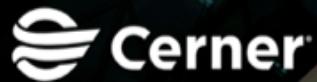


CODE LEARNING LAB 2018

# SMARTER CARE





# Introduction to SMART on FHIR & Ecosystem @ Cerner

Kol Kheang  
code Learning Lab  
10/09/2018



CODE LEARNING LAB 2018  
**SMARTER CARE**

# Agenda

---

- ❖ What is SMART on FHIR?
- ❖ SMART app examples
- ❖ SMART on FHIR app launch sequence
- ❖ SMART community
- ❖ Cerner Developer Ecosystem & code Console
- ❖ Cerner supported launch points
- ❖ Cerner SMART on FHIR tutorial app
- ❖ Cerner SMART on FHIR community
- ❖ Q & A



# Substitutable Medical Applications & Reusable Technology

# Fast Healthcare Interoperability Resources

# SMART Standards

---



Provides standards to build healthcare applications



Applications can run against any vendor implementing SMART



Open source (licensed under Apache License 2)



Generally web apps  
(though native apps are supported too)

# SMART > Platform Benefits

---



Defines how apps are launched



Authorization (OAuth 2)



Authentication (OpenID Connect)



Context sharing between EHR and app



Discover FHIR service endpoint

# SMART > Platform Benefits



Defines how apps are launched



Authorization (OAuth 2)



Authentication (OpenID Connect)

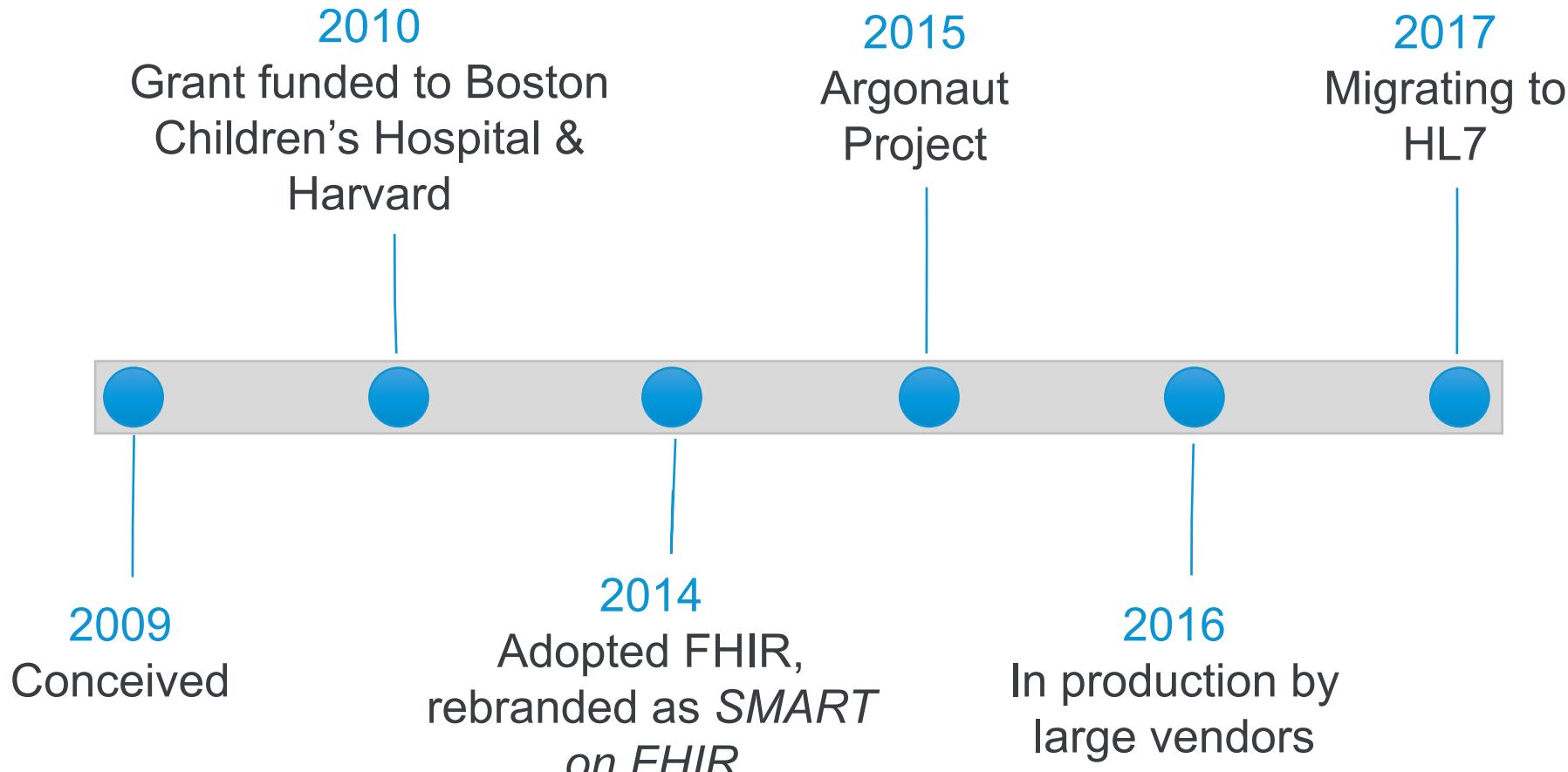


Context sharing between container and app



Discover FHIR service endpoint

# SMART > Trajectory



# Example Apps



Boston  
Children's  
Hospital

SMART®



ePreop™



KRAMES  
ON FHIR™



# SMART Cardiac Risk App by Cerner

ASCVD Risk Calculator 

[Results](#) [Risk Factors](#) [Recommendations](#)

