Rheumatology: Rheumatoid Arthritis Order Set

Order Set: Conceptual Structure

Contract: VA118-16-D-1008, Task Order (TO): VA-118-16-F-1008-0007, CLIN0004AE

Department of Veterans Affairs (VA)

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

Publication date 03/21/2018

Version: 1.0

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

Publication date 03/21/2018

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Preface

Table 1. Revision History

Date	Life Cycle Event
March 21, 2018	Published
March 21, 2018	Reviewed
March 2, 2018	Published
November 6, 2017	Created
August 24, 2017	Pre-published

Table 2. Clinical White Paper Contributors

Name	Role	Affiliation
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Table 3. Artifact Identifier

Domain	Artifact ID	Name
urn:va.gov:kbs:knart:artifact:r1	34a8654c-a4e6-51da-9154-504de025a02b	B14

Artifact Applicability

Table 4. Applicability Foci, Description and Codes

Focus	Description	Code System Name	Code System	Code	Code System Version	Value Set	Value Set Version
PatientAgeGroup	Population 18 years old or older	SNOMED CT	SNOMED CT	410604004			
ClinicalVenue	Primary Care						
ClinicalVenue	Outpatient	SNOMED CT	SNOMED CT	33022008			

Models

Table 5. Model References

Referenced Model	Description
urn:solor.io:anf-model:0.8	VA Analysis Normal Form Model

Chapter 1. External Data Definitions

Table 1.1. cReactiveProteinLab

Expression: type=elm:Retrieve, dataType=anf:MeasurementOfLaboratoryTestAction, codeProperty=topicFocus, dateProperty=dateTime	
Annotation: C-reactive protein	
Codes: elm:List	
	element[elm:Code]: C-reactive protein 55235003
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-3 Month))
	high: elm:Today()

Table 1.2. erythrocyteSedimentationRateLab

Expression: type=elm:Retrieve, dataType=anf:MeasurementOfLaboratoryTestAction, codeProperty=topicFocus, dateProperty=dateTime	
Annotation: Erythrocyte sedimentation rate	
Codes: elm:List	
	element[elm:Code]: Erythrocyte sedimentation rate 416838001
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-3 Month))
	high: elm:Today()

Table 1.3. hepatitisCAntibodyScreenLab

Expression: type=elm:Retrieve, dataType=anf:MeasurementOfLaboratoryTestAction, codeProperty=topicFocus, dateProperty=dateTime	
Annotation: Hepatitis C antibody screen	
Codes: elm:List	
	element[elm:Code]: Hepatitis C antibody screen 413107006
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-3 Month))
	high: elm:Today()

Table 1.4. completeBloodcountLab

Expression: type=elm:Retrieve, dataType=anf:MeasurementOfLaboratoryTestAction, codeProperty=topicFocus, dateProperty=dateTime	
Annotation: Complete blood count	
Codes: elm:List	
	element[elm:Code]: Complete blood count 26604007
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-3 Month))
	high: elm:Today()

Table 1.5. completeMetabolicPanelLab

Expression: type=elm:Retrieve, dataType=anf:MeasurementOfLaboratoryTestAction, codeProperty=topicFocus, dateProperty=dateTime

Annotation: Complete metabolic panel	
Codes: elm:List	
	element[elm:Code]: Complete metabolic panel 85acf077-d744-48bc-b57a-fa3b5ce12d97
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-3 Month))
	high: elm:Today()

Table 1.6. rheumatoidFactorLab

Expression: type=elm:Retrieve, dataType=anf:MeasurementOfLaboratoryTestAction, codeProperty=topicFocus, dateProperty=dateTime	
Annotation: Rheumatoid factor	
Codes: elm:List	
	element[elm:Code]: Rheumatoid factor 54921001
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-3 Month))
	high: elm:Today()

Table 1.7. antiCyclicCitrullinatedPeptideAntibodyLab

Expression: type=elm:Retrieve, dataType=anf:MeasurementOfLaboratoryTestAction, codeProperty=topicFocus, dateProperty=dateTime	
Annotation: Anti-cyclic citrullinated peptide antibody	
Codes: elm:List	
	element[elm:Code]: Anti-cyclic citrullinated peptide antibody 408200008
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-3 Month))
	high: elm:Today()

Table 1.8. xRayHandsImaging

Expression: type=elm:Retrieve, dataType=anf:RadiographicImagingOfBodyStructureAction, codeProperty=topicFocus, dateProperty=dateTime	
Annotation:	
Codes: elm:List	
	element[elm:Code]: x-ray hands, bilateral 85562004
dateRange[elm:Interval]	low: elm:Add(elm:Today() elm:Quantity(-1 Year))
	high: elm:Today()

Chapter 2. Medications

No medications are required prior to a rheumatology consult. However, if prednisone is considered prior to the rheumatology consult, be aware that prednisone can potentially mask symptoms that would be evaluated by rheumatology.

prompt: Acknowledge

response: Boolean (Single)

Chapter 3. Laboratory Studies

Consider ordering the following laboratory studies if they have not been ordered within the last three months. Note: The Anti-Nuclear Antibody (ANA) test is not considered appropriate to be ordered for suspected rheumatoid arthritis.

