> <p># prompt: Date started response: Timestamp (Single)</p> <p># prompt: Date ended response: Timestamp (Single)</p> <p># prompt: Visits response: Integer (Single)</p> <p># prompt: Outcome response: String (Single)</p> <p>#</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 398166005  Performed (qualifier value)  topic: Precoordinated Expression 304891004   Cognitive - behavior therapy (regime/therapy) </p>

	<p>timing.lowerBound: 1</p> <p>timing.upperBound: +INF</p> <p>timing.includeLowerBound: true</p> <p>timing.includeUpperBound: false</p>
# Pain clinic	<p>Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))-&gt;[185248009  Seen in pain clinic (finding)]</p>
	<p># prompt: Therapy Summary</p> <p>response: String (Single)</p> <p># prompt: Date started</p> <p>response: Timestamp (Single)</p> <p># prompt: Date ended</p> <p>response: Timestamp (Single)</p> <p># prompt: Visits</p> <p>response: Integer (Single)</p> <p># prompt: Outcome</p> <p>response: String (Single)</p>
#	<p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression</p> <p>398166005  Performed (qualifier value) </p> <p>topic: Postcoordinated Expression</p> <p>[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -</p> <p>&gt;(363702006  Has focus (attribute))-</p> <p>&gt;[185248009  Seen in pain clinic (finding)]</p> <p>timing.lowerBound: 1</p> <p>timing.upperBound: +INF</p> <p>timing.includeLowerBound: true</p> <p>timing.includeUpperBound: false</p>
# Selective nerve root blocks	<p>Represented Concepts: 231043002  Local anesthetic block on spinal nerve root (procedure) </p>
	<p># prompt: Therapy Summary</p> <p>response: String (Single)</p> <p># prompt: Date started</p> <p>response: Timestamp (Single)</p> <p># prompt: Date ended</p> <p>response: Timestamp (Single)</p> <p># prompt: Visits</p> <p>response: Integer (Single)</p>

	<p># prompt: Outcome response: String (Single)</p>
#	<p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]  statementType: Precoordinated Expression  398166005  Performed (qualifier value)   topic: Precoordinated Expression 231043002   Local anesthetic block on spinal nerve root  (procedure)   timing.lowerBound: 1  timing.upperBound: +INF  timing.includeLowerBound: true  timing.includeUpperBound: false</p>
#	<p>Epidural steroid injections</p>
	<p>Represented Concepts: 303611006  Epidural steroid injection  (procedure) </p>
	<p># prompt: Therapy Summary  response: String (Single)  # prompt: Date started  response: Timestamp (Single)  # prompt: Date ended  response: Timestamp (Single)  # prompt: Visits  response: Integer (Single)  # prompt: Outcome  response: String (Single)</p>
#	<p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]  statementType: Precoordinated Expression  398166005  Performed (qualifier value)   topic: Precoordinated Expression 303611006    Epidural steroid injection (procedure)   timing.lowerBound: 1  timing.upperBound: +INF  timing.includeLowerBound: true  timing.includeUpperBound: false</p>
# ♦	<p>Other</p>
	<p># prompt: Therapy?  response: String (Single)  # prompt: Therapy Summary  response: String (Single)</p>

		# prompt: Date started
		response: Timestamp (Single)
		# prompt: Date ended
		response: Timestamp (Single)
		# prompt: Visits
		response: Integer (Single)
		# prompt: Outcome
		response: String (Single)

---

# Chapter 5. Medical History

Select items that apply from the patient's medical history.