**Sex**  Male  Female

**Total Cholesterol (mg/dL)**

**Diabetes**  No  Yes

**Age**

**HDL - Cholesterol (mg/dL)**

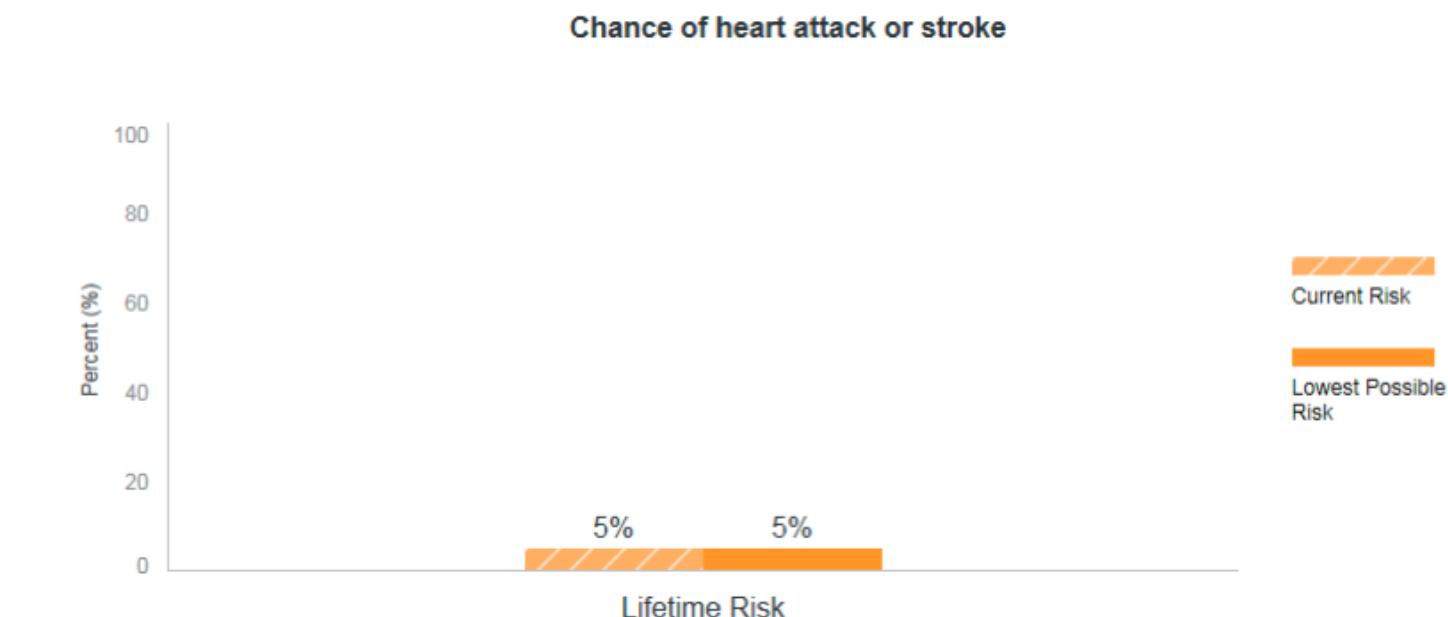
**Current Smoking**  No  Yes

**Race**  
 White  
 African American  
 Other

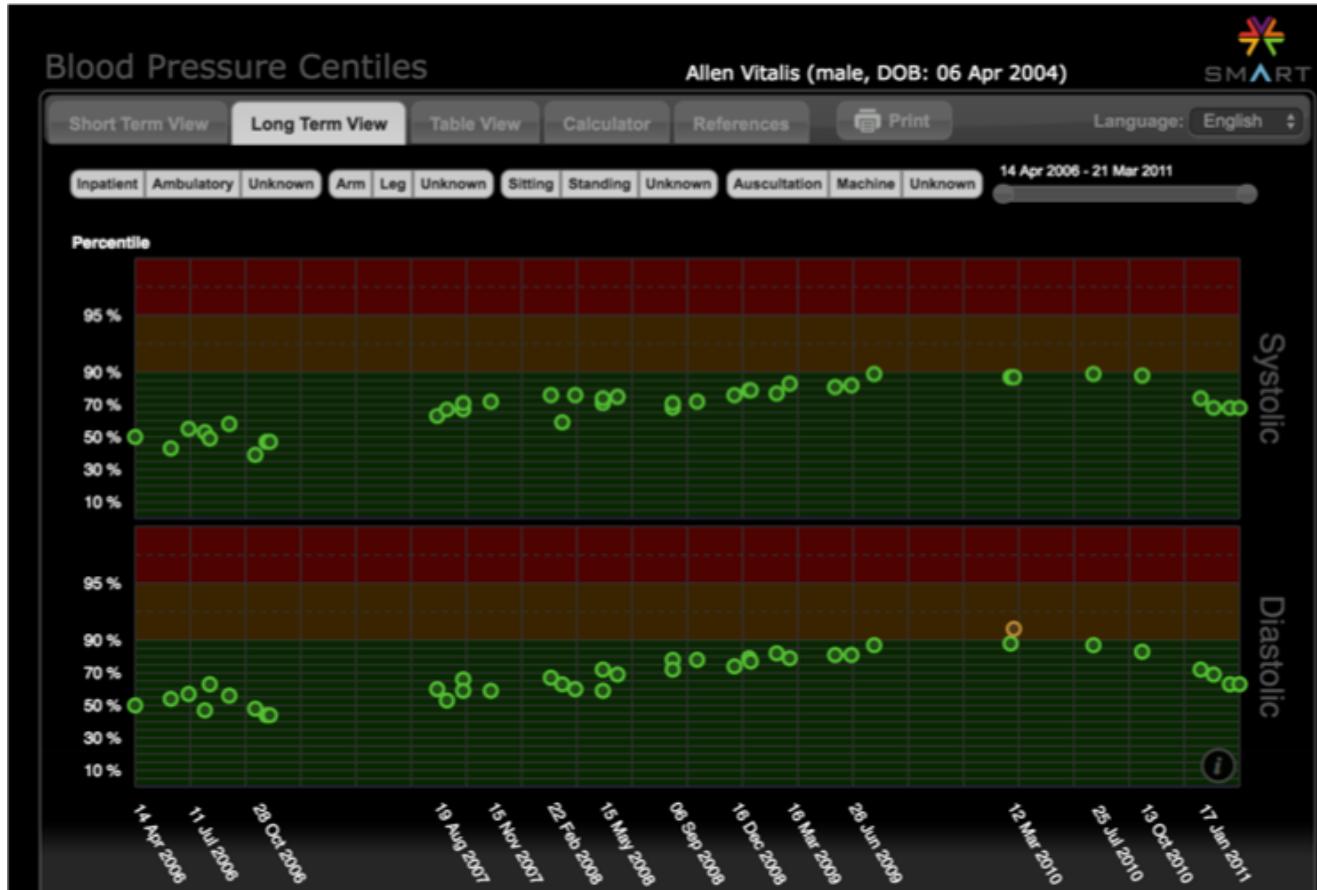
**Systolic Blood Pressure**

**Treatment for Hypertension**  No  Yes

# SMART Cardiac Risk App by Cerner

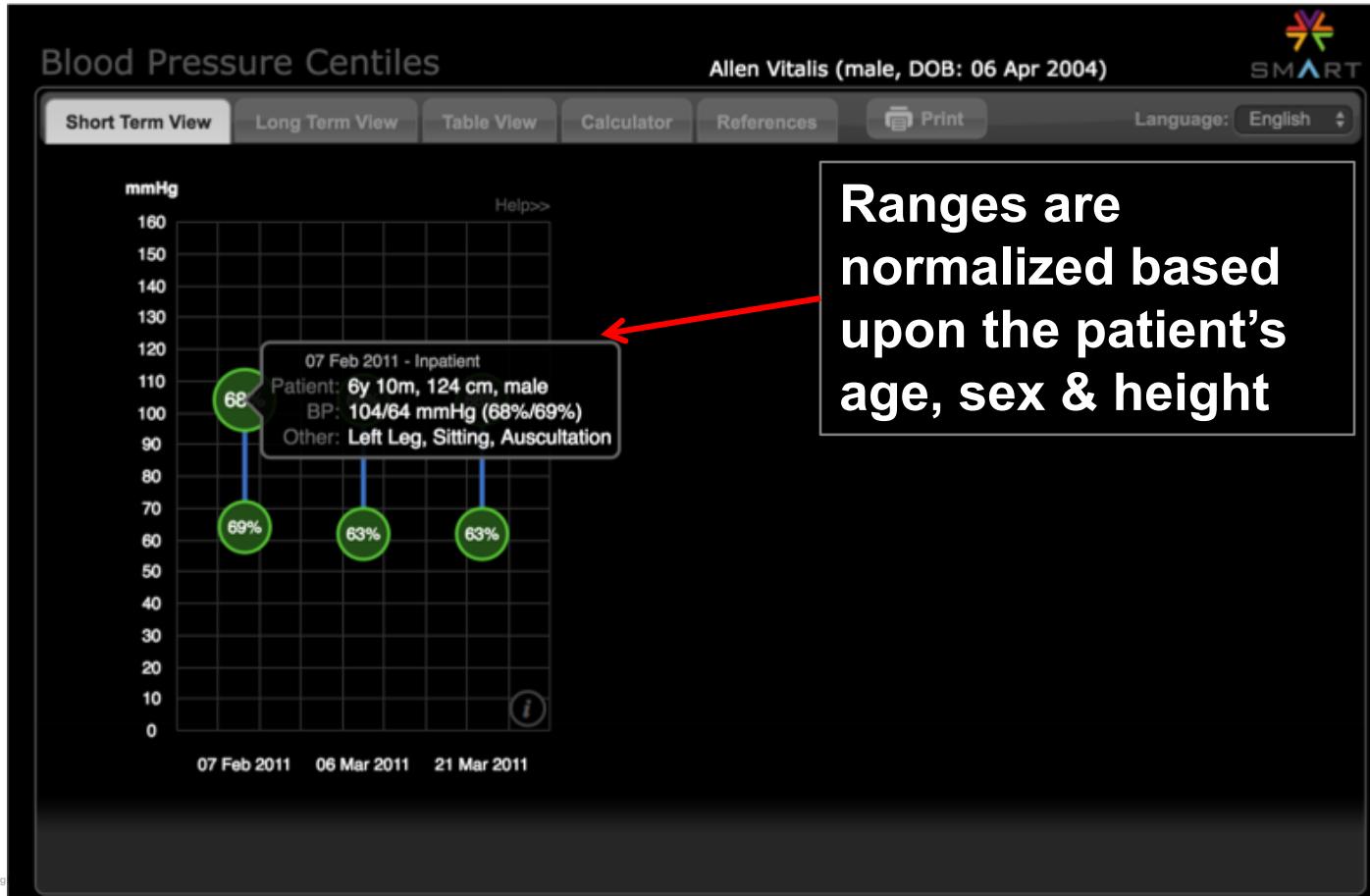


# SMART BP Centiles by Boston Children's Hospital

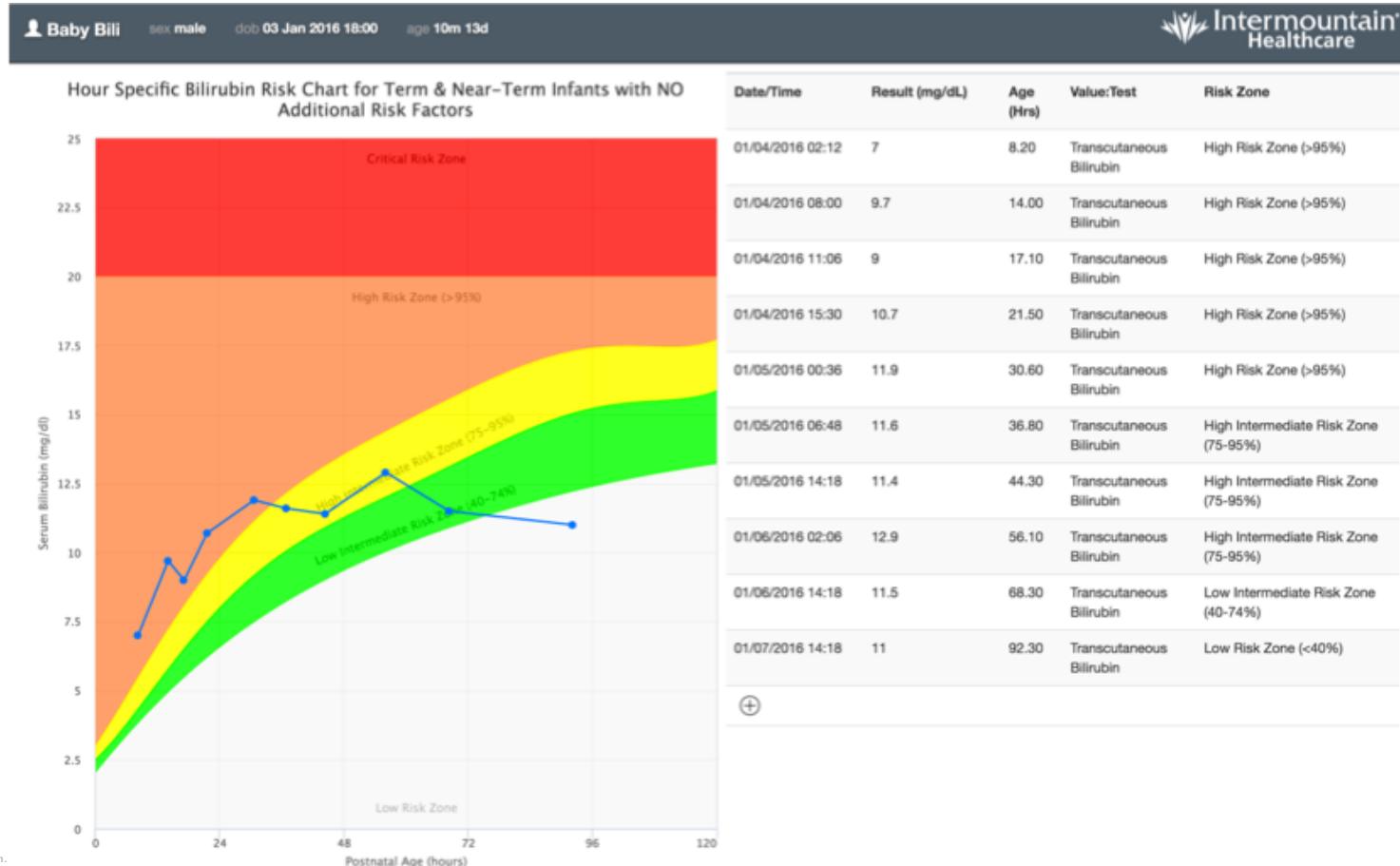


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# SMART BP Centiles by Boston Children's Hospital



# SMART Neonatal Bilirubin Alerts by Intermountain



# Medication by First Databank

medication® XZR26WX3

Demos | Tutorial | Feedback

Med List	Calendar	Add Med	Print PMI	English	Regular	Options
Drug Name	SIG Instructions	Links	Med Type	Category	<input checked="" type="checkbox"/> Cal	<input checked="" type="checkbox"/> PMI
Aspirin Tablet 81mg	1 once daily	 	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Carvedilol Tablet 25mg	1 twice daily	 	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Fish Oil Capsule 1000mg	2 once daily	 	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Flovent 100mcg/inh	1 puff every 12 hours	 	Inhalant	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Irbesartan