

General E-Consult 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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General E-Consult 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 14, 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	8d4512ca-6e86-5a7e-ac2d-2ff6d15c7352	B47

Artifact Applicability

Table 4. Applicability Foci, Description and Codes

Focus	Description	Code System	Code	Value Set	Value Set Version
TargetUser	Clinical Providers			N/A	N/A
PatientAgeGroup	All patients			N/A	N/A
ClinicalFocus	Stat E-Consult: response within 24 hours; Routine E-Consult: response as soon as possible, but within 7 days; Routine E-Consult with Scheduling Instructions: response time-frame specified by ordering provider			N/A	N/A
WorkflowSetting	All to include Inpatient and outpatient			N/A	N/A
ClinicalVenue	Any clinical specialty needing an E-Consult			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

No externalData expression definitions and no trigger definitions are present.

Chapter 2. Expression Definitions

No expression definitions are present.

Chapter 3. E-Consult Request

♦ E-Consult Request
prompt:
response: Boolean (Single)

# Select Specialty Service for E-Consult	
# ♦ prompt: Medicine	
response: Code (Single)	
response range: EnumerationConstraint (List)	
item: Adolescent Medicine(3841000175105 Adolescent medicine service (qualifier value))	
item: Allergy and Immunology(711332004 Allergy service (qualifier value) 708190004 Immunology service (qualifier value))	
item: Anesthesiology(310001007 Anesthetic service (qualifier value))	
item: Cardiology(3471000175103 Cardiology service (qualifier value))	
item: Critical Care(310032008 Intensive care service (qualifier value))	
item: Dermatology(700241009 Dermatology service (qualifier value))	
item: Emergency Medicine(409971007 Emergency medical services (qualifier value))	
item: Endocrinology(700434000 Endocrinology service (qualifier value))	
item: Gastroenterology(700433006 Gastroenterology service (qualifier value))	
item: Genetics and Genomics(3511000175109 Genetics service (qualifier value))	
item: Geriatrics(3531000175102 Geriatric service (qualifier value))	
item: Hematology(708196005 Hematology service (qualifier value))	
item: Infectious Disease(3541000175108 Infectious disease service (qualifier value))	
item: Internal Medicine(040b18ee-1d3d-4d83-a1ff-709add73fa68 Internal medicine service (qualifier value))	
item: Mental Health(708168004 Mental health service (qualifier value))	
item: Nephrology(449601000124105 Nephrology service (qualifier value))	
item: Neurology(3591000175103 Neurology service (qualifier value))	
item: Occupational Medicine(310064001 Occupational health service (qualifier value))	
item: Oncology(310022001 Clinical oncology service (qualifier value))	
item: Optometry(310105000 Optometry service (qualifier value))	
item: Pain Medicine(310071006 Pain management service (qualifier value))	
item: Pathology(310074003 Pathology service (qualifier value))	
item: Pediatrics(310066004 Pediatric service (qualifier value))	

item: Physical Medicine and Rehabilitation(722424008 |Physical medicine and rehabilitation service (qualifier value))
 item: Primary Care(81cc06be-341d-4606-9841-a81ebc76a289 |Primary care service (qualifier value))
 item: Psychiatry(310116007 |Psychiatry service (qualifier value))
 item: Pulmonology(722174002 |Pulmonary medicine service (qualifier value))
 item: Rheumatology(3621000175101 |Rheumatology service (qualifier value))
 item: Sleep Medicine(f0f88e7a-c854-4c0c-8533-677bef970dd5 |Sleep medicine service (qualifier value))
 item: Sports Medicine - Nonsurgical(1b5c822e-cd98-42aa-b968-9f06d30fa7db |Nonsurgical sports medicine service (qualifier value))
 item: Travel Medicine(2a1fd1f7-da54-437e-b2c0-7942376375b7 |Travel medicine service (qualifier value))
 item: Undersea and Hyperbaric Medicine(84e193e6-2751-425f-99ae-12a97b184a88 |Undersea and hyperbaric medicine service (qualifier value))
 item: Surgery(310138009 |Surgical service (qualifier value))
 item: Obstetrics and Gynecology(310060005 |Obstetrics and gynecology service (qualifier value))
 item: Orthopedics(310161006 |Orthopedic service (qualifier value))
 item: Otolaryngology(3831000175104 |Otolaryngology service (qualifier value))
 item: Plastic and Reconstructive Surgery(310164003 |Plastic surgery service (qualifier value)| 3851000175107 |Reconstructive surgery service (qualifier value))
 item: Sports Medicine - Surgical(9980204d-cd97-4a01-8417-9681201abb5 |Surgical sports medicine service (qualifier value))
 item: Trauma and Emergency Surgery(310166001 |Trauma surgery service (qualifier value))
 item: Urology(310167005 |Urology service (qualifier value))
 item: Vascular Surgery(310168000 |Vascular surgery service (qualifier value))
 item: Radiology(310125001 |Radiology service (qualifier value))
 item: Long Term Care (may include nursing homes, skilled nursing facilities, and other assisted living facilities)(3491000175102 |Long-term care service (qualifier value))
 item: Dental Consult(722176000 |Dentistry service (qualifier value))
 ➡ item: Other(TSR-NoCode)

