Cardiology: Electrophysiology (EP): Other 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 06/08/2018

Version: 1.0

Cardiology: Electrophysiology (EP): Other Order Set: Order Set: Conceptual Structure

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

Publication date 06/08/2018 Copyright © 2018 B3 Group, Inc. Copyright © 2018 Cognitive Medical Systems, Inc.

B3 Group, Inc.

NOTICE OF GOVERNMENT COPYRIGHT LICENSE AND UNLIMITED RIGHTS LICENSE

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Portions of this content are derivative works from content produced by Cognitive Medical Systems, Inc. licensed under the Apache License, Version 2.0

Additional portions of this content are derivative works from content contributed by Motive Medical Intelligence Inc., under Creative Commons Attribution-ShareAlike 4.0.

Contributions from 2013-2018 were performed either by US Government employees, or under US Veterans Health Administration contracts.

US Veterans Health Administration contributions by government employees are work of the U.S. Government and are not subject to copyright protection in the United States. Portions contributed by government employees are USGovWork (17USC §105). Not subject to copyright.

 $See: \ https://www.usa.gov/government-works$

Contribution by contractors to the US Veterans Health Administration during this period are contractually contributed under the Apache License, Version 2.0 and US Government sponsorship is acknowledged under Contract VA118-16-D-1008, Task Order VA11817F10080007.

Cognitive Medical Systems, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This and related content produced by Cognitive Medical Systems, Inc. licensed under the Apache License, Version 2.0 is available at: https://bitbucket.org/cogmedsys/hl7-kas-examples

Additional portions of this content are derivative works from content contributed by Motive Medical Intelligence Inc., under Creative Commons Attribution-ShareAlike 4.0. https://bitbucket.org/cogmedsys/kas-source-material

Contributions from 2013-2018 were performed either by US Government employees, or under US Veterans Health Administration contracts.

US Veterans Health Administration contributions by government employees are work of the U.S. Government and are not subject to copyright protection in the United States. Portions contributed by government employees are USGovWork (17USC §105). Not subject to copyright. See: https://www.usa.gov/government-works

Contribution by contractors to the US Veterans Health Administration during this period are contractually contributed under the Apache License, Version 2.0 and US Government sponsorship is acknowledged under Contract VA118-16-D-1008-0007.

Table of Contents

Preface	v
Artifact Applicability	vi
Models	
1. External Data Definitions	1
2. Expression Definitions	2
3. Consults and Referrals	
4. Imaging and ECG	4
5. Laboratory Tests	
6. Medications	7
7. Tabular List	8
8. Behavior Symbols	10
A. References	12

List of Tables

1. Revision History	. v
2. Clinical White Paper Contributors	. v
3. Artifact Identifier	. v
4. Applicability Foci, Description and Codes	vi
5. Model References	vii
2.1. 12LeadElectrocardiogram	. 2
2.2. 12LeadElectrocardiogramPerformance	. 2
7.1. Terminology Versions	
7.2. Terminology References	. 8
8.1. Group Organizational Behavior	10
8.2. Group Selection Behavior	10
8.3. Required Behavior	10
8.4. Precheck Behavior	
8.5. Cardinality Behavior	11
8.6. Item Flags	
8.7 Read Only Behavior	11

Preface

Table 1. Revision History

Date	Life Cycle Event	
June 8, 2018	Published	
May 7, 2018	Published	
May 7, 2018	Reviewed	
May 6, 2018	Published	
May 4, 2018	Reviewed	
April 25, 2018	Published	
April 25, 2018	Reviewed	
March 28, 2018	Published	
March 28, 2018	Reviewed	
February 25, 2018	Reviewed	
February 21, 2018	Created	