Tablet 300mg	1 once daily	 	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metamucil Sugar-Free	1 teaspoon three times daily	 	Oral Liquid	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Omeprazole Delayed Release Tablet 20mg	1 once daily	  	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ProAir HFA	2 puffs every 4 hours for asthma	  	Inhalant	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Synthroid Tablet 50mcg	1 once daily	 	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Systane ophthalmic solution	1 drop each eye twice daily	  	Ophthalmic	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vitamin D3 Capsule 5000 iu	1 once daily	 	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Zetia Tablet 10mg	1 once daily	 	Oral Pill	Daily	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Blue SIG: SIG not recognized

 Edit unrecognized data

 View PMI (Personal Med Instructions)

 View demonstration

Blue Drug: Medicine not recognized

 Modify SIG instructions

 Med detail unavailable

 View FDA Med Guide

# Medication by First Databank

Print header

Print

Mandarin (Simplified)

Regular

## Carvedilol Tablet 25mg

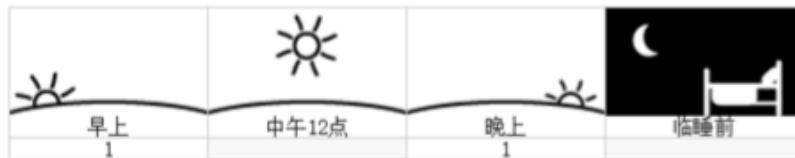
### 用法用量（服药说明）

口服，每天两次。

Take the medicine by mouth twice a day.

每次服一粒/片。

Take one (1) pill each time.