responseBinding: Property ("selectedSpecialty")

Condition:elm:Equal (elm:Property("selectedSpecialty" from: elm:ParameterRef(Responses)) elm:Code())

Surgery

#	<p># prompt: Select surgery type(s)</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Burn Surgery(4f5cc34f-7149-4b61-9b39-6e52c05e0581 Burn surgery service (qualifier value))</p> <p>item: Cardiothoracic Surgery(310140004 Cardiothoracic surgery service (qualifier value))</p> <p>item: General Surgery(310156009 General surgical service (qualifier value))</p> <p>item: Neurosurgery(310159002 Neurosurgical service (qualifier value))</p> <p>Condition:elm:Equal (elm:Property("selectedSpecialty" from: elm:ParameterRef(Responses)) elm:Code())</p> <p>Obstetrics and Gynecology</p>
#	<p># prompt: Obstetrics and Gynecology</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Gynecologic Oncology(5660db37-e153-4a1e-8d41-cb2b76c6dffc Gynecologic oncology service (qualifier value))</p> <p>item: Gynecology(310061009 Gynecology service (qualifier value))</p> <p>item: Obstetrics(310063007 Obstetrics service (qualifier value))</p> <p>Condition:elm:Equal (elm:Property("selectedSpecialty" from: elm:ParameterRef(Responses)) elm:Code())</p> <p>Radiology</p>
#	<p># prompt: Radiology</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Diagnostic Radiology(a4a6e0fb-ba7c-42de-b050-9cb6395b632e Diagnostic radiology service (qualifier value))</p> <p>item: Interventional Radiology(708174004 Interventional radiology service (qualifier value))</p> <p>item: Nuclear Medicine(d0d483dd-7ebd-4f01-9869-d0d7a7f60af3 Nuclear medicine service (qualifier value))</p> <p>item: Radiation Therapy(310023006 Radiotherapy service (qualifier value))</p> <p>Condition:elm:Equal (elm:Property("selectedSpecialty" from: elm:ParameterRef(Responses)) elm:Code())</p> <p>Ancillary Clinical Services</p>
	<p># prompt: Ancillary Clinical Services</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Blood Bank(708194008 Blood bank service (qualifier value))</p> <p>item: Nutrition(310090003 Dietetics service (qualifier value))</p> <p>item: Pharmacy(310080006 Pharmacy service (qualifier value))</p> <p>item: Social Work(310134006 Social services (qualifier value))</p>

