Women's Health:
Osteoporosis Screening Rule

Rule: Conceptual Structure

Contract: VA118-16-D-1008, Task Order (TO): VA-118-16-F-1008-0007, CLIN0007BA

Department of Veterans Affairs (VA)

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

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Women's Health: Osteoporosis Screening Rule: Rule: Conceptual Structure

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

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Table 1. Revision History

Date	Life Cycle Event
April 25, 2018	Published
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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	6ab2870a-7bc5-53c9-be4e-9fb798c50e15	O8

Artifact Applicability

Table 4. Applicability Foci, Description and Codes

Focus	Description	Code System	Code	Value Set	Value Set Version
PatientGender	Female	SNOMED CT	248152002 |Female (finding)|	N/A	N/A
PatientAgeGroup	Population 18 years old or older	SNOMED CT	133936004 |Adult (person)|	N/A	N/A
WorkflowSetting	Routine			N/A	N/A
TargetUser	Primary Care	SNOMED CT	453231000124104 |Primary care provider (occupation)|	N/A	N/A
TargetUser	Gynecology	SNOMED CT	702892004 |Obstetrics and gynecology clinic (environment)|	N/A	N/A
ClinicalVenue	Outpatient	SNOMED CT	33022008 |Hospital-based outpatient department (environment)|	N/A	N/A

Models

Table 5. Model References

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

Chapter 1. External Data Definitions

Definitions

Table 1.1. PatientAge

Expression: type=elm:SingletonFrom
Annotation:
Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[105726004 |Age AND/OR growth finding (finding)]]

Table 1.2. DiagnosedWithOsteporosis

Expression: type=elm:Query
Annotation:
Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[64859006 |Osteoporosis (disorder)]]

Table 1.3. DXAScanning

Expression: type=elm:Query
Annotation:
Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [241686001 |Dual energy X-ray photon absorptiometry (procedure)|]

Table 1.4. OsteporosisScreeningInterval

Expression: type=elm:Query
Annotation:
Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [300004007 |Screening for osteoporosis (procedure)|]

Table 1.5. Postmenopausal

Expression: type=elm:Query
Annotation:
Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[76498008 |Postmenopausal state (finding)]]

Table 1.6. HasHistoryOfFragilityFracture

Expression: type=elm:Query
Annotation:
Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[268029009 |Pathological fracture (disorder)]]

Table 1.7. LowBodyWeight

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [248342006 |Underweight (finding)|]

Table 1.8. BoneLossCausedByMedication

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[14651005 |Drug-induced osteoporosis (disorder)]]

Table 1.9. BoneLossCausedByDisease

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[17b00578-6b1b-4e0b-b2ee-76f69e6061ec |Osteoporosis due to disease (disorder)]]

Table 1.10. ParentalMedicalHistoryOfHipFracture

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[263225007 |Fracture of proximal end of femur (disorder)]]

Table 1.11. CurrentTobaccoSmoker

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[77176002 |Smoker (finding)]]

Table 1.12. HasAlcoholism

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[7200002 |Alcoholism (disorder)]]

Table 1.13. RheumatoidArthritis

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[69896004 |Rheumatoid arthritis (disorder)]]

Table 1.14. DXAScanTScore

Expression: type=elm:Query

Annotation:

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[3dfd49ed-a7e4-41a5-ab44-356015e345a2 |Dual energy X-ray photon absorptiometry scan T score]]

Table 1.15. MostRecentDXAScanTScore

Expression: type=elm:Indexer

Annotation:

Codes:

Triggers

Table 1.16. AccessOfPatientRecord

Trigger: type=DataEventTrigger, DataElementAccessed

Expression: type=elm:Instance

Annotation: Access of the patient record in a preventive care encounter at a primary care clinic or in an Obstetrics/Gynecology (OB/GYN) or women's health outpatient department.

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [TSR-NoCode]

Table 1.17. DxaScanGreaterEqualFifteenYears

Trigger: type=DataEventTrigger, DataElementAccessed

Expression: type=elm:Instance

Annotation: Previous DXA scan >= 15 years before today.

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [241686001 |Dual energy X-ray photon absorptiometry (procedure)|]

Table 1.18. DxaScanGreaterEqualFiveYears

Trigger: type=DataEventTrigger, DataElementAdded

Expression: type=elm:Instance

Annotation: Previous DXA scan >= 5 years before today.

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [241686001 |Dual energy X-ray photon absorptiometry (procedure)|]

Table 1.19. DxaScanGreaterEqualOneYear

Trigger: type=DataEventTrigger, DataElementAdded

Expression: type=elm:Instance

Annotation: Previous DXA scan >= 1 year before today.

Codes: elm:value[elm:Code]: [398166005 |Performed (qualifier value)|]elm:value[elm:Code]: [241686001 |Dual energy X-ray photon absorptiometry (procedure)|]

Table 1.20. EndPatientPerferredScreeningInterval

Trigger: type=DataEventTrigger, DataElementModified

Expression: type=elm:Instance

Annotation: End of set patient-preferred screening interval.