# Chronic pain	
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)]- ->(363702006  Has focus (attribute))->[82423001  Chronic pain (finding)]	
	<div># prompt: Summary of chronic pain history response: String (Single) # prompt: Consult date response: Timestamp (Single) # prompt: Consult results response: String (Single) # prompt: Current status response: String (Single)</div>
#	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	<div>statementType: Precoordinated Expression 398166005   Performed (qualifier value)  topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)]- -&gt;(363702006  Has focus (attribute))- &gt;[82423001  Chronic pain (finding)] timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false</div>
# Post-traumatic stress disorder	
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[47505003  Posttraumatic stress disorder (disorder)]	
	<div># prompt: Summary of post-traumatic stress disorder history response: String (Single) # prompt: Consult date response: Timestamp (Single) # prompt: Consult results response: String (Single) # prompt: Current status response: String (Single)</div>
#	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	

	<p>statementType: Precoordinated Expression 398166005   Performed (qualifier value) </p> <p>topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))-&gt;[47505003  Posttraumatic stress disorder (disorder)]</p> <p>timing.lowerBound: 1</p> <p>timing.upperBound: +INF</p> <p>timing.includeLowerBound: true</p> <p>timing.includeUpperBound: false</p>
# Anxiety	<p>Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))-&gt;[48694002  Anxiety (finding)]</p> <p># prompt: Summary anxiety history</p> <p>response: String (Single)</p> <p># prompt: Consult date</p> <p>response: Timestamp (Single)</p> <p># prompt: Consult results</p> <p>response: String (Single)</p> <p># prompt: Current status</p> <p>response: String (Single)</p>
#	<p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 398166005   Performed (qualifier value) </p> <p>topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))-&gt;[48694002  Anxiety (finding)]</p> <p>timing.lowerBound: 1</p> <p>timing.upperBound: +INF</p> <p>timing.includeLowerBound: true</p> <p>timing.includeUpperBound: false</p>
# Depression	<p>Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))-&gt;[35489007  Depressive disorder (disorder)]</p> <p># prompt: Summary depression history</p> <p>response: String (Single)</p> <p># prompt: Consult date</p> <p>response: Timestamp (Single)</p> <p># prompt: Consult results</p> <p>response: String (Single)</p>

#	<p># prompt: Current status response: String (Single)</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p> <p>statementType: Precoordinated Expression 398166005   Performed (qualifier value) </p> <p>topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -&gt;(363702006 [Has focus (attribute))&gt;[35489007  Depressive disorder (disorder)]</p> <p>timing.lowerBound: 1</p> <p>timing.upperBound: +INF</p> <p>timing.includeLowerBound: true</p> <p>timing.includeUpperBound: false</p>
# ❖	<p>Other mental health conditions</p> <hr/> <p># prompt: Other mental health conditions response: String (Single)</p> <p># prompt: History response: String (Single)</p> <p># prompt: Consult date response: Timestamp (Single)</p> <p># prompt: Results response: String (Single)</p> <p># prompt: Current status response: String (Single)</p>
# ❖	<p>Oncological conditions</p> <hr/> <p># prompt: Summary response: String (Single)</p> <p># prompt: Consult date response: Timestamp (Single)</p> <p># prompt: Results response: String (Single)</p> <p># prompt: Current status response: String (Single)</p>
#	<p>Obesity</p> <hr/> <p># prompt: Body Mass Index (BMI) itemCode: 698094009  Measurement of body mass index (procedure)  response: PhysicalQuantity (Single)</p> <p><b>responseBinding:</b> Property ("bmi")</p> <p>actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]</p>



	<p>statementType: Precoordinated Expression 398166005   Performed (qualifier value) </p> <p>topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)]- -(363702006  Has focus (attribute))-&gt;[301331008  Finding of body mass index (finding)]</p> <p>result.lowerBound: bmi</p> <p>result.upperBound: bmi</p> <p>result.includeLowerBound: true</p> <p>result.includeUpperBound: true</p>
# ❖ Cardiovascular conditions	<p># prompt: Summary</p> <p>response: String (Single)</p> <p># prompt: Consult date</p> <p>response: Timestamp (Single)</p> <p># prompt: Results</p> <p>response: String (Single)</p> <p># prompt: Current status</p> <p>response: String (Single)</p>

---

# Chapter 6. Surgical History

Select items that apply from the patient's surgical history.