Table 2. Clinical White Paper Contributors

Name	Role	Affiliation
Bray Bruce, MD	Author	Professor, Cardiovascular Medicine, University of Utah School of Medicine; Staff Cardiologist, Salt Lake City VA Medical Center
Wall Scott, MD	Author	Assistant Professor, Cardiovascular Medicine, University of Utah; School of Medicine Staff Cardiologist, Salt Lake City VAMC
Abidov Aiden, MD	Author	Professor of Medicine, Wayne State University; Section Chief, Cardiology, John Dingell VAMC

Table 3. Artifact Identifier

Domain Artifact ID		Name
urn:va.gov:kbs:knart:artifact:r1	9ec4fd1c-aa93-541f-a2d3-932f3a518171	B12

Artifact Applicability

Table 4. Applicability Foci, Description and Codes

Focus	Description	Code Sys- tem	Code	Value Set	Value Set Version
PatientAgeGroup	Adult outpatient needing Cardiology consult for arrhyth- mia evaluation	SNOMED CT	133936004 Adult (person)	N/A	N/A
TargetUser	Provider in a Primary Care Clinic	SNOMED CT	453231000124104 Primary care provider (occupation)	N/A	N/A
WorkflowSetting	Cardiology Consultation			N/A	N/A
WorkflowTask Ensure a minimum workup is initiated prior to a Cardiology Consultation for adult patients who present to a Primary Care Clinic for evaluation of arrhythmia				N/A	N/A
ClinicalVenue	Outpatient			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

Table 2.1. 12LeadElectrocardiogram

Expression: type=elm:Retrieve , dataType=anf:ClinicalStatement, codeProperty=topic, dateProper-

ty=dateTime

Annotation:

Codes: elm:element[elm:Code]: [447113005 | 12 lead electrocardiogram at rest (procedure)|]

dateRange[elm:Interval] low: elm:Add(elm:Today() elm:Quantity(-2 Month))

high: elm:Today()

Table 2.2. 12LeadElectrocardiogramPerformance

Expression: type=elm:Query

Annotation: Resting 12-lead electrocardiogram to evaluate for arrhythmia Codes: elm:operand[elm:Code]: [398166005 |Performed (qualifier value)]]

Chapter 3. Consults and Referrals

Cardiology consult order

Consider other consult modalities which may be available (e.g., e-consult or other rapidly iterative consult method. A simple consult is included here as the overarching clinical intent.

Referral to cardiology to evaluate for arrhythmia actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 | Requested (qualifier value) topic: Precoordinated Expression 183519002 |Referral to cardiology service (procedure) purpose[0]: Postcoordinated Expression [386053000 | Evaluation procedure (procedure)] ->(363702006 | Has focus (attribute))->[698247007 | Cardiac arrhythmia (disorder)] # Referral to cardiology to manage antiarrhythmic therapy actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 |Requested (qualifier value) topic: Precoordinated Expression 183519002 |Referral to cardiology service (procedure) purpose[0]: Postcoordinated Expression [386053000 | Evaluation procedure (procedure)] ->(363702006 | Has focus (attribute))->[56426e56-017c-4e95-b86c-07279c32b6bb | Management of antiarrhythmic medication regimen (procedure)] # Referral to cardiology for other (specify) actionSentence[type=elm:Instance, classType=anf:ClinicalStatement] statementType: Precoordinated Expression 385644000 | Requested (qualifier value) topic: Precoordinated Expression 183519002 | Referral to cardiology service (procedure) # prompt: Reason for referral response: String (Single) #|Specific goal of the cardiology consultation (e.g., cardiology to manage patient, cardiology to risk stratify and recommend management, etc.) # prompt: Goal of cardiology consultation response: String (Single)