重要：以下是给您的具体说明。若该说明与您收到的其他信息不同，包括以下说明，请洽询您的处方医生或药师。

### 服用说明

吞服，请勿压碎或嚼碎药片/丸以后吞服。

此药须跟食物同服。

很重要的是要请您在每天的同一时间服药，这样药效最佳。

请在室温下储存此药，避热及避免阳光直射。

按时服用此药的每次剂量极其重要，就算感觉很好，也请准时服药。

如果您忘记了而错过（漏服）了一次剂量，请在想起来以后马上补服。如果想起来的时间已经差不多到了下一剂量的服药时间，请跳过（忽略）漏服的剂量。请继续按正常的服药时间安排服药。此药不可两剂（两次剂量）同时服用。

请告知您的医生、护士或药剂师您服用的所有药物。包括处方药和非处方药。同样告知他们您服用的任何维生素、中草药或其他保健食品。

如果您患有糖尿病，此药可能会隐藏某些低血糖的症状，比如心跳过速。请定期检测您的血糖水平并留意其它低血糖的症状。

低血糖的症状可能包括恶心、颤动、出汗、皮肤冰冷、心率过快、饥饿或易怒。

请勿突然停止服用此药。停止之前，请咨询您的医生。

### 注意事项

如果您曾对该药物过敏，请告知您的医生和药剂师。症状可能包括呼吸困难、皮疹、瘙痒、肿胀或者严重头晕。

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# KRAMES Patient Education by StayWell

KRAMES Patient Education

Conditions | 12 Medications | 5 Procedures | 0

Aortic valve stenosis... 60573004 Benign prostatic hyp... 266569009 Community acquired... 365993006 Coronary arterioscler... 53741008 Diabetes mellitus (dis... 73211009 Essential hypertensio... 59621009

Images Off 25 titles

ShareWIK: Expert Insight EN Aortic Valve Disease: Explaining Aortic Stenosis

HealthSheets EN Diabetes and Heart Disease

HealthSheets EN Diagnosing Heart Valve Problems

HealthSheets EN Eating Heart-Healthy Foods

Videos EN Eating Well with High Blood Pressure

HealthSheets EN Exercise for a Healthier Heart

Exit-Writer EN Heart Disease Education

HealthSheets EN Heart Valve Problems

HealthSheets EN Heart Valve Problems: Aortic Stenosis

Search

Filter and sort

Sort by

- All Relevant
- Newest Relevant
- Favorites
- Name
- Content Type

Gender

- All
- Male
- Female

Age

- All
- Infant (0-11 mo)
- Child (1-12 yrs)
- Teen (12-19 yrs)
- Adult (19-65 yrs)
- Senior (65+ yrs)

Content Type

- All
- Greystone - Adult
- Videos
- Cancer
- Knowledgebase
- Diseases and Conditions
- PDF
- Lab Tests
- Alchemy Drug Sheets
- Client Custom Content
- Exit-Writer
- HealthSheets
- Medications
- VA Videos
- KidsHealth
- ShareWIK: Patient Perspective
- ShareWIK: Friday Flyer
- Video HealthSheets
- ShareWIK: Expert Insight
- ShareWIK: Caregiver Perspective
- ShareWIK: Why the Health?

© KING LAB 2018

TER  
RE

# Qlik SMART Analytics Adapter

CernerQlik\_Adapter

Patient Encounter Analysis

3881400

Patient LACE Score  
12

BMI  
19.6

Customer Encounters  
16

Press Ganey Score  
24

Star Rating for Physician  
4

All Encounters

Respiration  
24

Pulse  
93

BP Systolic  
111

BP Diastolic  
86

(Respiratory rate)  
High (23) Ideal (16)

Pulse  
(100) Ideal (60)

avg(BP Systolic)  
(140) Ideal (120)

BP Diastolic  
(80) Ideal (80)

Care Provider  
Abate, Gale  
Abbate, Cosmo  
Abbate, Micky  
Abbey, Gary  
Abbie, Gualtero  
Abbie, Sheffield  
Abbie, Benedicto

Patient  
Smolin, Ivan Romanovich  
Aarika Stepiae  
Aaron Keer  
Ab Espy  
Abbe Cheetham  
Abbey Dovidian  
Abbie Ambrosini

Patient Encounter ID  
3881400 ✓

HRRP Conditions  
COPO

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# DoseMeRx

The screenshot displays the DoseMeRx software interface. At the top, there is a header bar with the DoseMeRx logo and a HELP button. Below the header, a summary box contains patient details: ID: 3850798, Name: Mead, Daniel (M), DOB: 07/15/1980, Height: 175 cm, Weight: 70 kg. To the right of these details are the Most Recent Dose (09/29/2017 09:00 AM), Most Recent Response (09/27/2017 8:17 PM), and Drug (Vancomycin (Adult)).

A central panel titled "Calculate Next Dose At" shows a date input field set to "29 Sep 2017 9:00 PM" and a "Calculate" button. A note below the input states: "Next dose should be between 2017-09-29 21:00 and 2017-10-02 09:00".

The interface is divided into three main sections for dose calculations:

- Default Individualized Target:** Displays the target dose as "750 mg over 1.5 hours twice daily for 3 days". It includes historical reports for AUC24 (400 mg·h/L) and AUC24 (363.59 mg·h/L). A warning message indicates that the historical report date is in the past.
- Guideline Dose:** Shows the guideline dose as "1250 mg over 2.5 hours every 18 hours for 3 doses". It includes a warning message stating that the historical report date is in the past.
- Label Dose:** Displays the label dose as "500 mg over 1.5 hours twice daily for one day". It includes two warning messages: one for a historical report date in the past and another stating that the dose is less than the minimum of 10 mg/kg.

Below these sections are tables for Peak, Trough, and AUC12 values, each with a "Plot" checkbox and a "Select" button. The Peak values are 20.64 mg/L, 25.71 mg/L, and 13.32 mg/L respectively. The Trough values are 10.62 mg/L, 9.64 mg/L, and 6.85 mg/L respectively. The AUC12 values are 181.80 mg·h/L, 298.13 mg·h/L, and 117.15 mg·h/L respectively.

At the bottom left is a "Customize" button, and at the bottom right is an "Individualized Dose Profile" button.



# MyLegacy Disease Risk Reference

 MyLegacy Disease Risk Reference

Patient Name: Jake Boxer  
MRN: 3772357  
Date Submitted: 09/30/2017

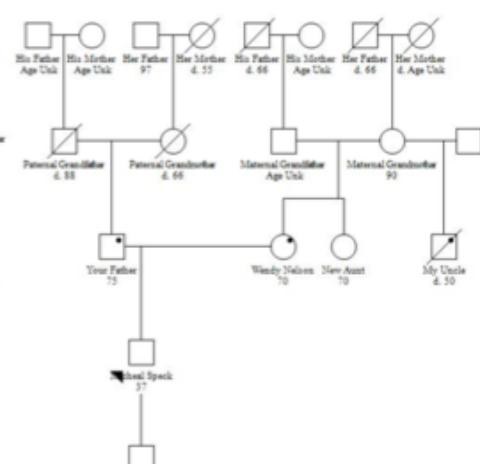
## Pedigree

### Abdominal Aortic Aneurysm

7/19/2017

Legend:

- Abdominal Aortic Aneurysm
- Aneurysm, Cervical
- Aneurysm, Other
- Aneurysm, Peripheral
- Aneurysm, Thoracic
- Carotid Artery Disease
- Connective Tissue Disorder
- Coronary Heart Disease
- Heart Attack
- Heart Failure
- Ischemic Stroke
- Peripheral Artery Disease



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# SMART embedded launch workflow



## SMART App One-Time Setup

- SMART Apps must be published at Transport Layer Security (TLS)-protected URL (https)
- Register a launch URL with the EHR
- Register an authorization redirect URL with HER
- Register the required scopes with the EHR

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Launch SMART app  
with FHIR endpoint +  
opaque launch id

#### EHR

Launches SMART app via the app's  
launch URL

Captures the context (e.g. patient id,  
encounter id) and associate this data with  
an opaque launch id

The FHIR endpoint URL and an opaque  
launch id are given as parameters

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Launch SMART app  
with FHIR endpoint +  
opaque launch id

Calls FHIR /metadata service

### SMART App

Calls FHIR conformance  
resource (GET /metadata)  
to obtain the OAuth  
endpoint



Launch SMART app  
with FHIR endpoint +  
opaque launch id

Calls FHIR /metadata service

Returns Conformance with OAuth endpoint

### FHIR Service

Returns the Conformance  
document containing the  
OAuth endpoint

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Launch SMART app  
with FHIR endpoint +  
opaque launch id