❖ Spinal surgery

---

Represented Concepts: 392236004 |Operative procedure on spinal structure (procedure)

---

prompt: Summary

response: String (Single)

prompt: Date

response: Timestamp (Single)

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

statementType: Precoordinated Expression 398166005 |  
Performed (qualifier value)|

topic: Precoordinated Expression 392236004 |Operative  
procedure on spinal structure (procedure)

timing.lowerBound: 1

timing.upperBound: +INF

timing.includeLowerBound: true

timing.includeUpperBound: false

❖ Other prior surgeries

---

prompt: Summary

response: String (Single)

prompt: Date

response: Timestamp (Single)

---

# Chapter 7. Social History

Select items that apply from the patient's social history.

Alcohol use
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[704197006  Admits alcohol use (finding)]
# prompt: Summary response: String (Single) # prompt: Current status response: String (Single) # prompt: Applicable dates response: Timestamp (Multiple)
# actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 398166005   Performed (qualifier value)  topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[704197006  Admits alcohol use (finding)] timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false
Alcohol abuse
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[15167005  Alcohol abuse (disorder)]
# prompt: Summary response: String (Single) # prompt: Current status response: String (Single) # prompt: Applicable dates response: Timestamp (Multiple)
# actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 398166005   Performed (qualifier value)  topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[15167005  Alcohol abuse (disorder)] timing.lowerBound: 1

	timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false
Rehabilitation	
Represented Concepts: 52052004  Rehabilitation therapy (regime/therapy)	
	# prompt: Summary response: String (Single) # prompt: Current status response: String (Single) # prompt: Applicable dates response: Timestamp (Multiple)
#	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	statementType: Precoordinated Expression 398166005   Performed (qualifier value)  topic: Precoordinated Expression 52052004  Rehabilitation therapy (regime/therapy)  timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false
Detoxification	
Represented Concepts: 67516001  Detoxification therapy (regime/therapy)	
	# prompt: Summary response: String (Single) # prompt: Current status response: String (Single) # prompt: Applicable dates response: Timestamp (Multiple)
#	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	statementType: Precoordinated Expression 398166005   Performed (qualifier value)  topic: Precoordinated Expression 67516001  Detoxification therapy (regime/therapy)  timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false
Current or former tobacco user	

Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[110483000 |Tobacco user (finding)]

# prompt: Summary  
response: String (Single)  
# prompt: Current status  
response: String (Single)  
# prompt: Applicable dates  
response: Timestamp (Multiple)  
# prompt: Pack years  
response: Integer (Single)

#

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

statementType: Precoordinated Expression 398166005 |  
Performed (qualifier value)|  
topic: Postcoordinated Expression  
[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation  
procedure (procedure)] ->(363702006 |Has focus (attribute))-  
>[110483000 |Tobacco user (finding)]  
timing.lowerBound: 1  
timing.upperBound: +INF  
timing.includeLowerBound: true  
timing.includeUpperBound: false

Cocaine use

Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[733461000 |Cocaine user (finding)]

# prompt: Summary  
response: String (Single)  
# prompt: Current status  
response: String (Single)  
# prompt: Applicable dates  
response: Timestamp (Multiple)

#

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

statementType: Precoordinated Expression 398166005 |  
Performed (qualifier value)|  
topic: Postcoordinated Expression  
[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation  
procedure (procedure)] ->(363702006 |Has focus (attribute))-  
>[733461000 |Cocaine user (finding)]  
timing.lowerBound: 1  
timing.upperBound: +INF  
timing.includeLowerBound: true

	timing.includeUpperBound: false
Cocaine abuse	
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[78267003  Cocaine abuse (disorder)]	
	# prompt: Summary response: String (Single) # prompt: Current status response: String (Single) # prompt: Applicable dates response: Timestamp (Multiple)
#	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	statementType: Precoordinated Expression 398166005   Performed (qualifier value)  topic: Postcoordinated Expression [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[78267003  Cocaine abuse (disorder)] timing.lowerBound: 1 timing.upperBound: +INF timing.includeLowerBound: true timing.includeUpperBound: false
Other substance use/abuse	
	# prompt: Summary response: String (Single) # prompt: Current status response: String (Single) # prompt: Applicable dates response: Timestamp (Multiple)
Homeless	
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[32911000  Homeless (finding)]	
	# prompt: Summary response: String (Single) # prompt: Current status response: String (Single) # prompt: Applicable dates response: Timestamp (Multiple)
#	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	statementType: Precoordinated Expression 398166005   Performed (qualifier value)