	<p>item: Toxicology(708191000 Toxicology service (qualifier value))</p> <p>item: Wound Care(3661000175108 Wound care service (qualifier value))</p> <p>☞ item: Other Ancillary Clinical Services(TSR-NoCode)</p>
# Reason for E-Consult?	<p># prompt: Reason for E-Consult</p> <p>response: String (Single)</p>
# Indicate patient's location	<p># prompt: Indicate patient's location</p> <p>response: Code (Multiple)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Inpatient(416800000 Inpatient (person))</p> <p>item: Outpatient(373864002 Outpatient (person))</p> <p>item: Other Specific Location(TSR-NoCode)</p> <p>responseBinding: Property ("patientsLocation")</p> <p># Condition:elm:Equal (elm:Property("patientsLocation" from: elm:ParameterRef(Responses)) elm:Code())</p> <p>Other Specific Location</p>
	<p># prompt: Details</p> <p>response: String (Single)</p>
# Specify E-Consult Priority as follows	<p># prompt: Priority</p> <p>response: Code (Single)</p> <p>response range: EnumerationConstraint (List)</p> <p>item: Stat E-Consult: response within 24 hours([a181b06c-80fb-4c93-9f64-ea3948a1d9dd Electronic consultation (procedure)] ->(363702006 Has focus (attribute))->[53923005 Medical consultation on inpatient (procedure)] [a181b06c-80fb-4c93-9f64-ea3948a1d9dd Electronic consultation (procedure)] ->(363702006 Has focus (attribute))->[17436001 Medical consultation with outpatient (procedure)])</p> <p>item: Routine E-Consult: response as soon as possible, but within 7 days([a181b06c-80fb-4c93-9f64-ea3948a1d9dd Electronic consultation (procedure)] ->(363702006 Has focus (attribute))->[53923005 Medical consultation on inpatient (procedure)] [a181b06c-80fb-4c93-9f64-ea3948a1d9dd Electronic consultation (procedure)] ->(363702006 Has focus (attribute))->[17436001 Medical consultation with outpatient (procedure)])</p> <p>item: Routine E-Consult with Scheduling Instructions: response time-frame specified by ordering provider(TSR-NoCode)</p>
# STAT (Within 24 hours)	<p># prompt: Provider Accepting Request to Provide E-Consult (required)</p> <p>response: String (Single)</p> <p># prompt: Provisional Diagnosis</p> <p>response: Code (Multiple)</p>

	<p># prompt: Additional Patient Information (Relevant History, Examination, Labs, Imaging, etc.)</p> <p>response: String (Multiple)</p> <p># prompt: Referring Physician Contact Information</p> <p>response: String (Single)</p>
# ROUTINE (As soon as possible but within 7 days)	<p># prompt: Provisional Diagnosis</p> <p>response: Code (Multiple)</p> <p># prompt: Additional Patient Information (Relevant History, Examination, Labs, Imaging, etc.)</p> <p>response: String (Multiple)</p> <p># prompt: Referring Physician</p> <p>response: String (Single)</p> <p># prompt: Referring Physician Contact Information</p> <p>response: String (Single)</p> <p># prompt: Provider Accepting Request to Provide E-Consult (Optional)</p> <p>response: String (Single)</p>
# ROUTINE WITH SCHEDULING INSTRUCTIONS (Ordering provider specifies timeframe)	<p># prompt: Scheduling Instructions</p> <p>response: String (Single)</p> <p># prompt: Timeframe for scheduling consult (Example: within 10 days)</p> <p>response: Timestamp (Single)</p> <p># prompt: Provisional Diagnosis</p> <p>response: Code (Multiple)</p> <p># prompt: Additional Patient Information (Relevant History, Examination, Labs, Imaging, etc.)</p> <p>response: String (Multiple)</p> <p># prompt: Referring Physician</p> <p>response: String (Single)</p> <p># prompt: Referring Physician Contact Information</p> <p>response: String (Single)</p> <p># prompt: Provider Accepting Request to Provide E-Consult (Optional)</p> <p>response: String (Single)</p>

Chapter 4. Tabular List

Terminology Service Request (TSR) Mappings

Table 4.1. Terminology Versions

Name	Identifier	Version
SNOMED CT	2.16.840.1.113883.6.96	United States Edition 20180301