Calls FHIR /metadata service

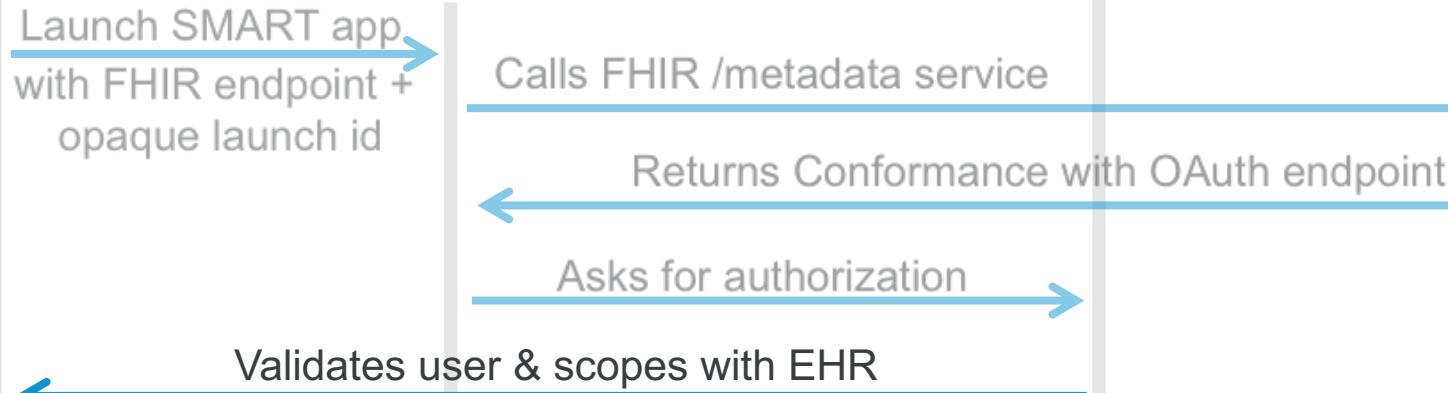
Returns Conformance with OAuth endpoint

Asks for authorization

### SMART App

Asks the OAuth provider for authorization to run as well as the desired context (e.g. patient, encounter) via the launch scope

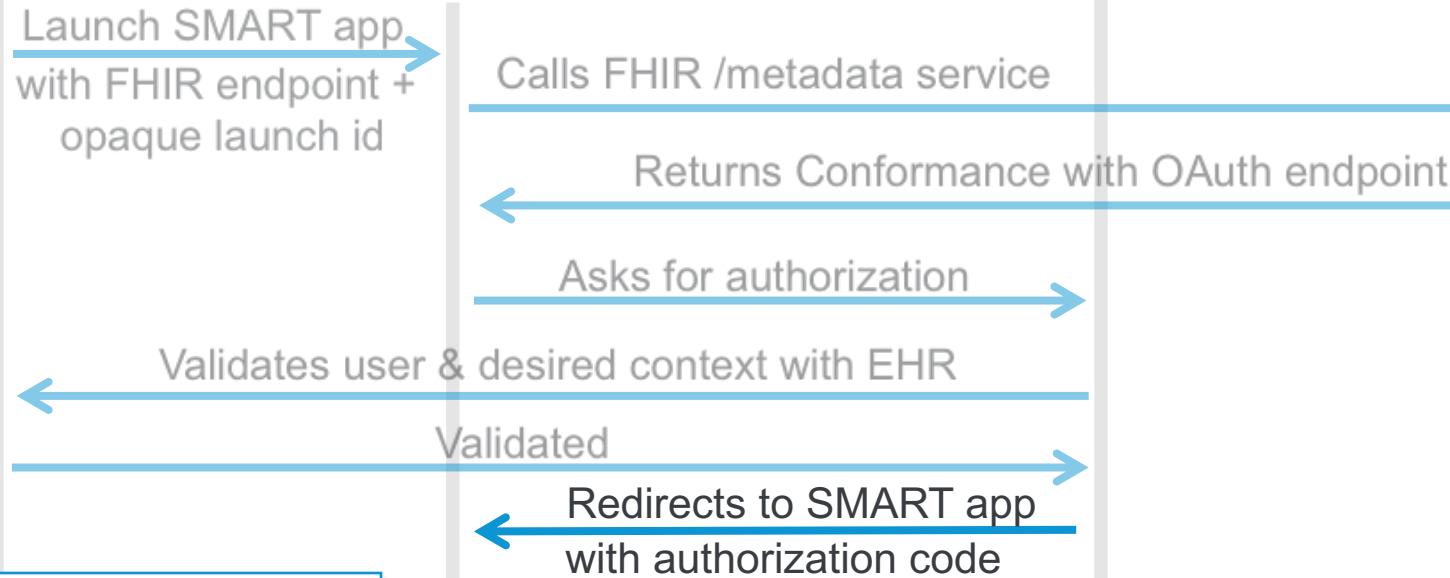
App requests scopes (e.g. launch openid profile patient/Patient.read patient/Observations.read) that it needs to operate



### OAuth Provider

Contacts the underlying EHR to validate the authorization request from the SMART app

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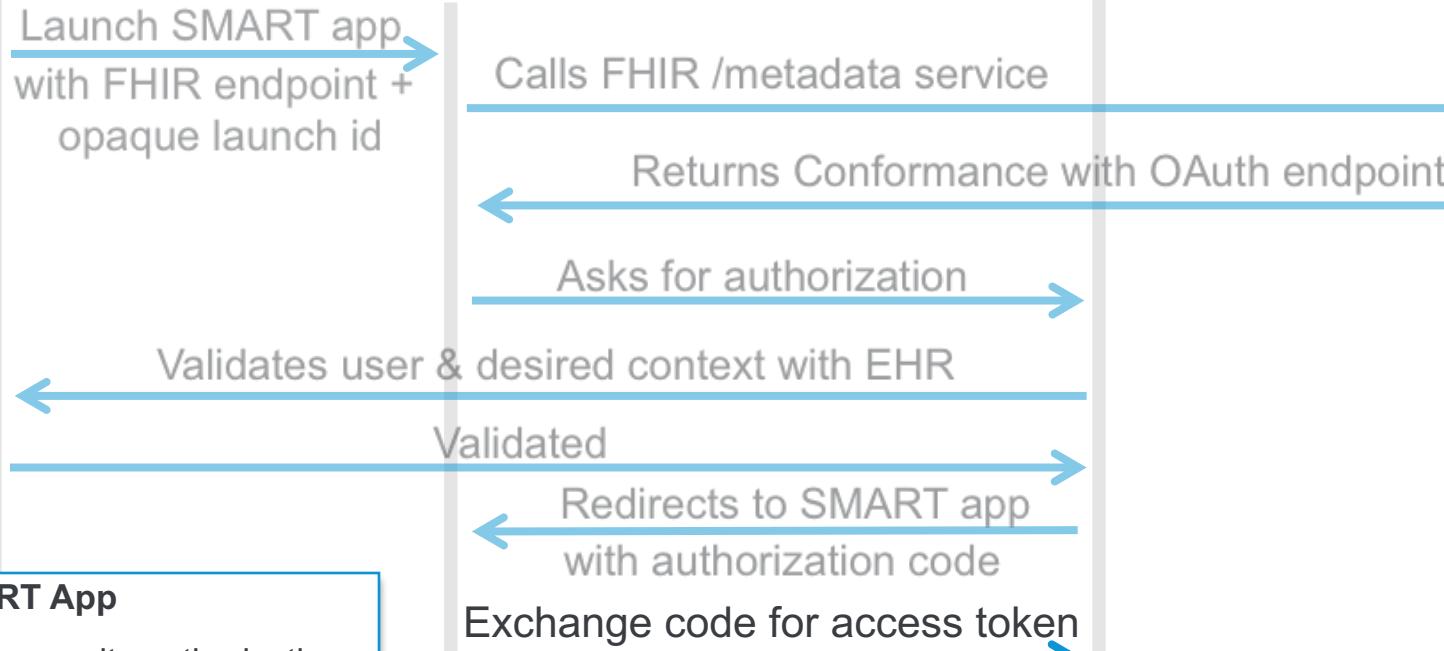


### OAuth Provider

Redirects back to the SMART app using the app's registered redirect URL with an authorization code

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Launch SMART app  
with FHIR endpoint +  
opaque launch id