	<p>topic: Postcoordinated Expression  [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation  procedure (procedure)] -(363702006  Has focus (attribute))-  &gt;[32911000  Homeless (finding)]</p>
Unstable home environment	
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))->[276104006  Home unsettled (finding)]	
#	<p># prompt: Summary  response: String (Single)  # prompt: Current status  response: String (Single)  # prompt: Applicable dates  response: Timestamp (Multiple)</p>
# actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	<p>statementType: Precoordinated Expression 398166005    Performed (qualifier value)   topic: Postcoordinated Expression  [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation  procedure (procedure)] -(363702006  Has focus (attribute))-  &gt;[276104006  Home unsettled (finding)]</p>
Home environment conducive to healing	
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))->[224250004  Satisfactory living conditions (finding)]	
#	<p># prompt: Summary  response: String (Single)  # prompt: Current status  response: String (Single)  # prompt: Applicable dates  response: Timestamp (Multiple)</p>
# actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	<p>statementType: Precoordinated Expression 398166005    Performed (qualifier value)   topic: Postcoordinated Expression  [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation  procedure (procedure)] -(363702006  Has focus (attribute))-  &gt;[224250004  Satisfactory living conditions (finding)]</p>
Geographically remote (40+mile drive to medical care)	
Represented Concepts: [a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] -(363702006  Has focus (attribute))->[b0549379-fc0b-45dc-8a84-befe666432f5  Residence remote from medical facility (finding)]	
#	<p># prompt: Summary</p>

	response: String (Single)
	# prompt: Current status
	response: String (Single)
	# prompt: Applicable dates
	response: Timestamp (Multiple)
#	
	actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
	statementType: Precoordinated Expression 398166005
	Performed (qualifier value)
	topic: Postcoordinated Expression
	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation
	procedure (procedure)] ->(363702006  Has focus (attribute))-
	>[b0549379-fc0b-45dc-8a84-befe666432f5  Residence remote
	from medical facility (finding)]



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## Chapter 8. Imaging History

Lumbar/Thoracic Spine MRI Interpretation
Attach or link Images: Lumbar/Thoracic Spine MRI
<div># prompt: Lumbar/Thoracic Spine MRI Image</div> <div>response: Tuple (Multiple)</div> <div><b>initalValue:</b> lumbarThoracicSpineMRI</div> <div># prompt: Lumbar/Thoracic Spine MRI Interpretation</div> <div>response: Tuple (Multiple)</div> <div><b>initalValue:</b> lumbarThoracicSpineMRIInterpretation</div>
Lumbar/Thoracic Spine CT Myelogram Interpretation
Attach or link Images: Lumbar/Thoracic Spine CT Myelogram
<div># prompt: Lumbar/Thoracic Spine CT Myelogram Image</div> <div>response: Tuple (Multiple)</div> <div><b>initalValue:</b> lumbarThoracicSpineCTMyelogram</div> <div># prompt: Lumbar/Thoracic Spine CT Myelogram Interpretation</div> <div>response: Tuple (Multiple)</div> <div><b>initalValue:</b> lumbarThoracicSpineCTMyelogramInterpretation</div>
Lumbar/Thoracic Spine CT Interpretation
Lumbar/Thoracic Spine CT
<div># prompt: Lumbar/Thoracic Spine CT Image</div> <div>response: Tuple (Multiple)</div> <div><b>initalValue:</b> lumbarThoracicSpineCT</div> <div># prompt: Lumbar/Thoracic Spine CT Interpretation</div> <div>response: Tuple (Multiple)</div> <div><b>initalValue:</b> lumbarThoracicSpineCTInterpretation</div>

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# Chapter 9. Medications

❖ Current pain medication list

prompt: Pain Medications

response: Code (Multiple)

❖ Current anticoagulation and antiplatelet list

prompt: Pain Medications

response: Code (Multiple)

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# Chapter 10. Surgical Candidacy

# prompt: Does patient want to be considered for surgery?

response: Boolean (Single)

