

# Laiika

Shauni D eshm ukh  
ideshmukh@mitre.org

MITRE

June 18, 2009



# W h o i s M I T R E ?

- Independent, not-for-profit organization
  - Chartered to work in the public interest
  - Free from organizational and personal conflicts of interest
  - Five decades of technology architecture, acquisition, and integration oversight experience
  - Center for Transforming Health with deep healthcare and technical expertise
- Addressing unique opportunities and challenges facing the healthcare industry with regards to standards
- Partnered with CCHIT to build Laika



Join Announcement List

An open source electronic health record (EHR) testing framework.

Laika analyzes and reports on the interoperability capabilities of EHR systems. This includes the testing for certification of EHR software products and networks.



### Project Milestones

23 Jul 08 Laika presented at OSCen



Laika provides open  
source tools to test  
EHR interoperability

# W h a t c a n L a i k a d o ?

## Laika C 3 2

- C r e a t e / a u t o - g e n e r a t e p a t i e n t t e m p l a t e s
- E x p o r t p a t i e n t t e m p l a t e s a s C 3 2
- C o n s u m e & v a l i d a t e C 3 2

## Laika X D S

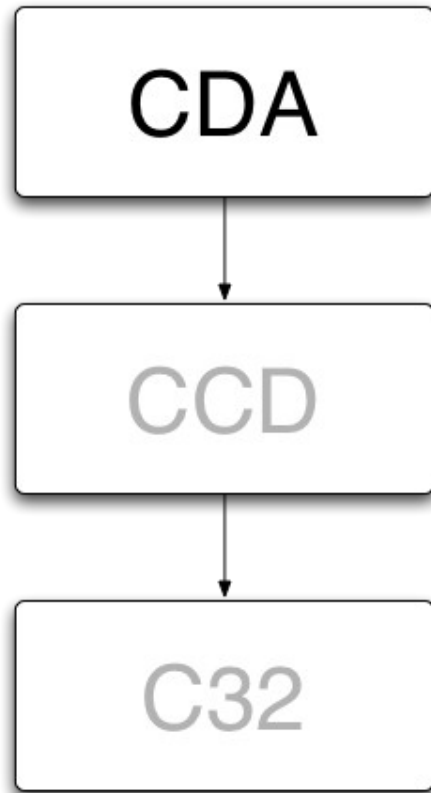
- N I S T O p e n S o u r c e X D S r e p o s i t o r y
- P u s h d o c u m e n t s t o r e p o s i t o r y
- Q u e r y , R e t r i e v e f r o m X D S a n d v a l i d a t e X M L

## PIX / P D Q

- A c t a s a P I X M a n a g e r
- R e c e i v e a n d v a l i d a t e P I X F e e d
- V e r i f y P I X Q u e r y
- V e r i f y P D Q r e s u l t s

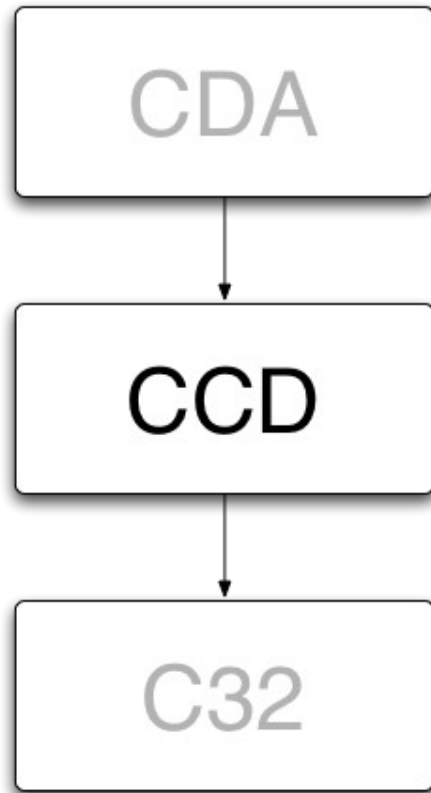
Laika C 3 2

# W h a t ' s a C D A ?



- C l i n i c a l D o c u m e n t  
A r c h i t e c t u r e
- H L 7 S t a n d a r d
- X M L
- G e n e r a l s p e c i f i c a t i o n f o r  
c l i n i c a l d o c u m e n t s