Calls FHIR /metadata service

Returns Conformance with OAuth endpoint

Asks for authorization

Validates user & desired context with EHR

Validated

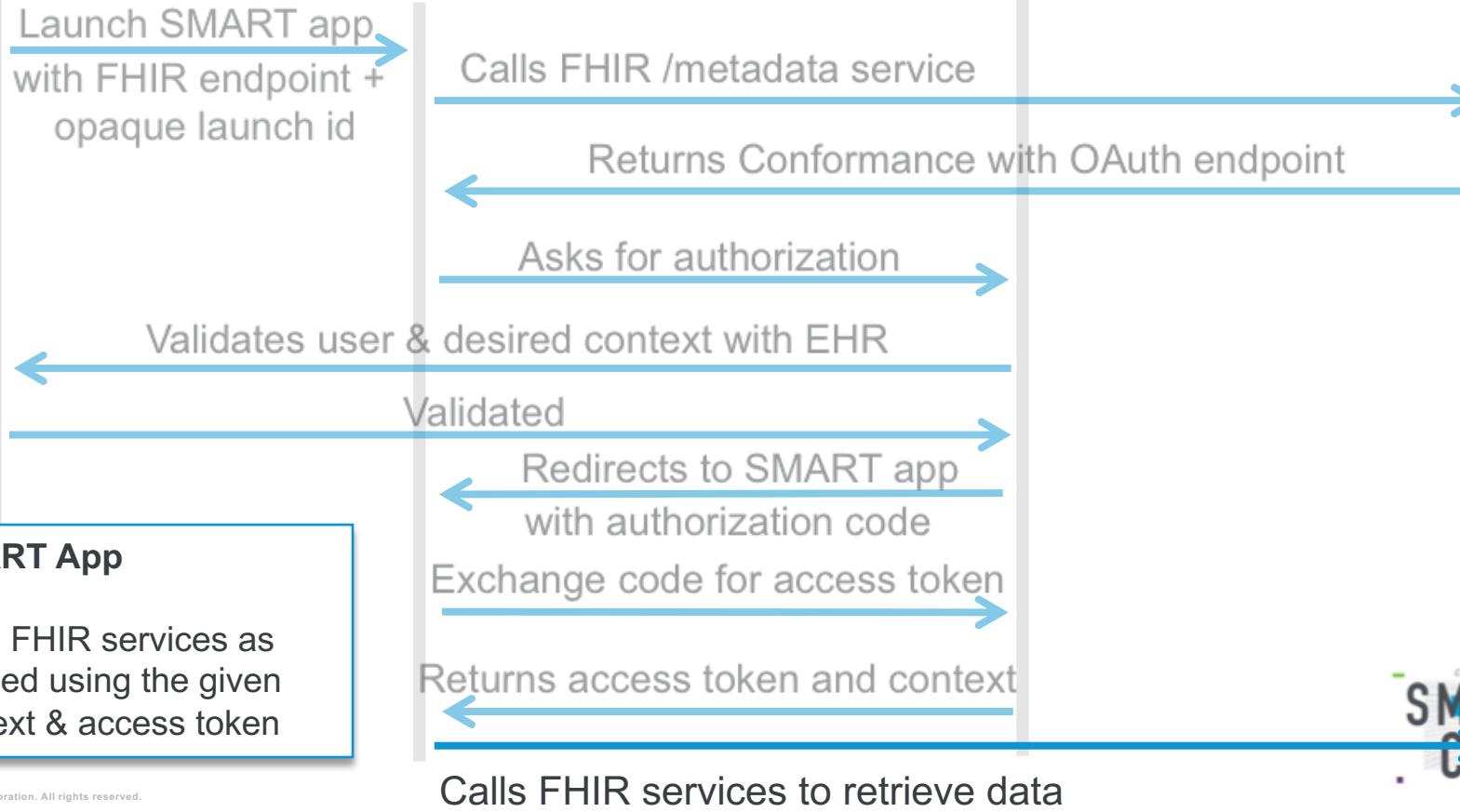
Redirects to SMART app  
with authorization code

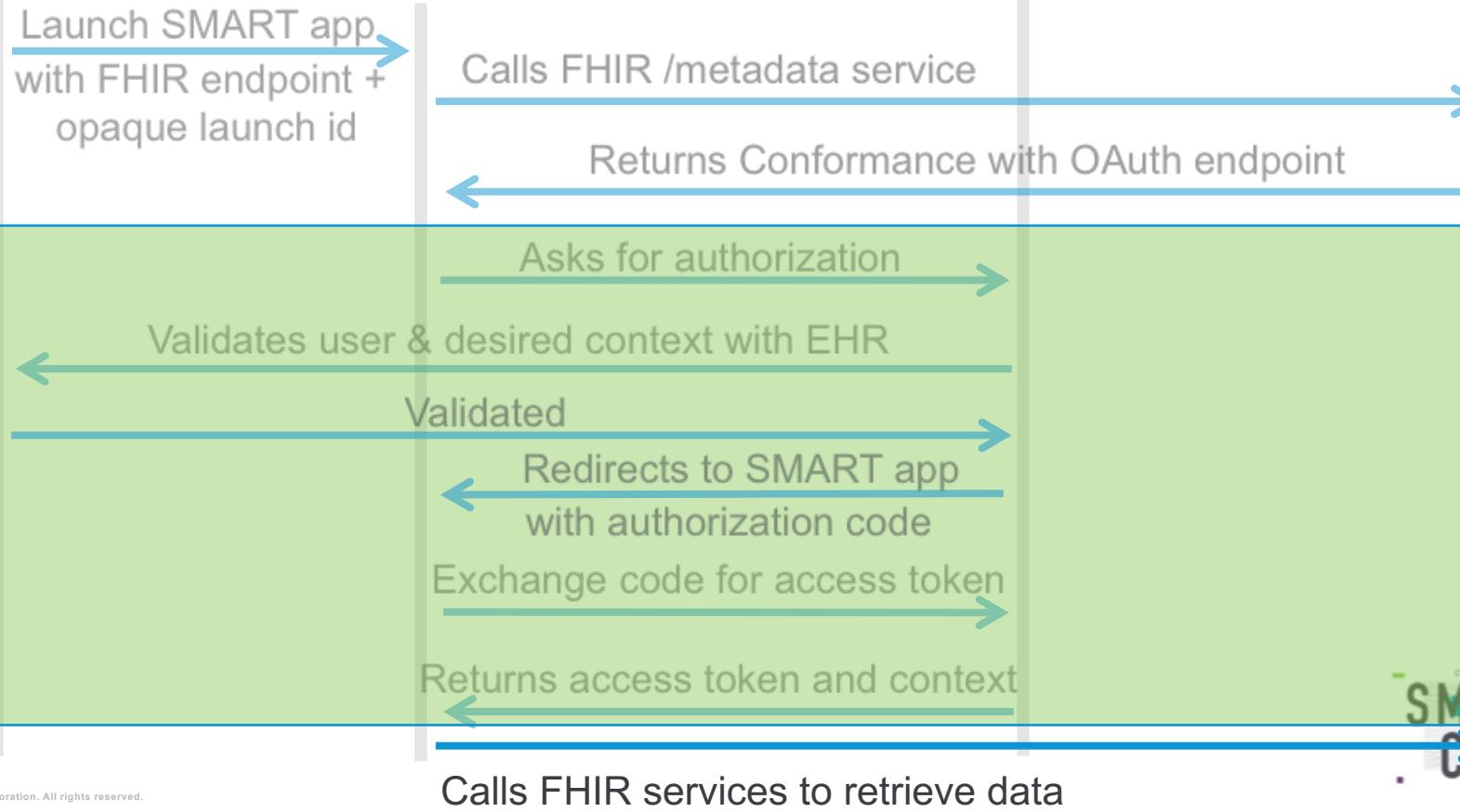
Exchange code for access token

Returns access token and context

### OAuth Provider

Returns an OAuth access  
token as well as context  
(e.g. patient and encounter)