# prompt: Reason for neurosurgical consult

response: String (Single)

---

# Chapter 11. Tabular List

## *Terminology Service Request (TSR) Mappings*

**Table 11.1. Terminology Versions**

Name	Identifier	Version
SNOMED CT	2.16.840.1.113883.6.96	United States Edition 20180301

**Table 11.2. Terminology References**

System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
SNOMED CT	1311000205109   Anesthesiology department (environment)	Anesthesiology Provider	1
SNOMED CT	133936004  Adult (person)	Population 18 years old or older	1
SNOMED CT	225728007  Accident and Emergency department (environment)	Emergency Medicine Provider	1
SNOMED CT	231043002  Local anesthetic block on spinal nerve root (procedure)	Precoordinated Expression	2
SNOMED CT	303611006  Epidural steroid injection (procedure)	Precoordinated Expression	2
SNOMED CT	304891004  Cognitive - behavior therapy (regime/therapy)	Precoordinated Expression	2
SNOMED CT	392236004  Operative procedure on spinal structure (procedure)	Precoordinated Expression	2
SNOMED CT	398166005  Performed (qualifier value)	Precoordinated Expression	34
SNOMED CT	42182e51-7e8b-4550-9a72-916098740f12  Computed tomography myelogram of thoracolumbar region (procedure)	Precoordinated Expression	1
SNOMED CT	44275008  Manipulation of spine (procedure)	Precoordinated Expression	2
SNOMED CT	44868003  Acupuncture (procedure)	Precoordinated Expression	2
SNOMED CT	453231000124104   Primary care provider (occupation)	Primary Care Provider	1

System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
SNOMED CT	52052004  Rehabilitation therapy (regime/therapy)	Precoordinated Expression	2
SNOMED CT	5351000124100  Primary care clinic (environment)	Primary Care	1
SNOMED CT	67516001  Detoxification therapy (regime/therapy)	Precoordinated Expression	2
SNOMED CT	698094009  Measurement of body mass index (procedure)	Precoordinated	1
SNOMED CT	700319007  Magnetic resonance imaging of thoracic and lumbar spine (procedure)	Precoordinated Expression	1
SNOMED CT	702487007  Computed tomography of thoracic and lumbar spine (procedure)	Precoordinated Expression	1
SNOMED CT	702897005  Pain clinic (environment)	Pain Clinic Provider	1
SNOMED CT	7a8d82a5-6876-4b44-985c-016148307160  Physical therapy department (environment)	Physical Therapy Provider	1
SNOMED CT	84478008  Occupational therapy (regime/therapy)	Precoordinated Expression	2
SNOMED CT	[370851004  Evaluation of diagnostic study results (procedure)] ->(363702006  Has focus (attribute))->[182e51-7e8b-4550-9a72-99b6987a0f12  Computed tomography myelogram of thoracolumbar region (procedure)]	Postcoordinated Expression	1
SNOMED CT	[370851004  Evaluation of diagnostic study results (procedure)] ->(363702006  Has focus (attribute))->[700319007  Magnetic resonance imaging of thoracic and lumbar spine (procedure)]	Postcoordinated Expression	1
SNOMED CT	[370851004  Evaluation of diagnostic study results (procedure)] ->(363702006  Has focus (attribute))->[702487007  Computed tomography of	Postcoordinated Expression	1

System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
	thoracic and lumbar spine (procedure)]		
SNOMED CT	[416118004   Administration (procedure)] ->(260686004  Method (attribute))->[129445006   Administration - action (qualifier value)] ->(363701004  Direct substance (attribute))->[16403005  Non-steroidal anti-inflammatory agent (product)]	Ppstcoordinated Expression	2
SNOMED CT	[416118004   Administration (procedure)] ->(260686004  Method (attribute))->[129445006   Administration - action (qualifier value)] ->(363701004  Direct substance (attribute))->[360204007  Opiate (product)]	Postcoordinated Expression	2
SNOMED CT	[416118004   Administration (procedure)] ->(260686004  Method (attribute))->[129445006   Administration - action (qualifier value)] ->(363701004  Direct substance (attribute))->[63094006   Anticonvulsant (product)]	Postcoordinated Expression	4
SNOMED CT	[72274001  Nerve root disorder (disorder)] ->(363698007  Finding site (attribute))->[737530005   Structure of thoracolumbar spinal cord nerve root (body structure)] ->(263502005  Clinical course (attribute))->[373935005  Subacute onset (qualifier value)]	Subacute (less than 3 months)	1
SNOMED CT	[72274001  Nerve root disorder (disorder)] ->(363698007  Finding site	Chronic (greater than 3 months)	1