Chapter 4. Imaging and ECG

Consider ordering prior to the cardiology consultation. Resting 12-lead electrocardiogram is required if it has not been obtained within the past 2 months.

```
Condition:elm:Not (elm:Exists( 12LeadElectrocardiogramPerformance ))
# Resting 12-lead electrocardiogram to evaluate for other arrythmia now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
      statementType: Precoordinated Expression 385644000 [Requested (qualifier value)]
      topic: Precoordinated Expression 447113005 | 12 lead electrocardiogram at rest (procedure)
      purpose[0]: Postcoordinated Expression [386053000 | Evaluation procedure (procedure)] -
      >(363702006 | Has focus (attribute))->[ 698247007 | Cardiac arrhythmia (disorder)]
      priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
# Echocardiogram to evaluate for left ventricular function now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
      statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
      topic: Precoordinated Expression 40701008 |Echocardiography (procedure)|
      purpose[0]: Postcoordinated Expression [386053000 | Evaluation procedure (procedure)] -
      >(363702006 | Has focus (attribute))->[366188009 | Finding of left ventricular function (finding)]
      priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
   # | Cardiac event monitor to evaluate for arrhythmia now
                   # prompt: Other duration of evaluation
                   response: Integer (Single)
             response range: EnumerationConstraint (List)
                        item: 24 Hours(TSR-NoCode)
                        item: 48 Hours(TSR-NoCode)
                     ritem: Other duration of evaluation
      responseBinding: Property ("cardiacEventMonitorDuration")
      # Cardiac event monitor to evaluate for arrhythmia now
      actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
                             statementType: Precoordinated Expression 385644000 | Requested (qual-
                             ifier value)
                             topic: Precoordinated Expression 395148004 | Cardiac event recording
                             (regime/therapy)
                             purpose[0]: Postcoordinated Expression [386053000 | Evaluation proce-
                             dure (procedure)] ->(363702006 | Has focus (attribute))->[698247007 |
                             Cardiac arrhythmia (disorder)]
                             priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
                             repetition[0].periodStart.includeLowerBound: true
                             repetition[0].periodStart: cardiacEventMonitorDuration
                             repetition[0].periodStart.includeUpperBound: false
                             repetition[0].periodStart.measureSemantic: Precoordinated Expression
                             258703001 |day (qualifier value)|
```

X-ray chest to evaluate for heart failure now

prompt: Other views

response: Integer (Single)

response range: EnumerationConstraint (List)

item: PA and lateral views(TSR-NoCode)

ritem: Other views

X-ray chest to evaluate for heart failure now

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

statementType: Precoordinated Expression 385644000 |Requested (qual-

ifier value)

topic: Precoordinated Expression 399208008 |Plain chest X-ray (proce-

dure)

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

Heart failure (disorder)]

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

Chapter 5. Laboratory Tests

Consider the following tests to be completed prior to the cardiology consultation.

```
# Basic metabolic panel now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
           statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
           topic: Precoordinated Expression bd01faa8-443c-4ad6-9cb6-ea50b4d7a093 |Basic metabol-
           ic profile (procedure)
           priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
# Complete blood count now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
           statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
           topic: Precoordinated Expression 26604007 |Complete blood count (procedure)|
           priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
# Lipid panel now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
           statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
           topic: Precoordinated Expression 16254007 |Lipid panel (procedure)|
           priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
# Thyroid function testing now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
           statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
           topic: Precoordinated Expression 35650009 |Thyroid panel (procedure)|
           priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
# Troponin now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
           statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
           topic: Precoordinated Expression 105000003 |Troponin measurement (procedure)|
           priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
# Brain natriuretic peptide now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
           statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
           topic: Precoordinated Expression 390917008 | Brain natriuretic peptide measurement (pro-
           cedure)
           priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
# D-dimer now
actionSentence[type=elm:Instance, classType=anf:ClinicalStatement]
           statementType: Precoordinated Expression 385644000 |Requested (qualifier value)|
           topic: Precoordinated Expression 70648006 |D-dimer assay (procedure)|
           priority: Precoordinated Expression 49499008 |Stat (qualifier value)|
```

Chapter 6. Medications

Consider discontinuation of nonessential medications that may contribute to the patient's symptoms.