Condition:elm:Not (elm:Exists(rheumatoidFactorLab))

☐ Rheumatoid Factor

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

"topicFocus:Rheumatoid Factor"

(Codes: 54921001)

Condition:elm:Not (elm:Exists(antiCyclicCitrullinatedPeptideAntibodyLab))

☐ Anti-cyclic citrullinated peptide antibody (ACPA/Anti-CCP)

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

"topicFocus:Anti-cyclic citrullinated peptide antibody (ACPA/Anti-CCP)"

(Codes: 408200008)

Condition:elm:Not (elm:Exists(hepatitisCAntibodyScreenLab))

☐ Hepatitis C Antibody Screen

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

"topicFocus:Hepatitis C Antibody Screen"

(Codes: 413107006)

Condition:elm:Not (elm:Exists(completeBloodcountLab))

☐ Complete Blood Count

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

"topicFocus:Complete Blood Count"

(Codes: 26604007)

Condition:elm:Not (elm:Exists(completeMetabolicPanelLab))

☐ Complete Metabolic Panel

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

"topicFocus:Complete Metabolic Panel"

(Codes: 85acf077-d744-48bc-b57a-fa3b5ce12d97)

Condition:elm:Not (elm:Exists(cReactiveProteinLab))

☐ C-Reactive Protein

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

"topicFocus:C-Reactive Protein"

(Codes: 55235003)

Condition:elm:Not (elm:Exists(erythrocyteSedimentationRateLab))

☐ Erythrocyte Sedimentation Rate

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

"topicFocus:Erythrocyte Sedimentation Rate"
(Codes: 416838001)

Chapter 4. Imaging and Diagnostic Studies

Consider ordering the following imaging study if it has not been done within the past year.

Condition:elm:Not (elm:Exists(xRayHandsImaging))

☐ x-ray hands, bilateral, to evaluate for possible rheumatoid arthritis

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

"topicFocus:Hand structure laterality:Right and left , indicationForProcedure:Rheumatoid arthritis"

(Codes: 85562004 51440002 69896004)

Chapter 5. Tabular List

Terminology Service Request (TSR) Mappings

Table 5.1. Terminology References

System	Code	Display Text	References
SNOMED CT	26604007	Complete blood count	2
SNOMED CT	33022008	Outpatient	1
SNOMED CT	408200008	Anti-cyclic citrullinated peptide antibody	2
SNOMED CT	410604004	Population 18 years old or older	1
SNOMED CT	413107006	Hepatitis C antibody screen	2
SNOMED CT	416838001	Erythrocyte sedimentation rate	2
SNOMED CT	51440002	Right and left	1
SNOMED CT	54921001	Rheumatoid factor	2
SNOMED CT	55235003	C-reactive protein	2
SNOMED CT	69896004	Rheumatoid arthritis	1
SNOMED CT	85562004	x-ray hands, bilateral	2
SOLOR	85acf077-d744-48bc-b57a-fa3b5ce12d97	Complete metabolic panel	2

Chapter 6. Behavior Symbols

Table 6.1. 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 6.2. 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 6.3. 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 6.4. 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 6.5. 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 6.6. 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.

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] *Rheumatology: Rheumatoid Arthritis Clinical Content White Paper*

[CSD] *Rheumatology: Rheumatoid Arthritis Conceptual Structure Document*

[KVRpt] *Rheumatology: Rheumatoid Arthritis Validation Report*

Supporting Evidence

[Aletaha 2010] *Aletaha, D., Neogi, T., Silman, A. J., Funovits, J., Felson, D. T., Bingham, C. O., et al. (2010). 2010 rheumatoid arthritis classification criteria: An american college of rheumatology/european league against rheumatism collaborative initiative. Arthritis and Rheumatism, 62(9), 2569-2581. doi:10.1002/art.27584 [doi]* (link [https://doi.org/doi:10.1002/art.27584])

[Singh 2015] *Singh, J. A., Saag, K. G., Bridges, S. L., Akl, E. A., Bannuru, R. R., Sullivan, M. C., et al. (2016). 2015 american college of rheumatology guideline for the treatment of rheumatoid arthritis. Arthritis & Rheumatology (Hoboken, N.J.), 68(1), 1-26. doi:10.1002/art.39480 [doi]* (link [https://doi.org/doi:10.1002/art.39480])