System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
	(attribute))->[737530005   Structure of thoracolumbar spinal cord nerve root (body structure)] - >(263502005  Clinical course (attribute))- >[90734009  Chronic (qualifier value)]		
SNOMED CT	[72274001  Nerve root disorder (disorder)]- - >(363698007  Finding site (attribute))->[737530005   Structure of thoracolumbar spinal cord nerve root (body structure)] - >(263502005  Clinical course (attribute))- >[373933003  Acute onset (qualifier value)]	Acute (less than 2 weeks)	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750314  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[10601006  Pain in lower limb (finding)]- - >(272741003  Laterality (attribute))->[24028007   Right (qualifier value)];	Right Leg Pain	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750314  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[10601006  Pain in lower limb (finding)]- - >(272741003  Laterality (attribute))->[7771000   Left (qualifier value)];	Left Leg Pain	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750314  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[110483000  Tobacco user (finding)]	Discontinued Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750314  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[13791008  Asthenia (finding)]- ->(363698007  Finding site (attribute))-	Left Leg Weakness	1

System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
	>[371304004  Skin structure of lower limb (body structure)]- ->(272741003  Laterality (attribute))->[ 7771000   Left (qualifier value)];		
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3e  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[13791008  Asthenia (finding)]- ->(363698007  Finding site (attribute))->[371304004  Skin structure of lower limb (body structure)]- ->(272741003  Laterality (attribute))->[24028007   Right (qualifier value)];	Right Leg Weakness	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3e  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[13791008  Asthenia (finding)]- ->(363698007  Finding site (attribute))->[37822005  Lower back structure (body structure)];	Lower Back Weakness	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3e  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[15167005  Alcohol abuse (disorder)]	Disordered Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3e  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[185248009  Seen in pain clinic (finding)]	Disordered Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3e  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[224250004  Satisfactory living conditions (finding)]	Disordered Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3e  Observation procedure (procedure)] ->(363702006  Has focus (attribute))-	Disordered Expression	2



System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
	>[276104006  Home unsettled (finding)]		
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[27635008  Aching pain (finding)]	6374c7750a3a	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[279039007  Low back pain (finding)]	6374c7750a3a	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[32911000  Homeless (finding)]	6374c7750a3a Coordinated Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[35489007  Depressive disorder (disorder)]	6374c7750a3a Coordinated Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[36349006  Burning pain (finding)]	6374c7750a3a	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[44077006   Numbness (finding)]- ->(363698007  Finding site (attribute))- >[113182001  Skin structure of lower back (body structure)];	6374c7750a3a Coordinated Expression	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))- >[44077006   Numbness (finding)]- ->(363698007  Finding site (attribute))-	6374c7750a3a Coordinated Expression	1

System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
	>[371304004  Skin structure of lower limb (body structure)]- ->(272741003  Laterality (attribute))->[24028007  Right (qualifier value)];		
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[44077006  Numbness (finding)]- ->(363698007  Finding site (attribute))->[371304004  Skin structure of lower limb (body structure)]- ->(272741003  Laterality (attribute))->[7771000  Left (qualifier value)];	Left Leg Numbness	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[47505003  Posttraumatic stress disorder (disorder)]	Posttraumatic Stress Disorder Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[48694002  Anxiety (finding)]	Anxiety Expression	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[49575005  Shooting pain (finding)]	Shooting Pain	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[55145008  Stabbing pain (finding)]	Stabbing Pain	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[704197006  Admits alcohol use (finding)]	Admits Alcohol Use Expression	2