Table 4.2. Terminology References

System	Code	Display Text ^a	References ^b
SNOMED CT	040b18ee-1d3d-4d83-a1ff-709add73fa68 Internal medicine service (qualifier value)	Internal Medicine	1
SNOMED CT	1b5c822e-cd98-42aa-b968-9f06d30fa7db Nonsurgical sports medicine service (qualifier value)	Sports Medicine - Nonsurgical	1
SNOMED CT	2a1fd1f7-da54-437e-b2c0-7942376375b7 Travel medicine service (qualifier value)	Travel Medicine	1
SNOMED CT	310001007 Anesthetic service (qualifier value)	Anesthesiology	1
SNOMED CT	310022001 Clinical oncology service (qualifier value)	Oncology	1
SNOMED CT	310023006 Radiotherapy service (qualifier value)	Radiation Therapy	1
SNOMED CT	310032008 Intensive care service (qualifier value)	Critical Care	1
SNOMED CT	310060005 Obstetrics and gynecology service (qualifier value)	Precoordinated Expression	2
SNOMED CT	310061009 Gynecology service (qualifier value)	Gynecology	1
SNOMED CT	310063007 Obstetrics service (qualifier value)	Obstetrics	1
SNOMED CT	310064001 Occupational health service (qualifier value)	Occupational Medicine	1
SNOMED CT	310066004 Pediatric service (qualifier value)	Pediatrics	1

System	Code	Display Text ^a	References ^b
SNOMED CT	310071006 Pain management service (qualifier value)	Pain Medicine	1
SNOMED CT	310074003 Pathology service (qualifier value)	Pathology	1
SNOMED CT	310080006 Pharmacy service (qualifier value)	Pharmacy	1
SNOMED CT	310090003 Dietetics service (qualifier value)	Nutrition	1
SNOMED CT	310105000 Optometry service (qualifier value)	Optometry	1
SNOMED CT	310116007 Psychiatry service (qualifier value)	Psychiatry	1
SNOMED CT	310125001 Radiology service (qualifier value)	Precoordinated Expression	2
SNOMED CT	310134006 Social services (qualifier value)	Social Work	1
SNOMED CT	310138009 Surgical service (qualifier value)	Precoordinated Expression	2
SNOMED CT	310140004 Cardiothoracic surgery service (qualifier value)	Cardiothoracic Surgery	1
SNOMED CT	310156009 General surgical service (qualifier value)	General Surgery	1
SNOMED CT	310159002 Neurosurgical service (qualifier value)	Neurosurgery	1
SNOMED CT	310161006 Orthopedic service (qualifier value)	Orthopedics	1
SNOMED CT	310164003 Plastic surgery service (qualifier value)	Plastic and Reconstructive Surgery	1
SNOMED CT	310166001 Trauma surgery service (qualifier value)	Trauma and Emergency Surgery	1
SNOMED CT	310167005 Urology service (qualifier value)	Urology	1
SNOMED CT	310168000 Vascular surgery service (qualifier value)	Vascular Surgery	1
SNOMED CT	3471000175103 Cardiology service (qualifier value)	Cardiology	1
SNOMED CT	3491000175102 Long-term care service (qualifier value)	Long Term Care (may include nursing homes, skilled nursing)	1

System	Code	Display Text ^a	References ^b
		facilities, and other assisted living facilities)	
SNOMED CT	3511000175109 Genetics service (qualifier value)	Genetics and Genomics	1
SNOMED CT	3531000175102 Geriatric service (qualifier value)	Geriatrics	1
SNOMED CT	3541000175108 Infectious disease service (qualifier value)	Infectious Disease	1
SNOMED CT	3591000175103 Neurology service (qualifier value)	Neurology	1
SNOMED CT	3621000175101 Rheumatology service (qualifier value)	Rheumatology	1
SNOMED CT	3661000175108 Wound care service (qualifier value)	Wound Care	1
SNOMED CT	373864002 Outpatient (person)	Outpatient	1
SNOMED CT	3831000175104 Otolaryngology service (qualifier value)	Otolaryngology	1
SNOMED CT	3841000175105 Adolescent medicine service (qualifier value)	Adolescent Medicine	1
SNOMED CT	3851000175107 Reconstructive surgery service (qualifier value)	Plastic and Reconstructive Surgery	1
SNOMED CT	409971007 Emergency medical services (qualifier value)	Emergency Medicine	1
SNOMED CT	416800000 Inpatient (person)	Inpatient	1
SNOMED CT	449601000124105 Nephrology service (qualifier value)	Nephrology	1
SNOMED CT	4f5cc34f-7149-4b61-9b39-652cc0581 Burn surgery service (qualifier value)	Burn Surgery	1
SNOMED CT	5660db37-e153-4a1e-8d41-cb2b76c6dffc Gynecologic oncology service (qualifier value)	Gynecologic Oncology	1