Codes: elm:value[elm:Code]: [385644000 |Requested (qualifier value)|]elm:value[elm:Code]: [300004007 |Screening for osteoporosis (procedure)|]

Chapter 2. Expression Definitions

No expression definitions are present.

Chapter 3. Actions

Condition:elm:GreaterOrEqual (PatientAge elm:Quantity(65))

Condition:elm:Not (elm:Exists(DiagnosedWithOsteporosis))

Condition:elm:Not (elm:Exists(DXAScanning))

Condition:elm:Not (elm:Exists(OsteporosisScreeningInterval))

Identify the patient as an osteoporosis screening candidate.	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Documentation Template: Osteoporosis Screening KNART.	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Order Set: Osteoporosis Screening KNART.	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Make screening guideline recommendations available for review.	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Condition:elm:Less (PatientAge elm:Quantity(65))

Condition:elm:Exists (Postmenopausal)

Condition:elm:AnyTrue ( )

Condition:elm:Not (elm:Exists(DiagnosedWithOsteporosis))

Condition:elm:Not (elm:Exists(OsteporosisScreeningInterval))

Identify the patient as an osteoporosis screening candidate	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Documentation Template: Osteoporosis Screening KNART	

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

> "statementType:Precoordinated Expression topic:Precoordinated Expression"
>
> (Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Open Order Set: Osteoporosis Screening KNART

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

> "statementType:Precoordinated Expression topic:Precoordinated Expression"
>
> (Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Make screening guideline recommendations available for review

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

> "statementType:Precoordinated Expression topic:Precoordinated Expression"
>
> (Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Condition:elm:GreaterOrEqual (PatientAge elm:Quantity(65))

Condition:elm:GreaterOrEqual (MostRecentDXAScanTScore elm:Quantity(-1.5))

Condition:elm:Not (elm:Exists(DiagnosedWithOsteporosis))

Condition:elm:Not (elm:Exists(OsteporosisScreeningInterval))

Identify the patient as an osteoporosis screening candidate

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

> "statementType:Precoordinated Expression topic:Precoordinated Expression"
>
> (Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Open Documentation Template: Osteoporosis Screening KNART

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

> "statementType:Precoordinated Expression topic:Precoordinated Expression"
>
> (Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Open Order Set: Osteoporosis Screening KNART

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

> "statementType:Precoordinated Expression topic:Precoordinated Expression"
>
> (Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Make screening guideline recommendations available for review

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

> "statementType:Precoordinated Expression topic:Precoordinated Expression"

	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Condition:elm:GreaterOrEqual (PatientAge elm:Quantity(65))	
Condition:elm:And (elm:Greater(MostRecentDXAScanTScore elm:Quantity(-2.0))elm:Less(MostRecentDXAScanTScore elm:Quantity(-1.5)))	
Condition:elm:Not (elm:Exists(DiagnosedWithOsteporosis))	
Condition:elm:Not (elm:Exists(OsteporosisScreeningInterval))	

Identify the patient as an osteoporosis screening candidate	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Documentation Template: Osteoporosis Screening KNART	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Order Set: Osteoporosis Screening KNART	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Make screening guideline recommendations available for review	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Condition:elm:GreaterOrEqual (PatientAge elm:Quantity(65))
Condition:elm:In (MostRecentDXAScanTScore elm:Interval())
Condition:elm:Not (elm:Exists(DiagnosedWithOsteporosis))
Condition:elm:Not (elm:Exists(OsteporosisScreeningInterval))

Identify the patient as an osteoporosis screening candidate	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	
	"statementType:Precoordinated Expression topic:Precoordinated Expression"
	(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Documentation Template: Osteoporosis Screening KNART	
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]	

		"statementType:Precoordinated Expression topic:Precoordinated Expression"
		(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Order Set: Osteoporosis Screening KNART		
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]		
		"statementType:Precoordinated Expression topic:Precoordinated Expression"
		(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Make screening guideline recommendations available for review		
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]		
		"statementType:Precoordinated Expression topic:Precoordinated Expression"
		(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Condition:elm:Not (elm:Exists(DiagnosedWithOsteporosis))

Condition:elm:Exists (OsteporosisScreeningInterval)

Identify the patient as an osteoporosis screening candidate		
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]		
		"statementType:Precoordinated Expression topic:Precoordinated Expression"
		(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Documentation Template: Osteoporosis Screening KNART		
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]		
		"statementType:Precoordinated Expression topic:Precoordinated Expression"
		(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Open Order Set: Osteoporosis Screening KNART		
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]		
		"statementType:Precoordinated Expression topic:Precoordinated Expression"
		(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)
Make screening guideline recommendations available for review		
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]		
		"statementType:Precoordinated Expression topic:Precoordinated Expression"
		(Codes: 385644000 |Requested (qualifier value)| TSR-NoCode)