System	Code	Display Text <sup>a</sup>	References <sup>b</sup>
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[723316007  Electric shock type pain (finding)]	Electric shock type pain	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[733461000  Cocaine user (finding)]	Cocaine user	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[78267003  Cocaine abuse (disorder)]	Cocaine abuse	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[b0549379-fc0b-45dc-8a84-befe666432f5  Residence remote from medical facility (finding)]	Residence remote from medical facility	2
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[301331008  Finding of body mass index (finding)]	Finding of body mass index	1
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a  Observation procedure (procedure)] ->(363702006  Has focus (attribute))->[82423001  Chronic pain (finding)]	Chronic pain	2

<sup>a</sup>If a code is used multiple times in the KNART, only the display text of the first instance is shown.

<sup>b</sup>Count of the number of times the given code system and code pair is used in the KNART.

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# Chapter 12. Behavior Symbols

**Table 12.1. Group Organizational Behavior**

Symbol	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 12.2. Group Selection Behavior**

Symbol	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 12.3. Required Behavior**

Symbol	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.
◇	Could	An action with this behavior may be included in the set of actions processed by the end user.

Symbol	Name	Definition
➤	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 12.4. Precheck Behavior**

Symbol	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 12.5. Cardinality Behavior**

Symbol	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 12.6. Item Flags**

Symbol	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 12.7. Read Only Behavior**

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

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# 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] *Neurosurgery: Radiculopathy (Lumbar Thoracic) Documentation Template Clinical Content White Paper*

[CSD] *Neurosurgery: Radiculopathy (Lumbar Thoracic) Documentation Template Conceptual Structure Document*

[KVRpt] *Neurosurgery: Radiculopathy (Lumbar Thoracic) Documentation Template KNART Validation Report*

## Supporting Evidence

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[Chou 2007] Chou, Roger, Amir Qaseem, Vincenza Snow, Donald Casey, J. Thomas Cross, Paul Shekelle, Douglas K Owens, Clinical Efficacy Assessment Subcommittee of the American College of Physicians, American College of Physicians, and American Pain Society Low Back Pain Guidelines Panel. 2007. "Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society" *Annals of Internal Medicine* 147 (7): 478–91. doi:10.7326/0003-4819-147-7-200710020-00006 (link [<https://doi.org/10.7326/0003-4819-147-7-200710020-00006>])

[Kreiner 2014] Kreiner, D. Scott, Steven W Hwang, John E Easa, Daniel K Resnick, Jamie L Baisden, Shay Bess, Charles H Cho, et al. 2014. "An Evidence-Based Clinical Guideline for the Diagnosis and Treatment of Lumbar Disc Herniation with Radiculopathy." *The Spine Journal: Official Journal of the North American Spine Society* 14 (1): 180–91. doi:10.1016/j.spinee.2013.08.003 (link [<http://www.spine.org/Pages/PracticePolicy/ClinicalCare/ClinicalGuidelines/Default.aspx>])

[Kreiner 2013] Kreiner, D. Scott, William O. Shaffer, Jamie L. Baisden, Thomas J. Gilbert, Jeffrey T. Summers, John F. Toton, Steven W. Hwang, Richard C. Mendel, Charles A. Reitman, et al. 2013. "An evidence-based clinical guideline for the diagnosis and treatment of degenerative lumbar spinal stenosis (update)". *The Spine Journal: Official Journal of the North American Spine Society* 13 (7): 734–43. doi:10.1016/j.spinee.2012.11.059 (link [<https://doi.org/10.1016/j.spinee.2012.11.059>])

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- drugInfo.cfm?setid=39d5270b-d957-4821-93d6-501b7b9f02d4* (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=39d5270b-d957-4821-93d6-501b7b9f02d4])
- [NLM 2016b] *NAPROSYN-naproxen tablet; EC-NAPROSYN-naproxen tablet delayed release; NAPROSYN-naproxen suspension; ANAPROX-naproxen sodium tablet; ANAPROX DS-naproxen sodium tablet. [Internet].: National Library of Medicine; 2016. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=68848217-03c9-4377-9be6-6f567e629129. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=68848217-03c9-4377-9be6-6f567e629129.]*
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