*

prompt: Medication response: Code (Single)

response range: EnumerationConstraint (List)

☞ item: Other Medication

responseBinding: Property ("medicationToDiscontinue")

Remove: Discontinue medication (specify)

actionSentence[type=elm:Instance, classType=anf:TSR-NoModel]

topic: medicationToDiscontinue

Chapter 7. Tabular List

Terminology Service Request (TSR) Mappings

Table 7.1. Terminology Versions

Name	Identifer	Version
SNOMED CT	2.16.840.1.113883.6.96	United States Edition 20180301
RXNorm	2.16.840.1.113883.6.88	5-Mar-18

Table 7.2. Terminology References

System	Code	Display Text ^a	References ^b
SNOMED CT	105000003 Troponin measurement (procedure)	Precoordinated Expression	1
SNOMED CT	133936004 Adult (person)	Adult outpatient needing Cardiology consult for arrhythmia evaluation	1
SNOMED CT	16254007 Lipid panel (procedure)	Precoordinated Expression	1
SNOMED CT	183519002 Referral to cardiology service (procedure)	Precoordinated Expression	3
SNOMED CT	258703001 day (qualifier value)	Precoordinated Expression	1
SNOMED CT	26604007 Complete blood count (procedure)	Precoordinated Expression	1
SNOMED CT	35650009 Thyroid panel (procedure)	Precoordinated Expression	1
SNOMED CT	385644000 Requested (qualifier value)	Precoordinated Expression	14
SNOMED CT	390917008 Brain natriuretic peptide measurement (procedure)	Precoordinated Expression	1
SNOMED CT	395148004 Cardiac event recording (regime/therapy)	Precoordinated Expression	1
SNOMED CT	398166005 Performed (qualifier value)	Precoordinated Expression	1
SNOMED CT	399208008 Plain chest X-ray (procedure)	Precoordinated Expression	1
SNOMED CT	40701008 Echocardiography (procedure)	Precoordinated Expression	1
SNOMED CT	447113005 12 lead electrocardiogram at rest (procedure)	Precoordinated Expression	2

System	Code	Display Text ^a	References ^b
SNOMED CT	453231000124104 Primary care provider (occupation)	Provider in a Primary Care Clinic	1
SNOMED CT	49499008 Stat (qualifier value)	Precoordinated Expression	11
SNOMED CT	70648006 D-dimer assay (procedure)	Precoordinated Expression	1
SNOMED CT	TSR-NoCode ^c	24 Hours	3
SNOMED CT	[386053000 Evaluation procedure (procedure)] - >(363702006 Has focus (attribute))->[698247007 Cardiac arrhythmia (disor- der)]	Postcoordinated Expression	1
SNOMED CT [386053000 Evaluation procedure (procedure)] - > (363702006 Has focus (attribute)) -> [366188009 Finding of left ventricular function (finding)]		Postcoordinated Expression	1
SNOMED CT [386053000 Evaluation procedure (procedure)] ->(363702006 Has focus (attribute))->[56426e56-017c-b86c-07279c32b6bb Management of antiarrhythmic medication regimen (procedure)]		Postcoordinated Expression 4e95-	1
SNOMED CT [386053000 Evaluation procedure (procedure)] - > (363702006 Has focus (attribute)) -> [698247007 Cardiac arrhythmia (disorder)]		Postcoordinated Expression	2
SNOMED CT [386053000 Evaluation procedure (procedure)] - >(363702006 Has focus (attribute)) -> [84114007 Heart failure (disorder)]		Postcoordinated Expression	1
SNOMED CT	bd01faa8-443c-4ad6-9cb6- ea50b4d7a093 Basic metabolic profile (proce- dure)	Precoordinated Expression	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 8. Behavior Symbols

Table 8.1. Group Organizational Behavior

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

Table 8.2. Group Selection Behavior

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

Table 8.3. Required Behavior

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

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

Table 8.4. Precheck Behavior

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

Table 8.5. Cardinality Behavior

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

Table 8.6. Item Flags

Sym- bol	Name	Definition
4	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 8.7. Read Only Behavior