# SMART > Community

---



[smarthealthit.org](http://smarthealthit.org)



[docs.smarthealthit.org](http://docs.smarthealthit.org)



[gallery.smarthealthit.org](http://gallery.smarthealthit.org)



[chat.fhir.org](http://chat.fhir.org) | [bit.ly/smarter-google-group](https://bit.ly/smarter-google-group)



[github.com/smarter-on-fhir](https://github.com/smarter-on-fhir)

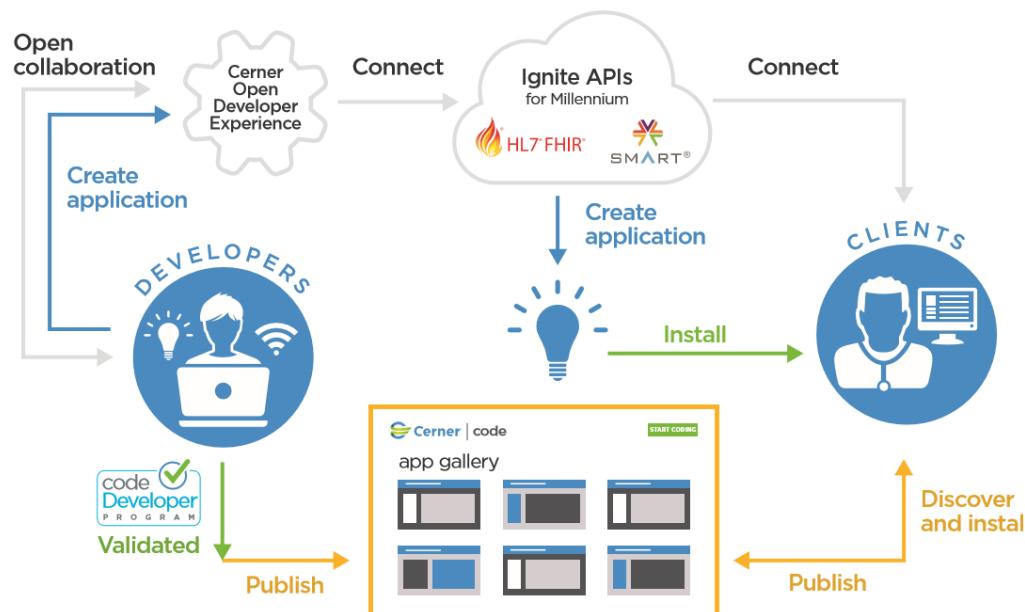


# Developer ecosystem



# Developer ecosystem

## Developer ecosystem



# code Console



Developed and  
hosted by Cerner

# code Console

## CODE

The Cerner Open Developer Experience provides a developer everything they need to develop and test their applications and services against Cerner's open platforms.

Log in using CernerCare

Email Address

Password

Remember Me

**Log In**

[Forgot your password?](#)  
[Mobile Website](#)

Don't have an account?

**Create an account >>**

**bit.ly/cerner-code-console**



# code Console > My Apps

My Apps

kol.kheang@cerner.com | Logout

My Apps

+ New App

grid icon

list icon



[GitHub SMART App Tutorial](#)

App Type: provider  
FHIR Spec: dstu2



[localhost - App Validator](#)

App Type: provider  
FHIR Spec: dstu2



[App Validator DSTU2](#)

App Type: provider  
FHIR Spec: dstu2



[SMART without FHIR - ABL Testing](#)

App Type: provider  
FHIR Spec: dstu2

# code Console > App Registration

My Apps | koi.kheang@cerner.com | Logout

## App Registration

\* Indicates a required field.

**\* App Name**

**SMART Launch URI**

The URI to initiate the launch of your SMART app

**\* Redirect URI**

The callback URI for the OAuth2 server to redirect to your SMART App

**\* App Type**

- Provider
- Patient
- System

**\* FHIR Spec**

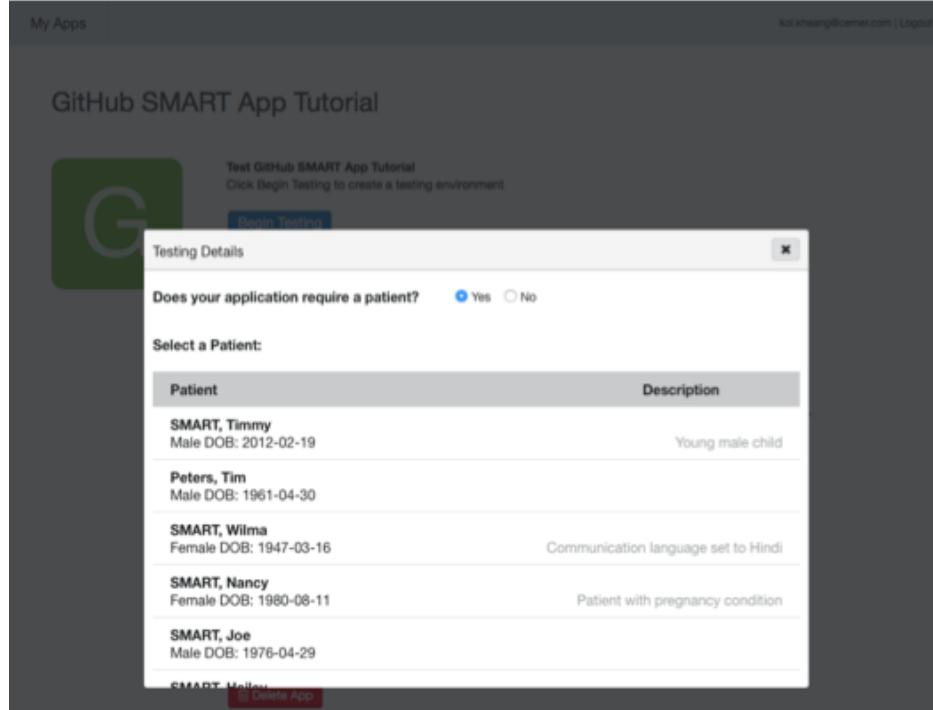
The FHIR version your SMART App will consume

- dstu2

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# code Console > Launching App



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# Launch Points



# SMART App > Organizer View

The screenshot shows the SMART App Organizer View interface. At the top, there's a navigation bar with links for Task, Edit, View, Patient, Chart, Links, Navigation, and Help. Below that is a header bar with tabs for Patient List, Judy IBH, and Links, along with recent items, full screen, print, and search functions.

The main content area displays a list of patients in a table format. The columns include Name, Age, DOB, Patient Status, Last Review, Weeks / Encounters, Encounter, PHQ-9, Change, and Comments. The table has 11 rows, each representing a patient. The first row is expanded to show more details:

Name	Age	DOB	Patient Status	Last Review	Weeks / Encounters	Encounter	PHQ-9	Change	Comments
Chen, Flora	38 yrs	01-01-1980	Active	Jul 11, 2018	21 Weeks - 5 Encounters	Jul 6, 2018	13	+18%	
Powell, Peter	27 yrs	08-08-1991	Active	Sep 4, 2018	18 Weeks - 7 Encounters	Sep 12, 2018	18	+6%	
Sharma, Manish	43 yrs	10-05-1975	Active		2 Weeks - 1 Encounter	Sep 22, 2018	13	-	
Newman, Frank	31 yrs	07-16-1987	Active	Sep 18, 2018	5 Weeks - 1 Encounter	Sep 6, 2018	19	-	
Svensson, Linda	37 yrs	03-30-1981	Active	Sep 14, 2018	25 Weeks - 3 Encounters	Sep 14, 2018	10	-52% <span style="color: green;">✓</span>	Significantly improved.
Walters, Wilma W	83 yrs	05-05-1935	Active	Aug 1, 2018	21 Weeks - 5 Encounters	Aug 5, 2018	17	-6%	
Miller, William	81 yrs	01-01-1937	Active	Sep 24, 2018	4 Weeks - 1 Encounter	Sep 12, 2018	23	-	May require quick escalation?
Miller, Ethan	16 yrs	04-30-2002	Active	Sep 3, 2018	7 Weeks - 2 Encounters	Sep 4, 2018	20	-9%	History of self-harm.
Coronel, Melinda R	85 yrs	03-31-1933	Active	Aug 22, 2018	13 Weeks - 3 Encounters	Sep 3, 2018	9	-25%	
Smith, Shannon	29 yrs	11-29-1988	Prevention			Start Episode			
Peterson, Terry	81 yrs	01-01-1937	Prevention			Start Episode			powered by  Judy