# W h a t ' s a C C D ?



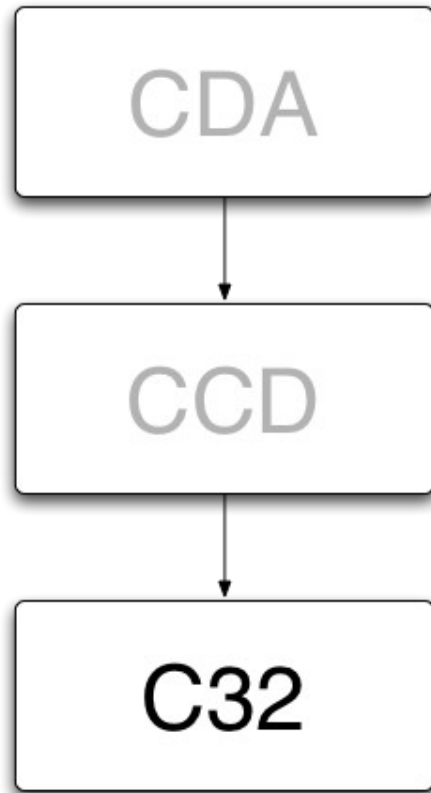
- C o n t i n u i t y o f C a r e  
D o c u m e n t
- H L 7 S t a n d a r d
- X M L
- M a s h u p o f t h e C D A a n d  
C C R



# C C D Sections

Patient	Medications
Purpose	Medical Equipment
Payers	Immunizations
Advance Directives	Vital Signs
Support	Results
Functional Status	Procedures
Problems	Encounters
Family History	Plan of Care
Social History	Healthcare Providers
Alerts	

# W h a t ' s a C 3 2 ?

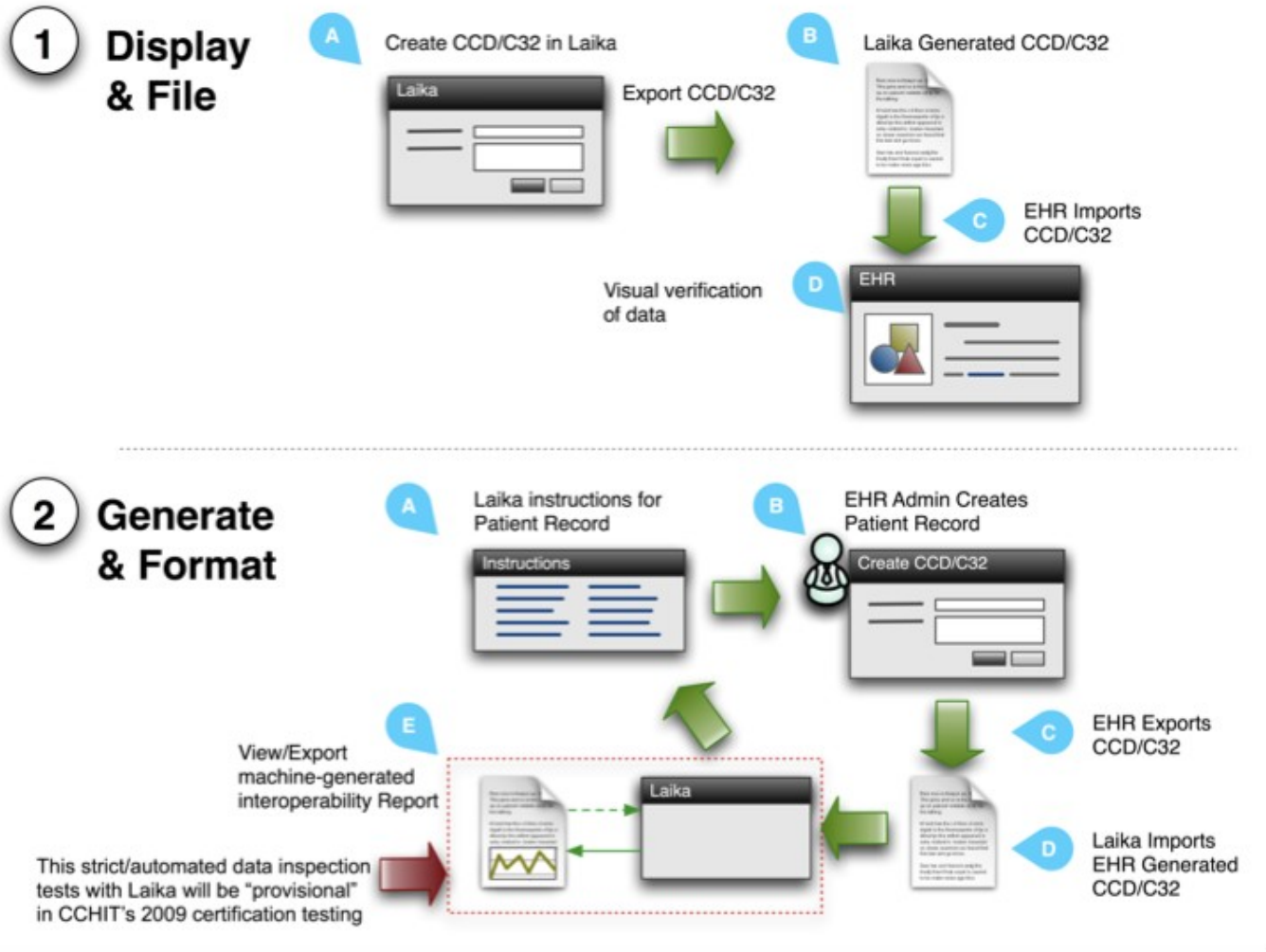


- N a m e d o e s n ' t m e a n a n y t h i n g
- H I T S P S t a n d a r d
- F u r t h e r c o n s t r a i n s C C D