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

Appendix A. References

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

List of References

Related Resources

[CCWP] Cardiology: Electrophysiology (EP) Arrhythmias Clinical Content White Paper

[CSD] Cardiology: Electrophysiology (EP): Other Order Set Conceptual Structure Document

[KVRpt] Cardiology: Electrophysiology (EP): Other Order Set KNART Validation Report

Supporting Evidence

- [Heidenreich 2016] Heidenreich, P., Solis, P., Estes, M., Fonarow, G., Jurgens, C., Marine, J., McManus, D., McNamara, R. 2016 ACC/AHA Clinical Performance and Quality Measures for Adults With Atrial Fibrillation or Atrial Flutter. A Report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (link [https://doi.org/10.1161/HCQ.000000000000018])
- [Holbrook 2012] Holbrook, A., Schulman, S., Witt, D., Vandvik, P., Fish, J., Kovacs, M., Svensson, P., Veenstra, D., Crowther, M., Guyatt, G., et.al. Evidence-Based Management of Anticoagulant Therapy. (2012) Official Publication of the American College of Ches Physicians. 2012 February 12;141(2):e152S-e184S (link [http://dx.doi.org/10.1378/chest.11-2295])
- [January 2014] January, C. T., Wann, L. S., Alpert, J. S., Calkins, H., Cigarroa, J. E., Cleveland, J. C., ... Yancy, C. W. (2014). 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: Executive summary: A report of the American College of cardiology/American heart association task force on practice guidelines and the heart rhythm society. Circulation, 130(23), 2071-2104 (link [https://doi.org/10.1161/CIR.0000000000000000000])
- [Kearon 2016] Kearon, C., Aki, E., Ornelas, J., Blaivas, A., Jimenez, D., Bounameaux, H., et al. Antithrombotic therapy for VTE disease: CHEST guideline and expert panel report. CHEST Journal, Official Publication of the College of Chest Physicians 2016 February 149(2) 315–352 (link [http://dx.doi.org/10.1016/j.chest.2015.11.026])
- [Page 2016] Page, R., Joglar, J., Caldwell, M., Calkins, H., Conti, J., Deal, B., Estes, M., Field, M., Goldberger, Z., Hammill, S., Indik, J., Lindsay, B., et al. 2015 ACC/AHA/HRS Guideline for the Management of Adult Patients With Supraventricular Tachycardia. Journal of the American College of Cardiology Volume 67, Issue 13, April 2016. (link [http://www.onlinejacc.org/content/67/13/e27? ga=1.87330320.984974867.1480494374])
- [Shen 2017] Shen, W.K., Sheldon, R., Benditt, D., Cohen, M., Forman, D., Goldberger, Z., Grubb, B., Field, M., Goldberger, Z., Hamdan, M., Krahn, A., Link, M., Olshansky, B., et al. 2017 ACC/AHA/HRS Guideline for the Evaluation and Management of Patients With Syncope: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines, and the Heart Rhythm Society. August 2017 Volume 14, Issue 8, Pages e155–e21 (link [http://dx.doi.org/10.1016/j.hrthm.2017.03.004])
- [NLM 2017a] LABEL: AMIODARONE HCL- amiodarone hydrochloride tablet [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=08641e51-ab-

