

Orion Health

Orion Health is an award-winning, global provider of healthcare information technology advancing population health and precision medicine solutions for personalised care across the entire health community.¹ Orion Health's solutions capture the vast amounts of health data available and provide the tools to support healthcare professionals and health insurers who manage their members' wellness programmes to make more effective decisions - through applying analytics and employing care management and patient engagement.²

For more information please visit <https://orionhealth.com> .

Overview

Orion Health currently has four products which leverage SNOMED CT for Clinical Decision Support. These are:

- Global Drug Model (GDM);
- Orion Health Medicines;
- Orion Health Problem List; and
- Clinical Decision Support (CDS) application.

To allow for multiple customers to be supported worldwide, these products adopt a modular approach to terminology deployment. A customer selects the relevant data loader for their jurisdiction and the experience is customized for their region automatically. When deployed in SNOMED CT member countries, this process involves loading the relevant SNOMED CT National Edition and local medication codes. Drug data is represented using a common model based on SNOMED CT. This enables customers already using SNOMED CT coding to migrate to these products very quickly. Other local medication codes can be translated to the SNOMED CT equivalent representation using integrated mappings. Orion's Medicines platform provides support for terminologies from the UK, Australia, New Zealand, USA and France, as well as support for other customers with local data sets.

SNOMED CT offers a range of significant benefits to Orion Health's CDS solutions. SNOMED CT's relationships and drug class information are used to optimize the drug database during the import process. Orion Health has also developed several algorithms which allow for extremely fast retrieval of medication data, traversal of the medication hierarchy and testing for concept subsumption. These SNOMED CT features are used extensively by the Clinical Decision Support APIs and are therefore a core part of Orion Health's CDS applications. These products also provide the ability to add new medications that are not predefined in the terminology, such as extemporaneous medications, clinical trial drugs or medications obtained in a different country. New medications can be fully modeled within the GDM concept hierarchy, and assigned a valid SNOMED CT extension identifier using the customer's assigned namespace.

The Amadeus Clinical Portal as shown in the diagram below provides a single point of access for clinicians to manage patient information. This portal integrates the CDS products mentioned above, including the Medicines and Problem List applications. All Orion Health's CDS applications expose their data using FHIR's RESTful APIs. The use of SNOMED CT in these products also facilitates easier translation to standard messaging formats, such as HL7 CDA or other message structures mandated by local jurisdictions.

CARDINAL, John Q

BORN 12-Nov-1949 (66y) GENDER M

ADDRESS Home

MRN 84568-4564

MPI 84568-4564

KNOWN ALLERGIES

HOME (463) 321-4568

SummaryHistoryTimelineTasksReferralsEngageOther

Patient Summary

EncountersProblem ListMedicationProceduresCare PlanCircle Of CarePayer Sourced Data

Demographics

CARDINAL, John Q Male ,
84568-4564

Date of Birth	12 Nov 1949 (66 years)
Address	840 Chester Ave Pasadena (463) 321-4568
Phone	
Identifiers	84568-4564(MRN) 106532R(OHM)
Primary Care Provider	WOOD, Brandon R Bough Family Clinic 315 Maple Ave Mt Roskill Auckland +64 (9) 638 0111
Emergency Contact	Jargon, Carol (Sister) (408) 455-2112

DIAGNOSIS Filter Applied

Chronic ischaemic heart disease, unspecified (I25.9)
MEDICAL DIAGNOSIS, Date 05-May-2015

Congestive heart failure (I50.0)
MEDICAL DIAGNOSIS, Date 22-Apr-2006

Hypertension
MEDICAL DIAGNOSIS, Date 25-Nov-2004

Ingrown toe nail
MEDICAL DIAGNOSIS, Unknown

Type 2 Diabetes
MEDICAL DIAGNOSIS, Date 01-Apr-2008

ADVERSE REACTION Filter Applied

Penicillin -class of antibiotic- Substance
ADVERSE REACTION, Date 03-Jun-1995

Gluten Dietary
INTOLERANCE, Age 30 years

ALERT Filter Applied

Cardiac pacemaker
DEVICE IN SITU, Date 15-Jul-2016

Residence Remote
HOME ENVIRONMENT, Since Date 2010

CDIFF - Clostridium Difficile CLOSED
INFECTIOUS ORGANISM, Since Date 12-Feb-2015

Curated Medications List

Status	Updated	Medication	Route	Dose	Start	Stop (intended)	Provenance	Added By	Last Fill Date (days supplied)
ACTIVE	22-Jul-2016	Clopidogrel 75mg tablets	Oral	2 Tablet od	24-Jun-2016		Clinician Verified	Jim Brown	
ACTIVE	22-Jul-2016	Ibuprofen 200mg tablets (Anadin Ibuprofen)	Oral	1 Tablet three times daily	24-Jun-2016		Clinician Verified	Taylor Night	