Chapter 4. Tabular List

Terminology Service Request (TSR) Mappings

Table 4.1. Terminology Versions

Name	Identifer	Version
SNOMED CT	2.16.840.1.113883.6.96	United States Edition 20180301
RXNorm	2.16.840.1.113883.6.1	5-Mar-18

Table 4.2. Terminology References

System	Code	Display Text	References
SNOMED CT	133936004 |Adult (person)|	Population 18 years old or older	1
SNOMED CT	241686001 |Dual energy X-ray photon absorptiometry (procedure)|	Precoordinated Expression	4
SNOMED CT	248152002 |Female (finding)|	Female	1
SNOMED CT	248342006 |Underweight (finding)|	Precoordinated Expression	1
SNOMED CT	300004007 |Screening for osteoporosis (procedure)|	Precoordinated Expression	2
SNOMED CT	33022008 |Hospital-based outpatient department (environment)|	Outpatient	1
SNOMED CT	385644000 |Requested (qualifier value)|	Precoordinated Expression	25
SNOMED CT	398166005 |Performed (qualifier value)|	Precoordinated Expression	18
SNOMED CT	453231000124104 |Primary care provider (occupation)|	Primary Care	1
SNOMED CT	702892004 |Obstetrics and gynecology clinic (environment)|	Gynecology	1
SNOMED CT	TSR-NoCode	Precoordinated Expression	25
SNOMED CT	[a997cc03-3e99-40eb-833a-6374c7750a3a |Observation procedure (procedure)] ->(363702006 |Has focus (attribute))->[105726004 |Age AND/OR growth finding (finding)]	Postcoordinated Expression	1

System	Code	Display Text	References
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[14651005 | Drug-induced osteoporosis (disorder)]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Ob-servation procedure (pro-cedure)] ->(363702006 |Has focus (at-tribute))->[17b00578-6b1b-4e0b-b2ee-76f69e6061ec |Osteo-porosis due to disease (dis-order)]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[263225007 |Fracture of proximal end of femur (disorder)]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[268029009 | Pathological fracture (dis-order)]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[3dfd49ed-a7e4-41a5-ab44-356015e345a2 |Dual energy X-ray photon ab-sorptiometry scan T score]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[64859006 | Osteoporosis (disorder)]	Postcoordinated Expression	1

System	Code	Display Text	References
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[69896004 | Rheumatoid arthritis (dis-order)]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[7200002 |Al-coholism (disorder)]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[76498008 |Postmenopausal state (finding)]	Postcoordinated Expression	1
SNOMED CT	[a997cc03-3e99-40e-b-833a-6374c7750a3a |Observation proce-dure (procedure)] ->(363702006 |Has focus (attribute))->[77176002 | Smoker (finding)]	Postcoordinated Expression	1

Chapter 5. Behavior Symbols

Table 5.1. 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 5.2. 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 5.3. 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.

Symbol	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 5.4. 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 5.5. 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 5.6. 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 5.7. Read Only Behavior

Symbol	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] *Women's Health: Osteoporosis Screening Clinical Content White Paper*

[CSD] *Women's Health: Osteoporosis Screening Rule Conceptual Structure Document*

[KVRpt] *Women's Health: Osteoporosis Screening Rule KNART Validation Report*

Supporting Evidence

[AGOG, 2012] *Committee on Practice Bulletins-Gynecology, ACOG. AGOG Practice Bulletin N. 129. Osteoporosis. Obstet Gynecol. 2012;120(3):718-734* (link [https://doi.org/10.1097/AOG.0b013e31826dc446])

[Cosman, 2014] *Cosman F, de Beur S.J., LeBoff M.S., Lewiecki E.M., Tanner B, Randall S, Lindsay R. Clinician's Guide to Prevention and Treatment of Osteoporosis. Osteoporosis International. 2014;25(10):2359-2381* (link [http://doi.org/10.1007/s00198-014-2794-2])

[Gourlay, 2012] *Gourlay ML, Fine JP, Preisser JS, May RC, Li C, Lui LY, Ransohoff DF, Cauley JA, Ensrud KE. Bone-density testing interval and transition to osteoporosis in older women. New England Journal of Medicine. 2012 Jan;19(366):225-33* (link [https://dx.doi.org/10.1056%2FNEJMoa1107142])

[NIH, 2017] *National Institutes of Health. Calcium Fact Sheet for Health Professionals. Accessed August 2017.* (link [https://ods.od.nih.gov/factsheets/Calcium-HealthProfessional/])

[USPTF 2015] *USPSTF. Final Update Summary: Osteoporosis: U.S. Preventive Services Task Force website. Reviewed July 2015* (link [https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/osteoporosis-screening])