System	Code	Display Text ^a	References ^b
SNOMED CT	700241009 Dermatology service (qualifier value)	Dermatology	1
SNOMED CT	700433006 Gastroenterology service (qualifier value)	Gastroenterology	1
SNOMED CT	700434000 Endocrinology service (qualifier value)	Endocrinology	1
SNOMED CT	708168004 Mental health service (qualifier value)	Mental Health	1
SNOMED CT	708174004 Interventional radiology service (qualifier value)	Interventional Radiology	1
SNOMED CT	708190004 Immunology service (qualifier value)	Allergy and Immunology	1
SNOMED CT	708191000 Toxicology service (qualifier value)	Toxicology	1
SNOMED CT	708194008 Blood bank service (qualifier value)	Blood Bank	1
SNOMED CT	708196005 Hematology service (qualifier value)	Hematology	1
SNOMED CT	711332004 Allergy service (qualifier value)	Allergy and Immunology	1
SNOMED CT	722174002 Pulmonary medicine service (qualifier value)	Pulmonology	1
SNOMED CT	722176000 Dentistry service (qualifier value)	Dental Consult	1
SNOMED CT	722424008 Physical medicine and rehabilitation service (qualifier value)	Physical Medicine and Rehabilitation	1
SNOMED CT	81cc06be-341d-4606-9841-a81ebc76a289 Primary care service (qualifier value)	Primary Care	1
SNOMED CT	84e193e6-2751-425f-99ae-1207b184a88 Undersea and hyperbaric medicine service (qualifier value)	Undersea and Hyperbaric Medicine	1
SNOMED CT	9980204d-cd97-4a01-8417-9681201abb5 Surgical sports medicine service (qualifier value)	Sports Medicine - Surgical	1
SNOMED CT	TSR-NoCode ^c	Precoordinated Expression	6
SNOMED CT	[a181b06c-80fb-4c93-9f64-ea3948a1d9dd Electronic consultation (procedure)]	Stat E-Consult: response within 24 hours	2

System	Code	Display Text ^a	References ^b
	->(363702006 Has focus (attribute))->[17436001 Medical consultation with outpatient (procedure)]		
SNOMED CT	[a181b06c-80fb-4c93-9f64-ea3948a1d9dd Electronic consultation (procedure)] ->(363702006 Has focus (attribute))->[53923005 Medical consultation on inpatient (procedure)]	Stat E-Consult: response within 24 hours	2
SNOMED CT	a4a6e0fb-ba7c-42de-b050-9cb6395b632e Diagnostic radiology service (qualifier value)	Diagnostic Radiology	1
SNOMED CT	d0d483dd-7ebd-4f01-9869-d0d7a7f60af3 Nuclear medicine service (qualifier value)	Nuclear Medicine	1
SNOMED CT	f0f88e7a-c854-4c0c-8533-677bef970dd5 Sleep medicine service (qualifier value)	Sleep Medicine	1

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

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

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

Chapter 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.
◇	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 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] *Primary Care: E-Consult Clinical Content White Paper*

[CSD] *General E-Consult Documentation Template Conceptual Structure Document*

[KVRpt] *General E-Consult Documentation Template KNART Validation Report*

Supporting Evidence

[Akbari 2008] Akbari A., Mayhew A., Al-Alawi MA, et al. *Interventions to improve outpatient referrals from primary care to secondary care. Cochrane Database Syst Rev. 2008;4:CD005471* (link [<https://doi.org/10.1002/14651858.CD005471>])

[VA 2016] *Consult Processes and Procedures-VHA DIRECTIVE 1232. Amended 2016 September 16*