- *ca-4c1c-ba19-d24435332018*. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=08641e51-abca-4c1c-ba19-d24435332018])
- [NLM 2017b] LABEL: ASPIRIN 81 MG- aspirin tablet, coated [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b4064039-2345-4227-b83d-54dc13a838d3. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b4064039-2345-4227-b83d-54dc13a838d3])
- [NLM 2016a] LABEL: CARDIZEMdiltiazem hydrochloride tablet, coated [Internet].: tional Medicine; 2016. Available from: https://dailymed.nlm.nih.gov/daily-Library med/drugInfo.cfm?setid=f3e7ecef-f360-4987-a4f5-933214130ab2. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=f3e7ecef-f360-4987-a4f5-933214130ab2])
- [NLM 2017c] LABEL: CLOPIDOGREL- clopidogrel bisulfate tablet, film coated, [Internet].: National Library of Medicine; 2016. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=edae8df1-caf9-ff72-1304-5ae8b355f8e7. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=edae8df1-caf9-ff72-1304-5ae8b355f8e7])
- [NLM 2017d] LABEL: COUMADIN- warfarin sodium tablet, [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/lookup.cfm?setid=d91934a0-902e-c26c-23ca-d5accc4151b6. (link [https://dailymed.nlm.nih.gov/dailymed/lookup.cfm?setid=d91934a0-902e-c26c-23ca-d5accc4151b6])
- [NLM 2016b] *LABEL: DIGOXIN- digoxin tablet, [Internet].: National Library of Medicine; 2016. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=dfac7f13-28be-423d-9389-9089da29da17.* (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=dfac7f13-28be-423d-9389-9089da29da17])
- [NLM 2016c] LABEL: DILTIAZEM HCL CD- diltiazem hydrochloride capsule, coated, extended release, [Internet].: National Library of Medicine; 2016. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=5e39be50-ea17-4077-a2dc-668267049f6a. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=5e39be50-ea17-4077-a2dc-668267049f6a])
- [NLM 2017e] LABEL: ELIQUIS- apixaban tablet, film coated ELIQUIS 30-DAY STARTER PACK-apixaban, [Internet].: National Library of Medicine; 2017. Available from: https://daily-med.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e9481622-7cc6-418a-acb6-c5450daae9b0. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e9481622-7cc6-418a-acb6-c5450daae9b0])
- [NLM 2012] LABEL: FLECAINIDE ACETATE- flecainide tablet, [Internet].: National Library of Medicine; 2012. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=fa68b35e-9f50-408b-9e70-e84cecf3fd6e. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=fa68b35e-9f50-408b-9e70-e84cecf3fd6e])
- [NLM 2008] LABEL: ISOPTIN SRverapamil hydrochloride tablet, coated, [Internet].: tional Library ofMedicine; 2018. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=6ae13cb4-0316-40d1-9216-c7d5556aaed3. [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=6ae13cb4-0316-40d1-9216-c7d5556aaed3])
- [NLM 2017f] LABEL: Li-LOPRESSORmetoprolol tartrate tablet, [Internet].: National Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=0283bc9d-6998-493a-824a-d4c85f704111. [https://dailymed.nlm.nih.gov/daily-(link med/drugInfo.cfm?setid=0283bc9d-6998-493a-824a-d4c85f704111])
- [NLM 2017g] LABEL: PRADAXA- dabigatran etexilate mesylate capsule, [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ba74e3cd-b06f-4145-b284-5fd6b84ff3c9. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ba74e3cd-b06f-4145-b284-5fd6b84ff3c9])

- [NLM 2017h] LABEL: PROPAFENONE HCL- propagenone hydrochloride tablet, film coated, [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=a313c111-e539-47bc-9d57-c3767f74bcca. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=a313c111-e539-47bc-9d57-c3767f74bcca])
- [NLM 2017i] LABEL: TOPROL XL- metoprolol succinate tablet, extended release, [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4a5762c6-d7a2-4e4c-10b7-8832b36fa5f4. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4a5762c6-d7a2-4e4c-10b7-8832b36fa5f4])
- [NLM 2017j] LABEL: XARELTO- rivaroxaban tablet, film coated XARELTO- rivaroxaban, [Internet].: National Library of Medicine; 2017. Available from: https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=10db92f9-2300-4a80-836b-673e1ae91610. (link [https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=10db92f9-2300-4a80-836b-673e1ae91610])