Global Drug Model

Concept Search

Select a favorite search

Search Term

Concept ID

Types

☒ ING
☒ TP
☒ MP
☒ TPUU
☒ MPUU
☒ TPP
☒ MPP
☒ CTPP

Source

All

Status

Active

Search Priority

All

Brand Restricted Only
☐

Search

Reset

Add

Enter a new favorite search

+

ConceptId	Term	Concept Type	Source	Status	Stan
2714011000036109	warfarin	ING	AMT	Active	Stan
21248011000036104	warfarin	MP	AMT	Active	Stan
2715011000036108	warfarin sodium	ING	AMT	Active	Stan
22158011000036101	warfarin sodium 3 mg tablet	MPUU	AMT	Active	Stan
22268011000036109	warfarin sodium 2 mg tablet	MPUU	AMT	Active	Stan
22464011000036101	warfarin sodium 5 mg tablet	MPUU	AMT	Active	Stan
22463011000036103	warfarin sodium 1 mg tablet	MPUU	AMT	Active	Stan
5000011000036102	Marevan 5 mg tablet: uncoated	TPUU	AMT	Active	Stan
5479011000036108	Marevan 1 mg tablet: uncoated	TPUU	AMT	Active	Stan
6002011000036101	Marevan 3 mg tablet: uncoated	TPUU	AMT	Active	Stan
4739011000036107	Coumadin 1 mg tablet: uncoated	TPUU	AMT	Active	Stan
5424011000036108	Coumadin 5 mg tablet: uncoated	TPUU	AMT	Active	Stan
5434011000036105	Coumadin 2 mg tablet: uncoated	TPUU	AMT	Active	Stan
26771011000036104	warfarin sodium 3 mg tablet, 50	MPP	AMT	Active	Stan
26890011000036102	warfarin sodium 2 mg tablet, 50	MPP	AMT	Active	Stan

« Previous

Next »

Results 1-15 of 31
[Download CSV results](#)

Figure 2: Global Drug Model

Orion Health Medicines

Orion Health Medicines supports an authoritative medication list for each patient, and enables its curation, reconciliation and management. The Medicines application uses the FHIR APIs from GDM to allow the discovery and validation of medications. Patients can also manage their own list of medications via the Orion Health Patient Portal or the Orion Health Engage mobile application.

Orion Health Problem List

Orion Health Problem List is a centralized and web-based list of patient problems. It enables healthcare providers to view, create and change clinical information, procedures, psychosocial and cultural issues that may affect the care of the patient, as well as safety and security concerns that may be relevant to medical staff caring for the patient. The Problem List application also integrates with GDM via the FHIR APIs, and enables clinicians to record allergies, adverse reactions and intolerances at the drug class level. The Problem List application is fully integrated with SNOMED CT, with a variety of fields using SNOMED CT subsets.

Clinical Decision Support

The *Clinical Decision Support* (CDS) application is a new product that integrates with the three applications mentioned above, as well as other third party decision support applications. The CDS application provides APIs to support duplicate drug therapy checking, drug allergy checking, links to drug monographs and additional drug information, and grouping of similar medications based on a common ingredient or therapeutic moiety.

For example, when new medications are added to a patient's medication list, they are automatically screened against the current list of medications for that patient using the CDS Duplicate Therapy API. This check ensures that the clinician is advised of existing medications with the same ingredients. Clinicians viewing medications are able to access drug monographs and any other additional information listed against a medication. The medication list is also screened using the CDS Drug Allergy API, which presents a warning if a drug allergy or intolerance to a particular medication or drug class is detected. These checks use data traversal algorithms that were developed by Orion Health for fast traversal of the SNOMED CT concept hierarchy and defining relationships. The warnings have been specifically designed to minimize alert fatigue. The Orion Health Problem List application is shown below in the diagram below with an adverse reaction alert.

CARDINAL, John Q
 BORN 12-Nov-1949 (66y) GENDER M
 ADDRESS Home HOME (463) 321-4568
 MRN 84568-4564 MPI 84568-4564
KNOWN ALLERGIES

Summary History Timeline Tasks Referrals Engage Other

Problem List

- ADVERSE REACTION**
 - Penicillin -class of antibiotic- Substance**
ADVERSE REACTION, Since Childhood
 - Gluten Dietary**
INTOLERANCE, Age 30 years
 - ALERT**
 - Cardiac pacemaker**
DEVICE IN SITU, Date 15-Jul-2016
 - Residence Remote**
HOME ENVIRONMENT, Since Date 2010
 - CDIFF - Clostridium Difficile** **CLOSED**
INFECTIOUS ORGANISM, Since Date 12-Feb-2015
 - DIAGNOSIS**
 - Chronic ischaemic heart disease, unspecified (I25.9)**
MEDICAL DIAGNOSIS, Date 05-May-2015
 - Congestive heart failure (I50.0)**
MEDICAL DIAGNOSIS, Date 22-Apr-2006
 - Hypertension**
MEDICAL DIAGNOSIS, Date 25-Nov-2004
 - Ingrown toe nail**
MEDICAL DIAGNOSIS, Unknown
 - Type 2 Diabetes**
MEDICAL DIAGNOSIS, Date 01-Apr-2008

Penicillin -class of antibiotic- Substance
 ADVERSE REACTION, Since Childhood

Review **Edit**

Information Source Patient Status **ACTIVE**
 Reaction Type Adverse reaction

Certainty Certain
 Onset Since Childhood
 Manifestations Anaphylaxis - Life-Threatening
 Details -

Past Reaction Events

Age 5 years Rash, severe difficulty breathing

Activity **Add Comment**

Updated by Joe Martin 01-Aug-2016 09:21
 ONSET Since Childhood

Updated by Joe Martin 01-Aug-2016 09:18
 EVENTS At Age 5 years - Rash, severe difficulty breathing (Added)

Review by Joe Martin 30-Oct-2015 05:33

Created by Francis McNamara 29-Oct-2015 16:01

INFORMATION SOURCE Patient
 ONSET Date 03-Jun-1995
 AGENT/SUBSTANCE NAME Penicillin -class of antibiotic-
 CERTAINTY Certain
 REACTION TYPE Adverse reaction

Figure 3: Problem List with CDS alert functionality

RefNotes

- <https://orionhealth.com/global/about-us/our-story/our-story/>
- <https://orionhealth.com/global/about-us/our-story/vision-values/>

Footnotes