# SMART App > Chart View

Boxer, Diane J - 00010011 Opened by Dubois MD, Penny

Task Edit View Patient Chart Links Notifications Navigation Help

Home Physician Worklist ePA Worklist Dynamic Worklist Referral Management Uptodate Links Tear Off Suspend Exit Calculator AdHoc Communicate

Boxer, Diane J

Boxer, Diane J DOB: 8/3/1952 Age: 66 years Sex: Female FIN: 000112585  
Allergies: No Known Medication Allergies Isolation: Resuscitation Status:  
Care Team: <No Primary Contact> Loc: BW 15NW; 15009; 1 CommonWell: Not Enabled HealthLife: Yes  
Clinical Trials:  
Advance Dir:

SMART ePrep SurgicalValet

Checklist

Boxer, Diane J [10011] [112585]  
DOB: 08/03/1952 (65 YOF)  
HT 0 in / WT 0 kg / BMI 0 kg/m<sup>2</sup> DOS: 09/29/2017

This may not be the latest data available in the EMR. Please use the "Refresh Health Profile" from the left menu to get the latest data.

PREOP Surgical CDI ERP Results/Docs Day of Surgery Readmission Prevention

Length Of Stay Readmission Period Readmission Reason

Status	Completed	Task	Sys Generated	Comments	Last Update
<input type="button" value="Edit"/>	<input type="radio"/>	Patient Satisfaction Survey	<input checked="" type="checkbox"/>		9/29/2017 11:03 AM CST (J. Anderson, MD)
<input type="button" value="Edit"/>	<input type="radio"/>	RN Screening Satisfaction Survey	<input checked="" type="checkbox"/>		9/29/2017 11:03 AM CST (J. Anderson, MD)
<input type="button" value="Edit"/>	<input type="radio"/>	Post Procedure Follow Up (30+) Satisfaction Survey	<input checked="" type="checkbox"/>		9/29/2017 11:03 AM CST (J. Anderson, MD)
<input type="button" value="Edit"/>	<input checked="" type="radio"/>	Post D/C Follow-up	<input checked="" type="checkbox"/>		9/29/2017 11:03 AM CST (J. Anderson, MD)

Add New Task Show Removed Tasks

Remove the current view and recreate on desktop

P1810 PWMD1 | October 08, 2018 12:15 PM CDT

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# SMART App > MPage Workflow / Summary

The screenshot shows the SMART App interface. At the top, there is a header bar with patient information: CLARK, ZACHARY, PCP/Kolm, Margaret, DOB:3/3/1936, Age:81 years, and various medical details like Allergies: Allergies Not Recorded, Phone: (231) 564-6546, and Emergency FIN: <No - Financial number>. Below the header, the main content area has a title bar "ASCVD Risk App". The "ASCVD Risk Calculator" form is displayed, containing fields for Sex (Male selected), Total Cholesterol (130-320 mg/dL), Diabetes (No selected), Age (65), HDL - Cholesterol (20-100 mg/dL), Current Smoking (Yes selected), Race (White selected), Systolic Blood Pressure (90-200), and Treatment for Hypertension (Yes selected). A note at the bottom states: "The following are required to compute ASCVD risk: Total Cholesterol (mg/dL), HDL - Cholesterol (mg/dL), Systolic Blood Pressure". On the left side of the main content area, there is a sidebar with tabs: "MPages View" (selected) and "ASCVD Risk App". The overall interface is clean and modern, designed for healthcare professionals.

# SMART App > HealtheLife (Patient Portal)

The screenshot shows the HealtheLife Patient Portal interface. At the top, there is a blue header bar with the text "Dashboard", "English (United States) ▾", and "Sign Out". Below the header is a navigation bar with icons for Assessment, Appointments, Health Trackers, Action Plan, Health Record (which is selected), and Messaging. The main content area is titled "Health Profile" and includes a "Print" button. On the left, there is a sidebar with a navigation menu:

- Health Profile (selected)
- Results
- Medications
- Patient Documents
- Procedures
- Download & Send
- Radiology
- Pathology
- Clinician Notes
- Growth Chart
- Medication
- Comprehensive Record

The main content area displays "Current Medications" with a note: "Your pharmacy may make changes, so be sure to ask your pharmacist for exact medication instructions." It lists two medications:

- Jantoven 2.5 mg oral tablet (Learn more about this)
- Date Started On: Jul 11, 2017
- Ambien 5 mg oral tablet (Learn more about this)
- Date Started On: May 25, 2017

Below this, there is a section for "Immunizations" which is currently empty.

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# SMART App > Authorization

## Authorization Needed

I, MANSOOR, GHALIB, (Not you? [Sign out](#)) request that VISN\_MO USPres share the following health information with Meducation - Patient.

VISN\_MO USPres will share this information until I log out:

- personal information  ⓘ
- medications  ⓘ

[View full list of information.](#)

The information you share may be subject to re-disclosure. Consult Meducation - Patient's terms of service and privacy policy.

I, as the authorized representative, am allowing access to the records of:

MANSOOR, GHALIB (Self, 68)

[Expecting different people?](#)

Please email me a copy of this authorization.

Clicking **Deny** will not impact treatment, payments for treatment, enrollment, or eligibility for benefits at VISN\_MO USPres.

[Authorize](#) [Deny](#)

# SMART App > HealtheLife (Patient Portal)

The screenshot shows a web browser window titled "Medication® - FHIR". The URL is https://mymeds.medication.com/index. The page displays a list of medications imported from "Cedars-Sinai".

Tag	Name	Quantity	Unit	Refills	ID
<input checked="" type="checkbox"/>	benazepril (benazepril 5 mg oral tablet)	1 tablet	Oral	80, 60 tabs, 11 Refills	898729
<input checked="" type="checkbox"/>	donepezil (donepezil 10 mg oral tablet)	1 tablet	Oral, Once a Day (at bedtime)	30 tabs, 5 Refills	997229
<input checked="" type="checkbox"/>	ibuprofen (ibuprofen 400 mg oral tablet)	1 tablet	Oral, q4hr	180 tabs, 5 Refills	197809
<input checked="" type="checkbox"/>	simvastatin (simvastatin 20 mg oral tablet)	1 tablet	Oral, Once a Day (at bedtime)	90 tabs	312981
<input checked="" type="checkbox"/>	warfarin	2 mg	Oral, Daily		11289
<input checked="" type="checkbox"/>	cetPAZolin	1 g	IV Piggyback, Once		2180
<input checked="" type="checkbox"/>	cetPAZolin	2,000 mg	IV Piggyback, Once		2180

**Import Selected**

# Cerner SMART on FHIR Tutorial

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**[bit.ly/cerner-smart-on-fhir-tutorial](https://bit.ly/cerner-smart-on-fhir-tutorial)**



# Community @ Cerner

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[code.cerner.com](http://code.cerner.com)



[fhir.cerner.com](http://fhir.cerner.com)



[bit.ly/cerner-code-console](http://bit.ly/cerner-code-console)



[bit.ly/cerner-smart-on-fhir-developers](http://bit.ly/cerner-smart-on-fhir-developers) |  
[bit.ly/ignite-apis-community](http://bit.ly/ignite-apis-community)



[github.com/cerner](http://github.com/cerner)



A dark, abstract background featuring a complex pattern of overlapping triangles and intersecting lines, creating a sense of depth and geometric complexity.

*Thanks!*

CODE LEARNING LAB 2018

**SMARTER  
CARE**



# Q & A

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