C 3 2 s can be used to  
exchange continuity of  
care data

Laika tests C 3 2  
interoperability of E H R  
systems

# C 3 2 C o n O p s



Display & File

# Step A

Laika Test Library


http://localhost:3000/laika/patient\_data/1046018616

post to del.icio.us my del.icio.us Gmail

Welcome, Andy | Logout

People & Inspections About Feedback

Dashboard **Library**



## David Carter


### CCD/C32 Modules

- Person Information
- Language Spoken
- Support
- HealthCare Provider
- Insurance Provider
- Allergies and Drugs
- Conditions
- Medications
- Pregnancy
- Information Source
- Advance Directive
- Comments
- Vital Signs
- Results
- Immunizations
- Encounters

### Person Information

Name prefix	<input type="text" value="Mr."/>
First name	<input type="text" value="David"/>
Last name	<input type="text" value="Carter"/>
Name suffix	<input type="text"/>
Gender	<input type="text" value="Male"/>
Date of birth	<input type="text" value="March 17, 1995"/>
Marital status	<input type="text" value="Never Married"/>
Religion	<input type="text" value="Roman Catholic Church"/>
Race	<input type="text" value="Irish"/>
Ethnicity	<input type="text"/>
Street address	<input type="text" value="1234 Willow Way"/>
	<input type="text"/>
City	<input type="text" value="Silver Spring"/>
State	<input type="text" value="MD"/>
Postal code	<input type="text" value="20902"/>
Country	<input type="text" value="United States of America"/>
Home phone	<input type="text" value="+1-301-555-0144"/>

# Step B



The screenshot shows a Mozilla Firefox browser window with the address bar containing the URL `http://localhost:3000/laika/patient_data/10460186187format=xml`. The browser's status bar at the bottom indicates "Done". The main content area displays the XML document tree for the file. The root element is `<ClinicalDocument>` with a schema location. The tree includes several nested elements: `<typeId>`, `<templateId>`, `<id>`, `<code>`, `<title>`, `<effectiveTime>`, `<confidentialityCode>`, `<languageCode>`, `<recordTarget>`, `<patientRole>`, `<id>`, `<addr>` (containing `<streetAddressLine>`, `<city>`, `<state>`, `<postalCode>`, and `<country>`), and `<telecom>`.

```
- <ClinicalDocument xsi:schemaLocation="urn:hl7-org:v3 http://xreg2.nist.gov:8080/hitspValidation/schema/cdar2c32/infrastructure/cda/C32_CDA.xsd">
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId assigningAuthorityName="CDA/R2" root="2.16.840.1.113883.3.27.1776"/>
  <templateId assigningAuthorityName="CCD" root="2.16.840.1.113883.10.20.1"/>
  <templateId assigningAuthorityName="HITSP/C32" root="2.16.840.1.113883.3.88.11.32.1"/>
  <id extension="Laika C32 Test" assigningAuthorityName="Laika: An Open Source EHR Testing Framework projectlaika.org" root="2.16.840.1.113883.3.72"/>
  <code code="34133-9" displayName="Summarization of patient data" codeSystemName="LOINC" codeSystem="2.16.840.1.113883.6.1"/>
  <title>David Carter</title>
  <effectiveTime value="20080626135217-0500"/>
  <confidentialityCode/>
  <languageCode code="en-US"/>
  <recordTarget>
    <patientRole>
      <id extension="1234567890"/>
      <addr>
        <streetAddressLine>1234 Willow Way</streetAddressLine>
        <city>Silver Spring</city>
        <state>MD</state>
        <postalCode>20902</postalCode>
        <country>US</country>
      </addr>
      <telecom value="tel:+1-301-555-0144" use="HP"/>
    </patientRole>
  </recordTarget>
</ClinicalDocument>
```



# Step C

1. EHR being tested displays & files the C 32
2. Verify compliance with Laika-provided checklist

Generate & Format

# Step A

Laika Test Library


http://localhost:3000/laika/patient\_data/1046018616

post to del.icio.us my del.icio.us Gmail

Welcome, Andy | Logout

People & Inspections About Feedback

Dashboard **Library**



## David Carter

### CCD/C32 Modules

- Person Information
- Language Spoken
- Support
- HealthCare Provider
- Insurance Provider
- Allergies and Drugs
- Conditions
- Medications
- Pregnancy
- Information Source
- Advance Directive
- Comments
- Vital Signs
- Results
- Immunizations
- Encounters

### Person Information

Name prefix	Mr.
First name	David
Last name	Carter
Name suffix	
Gender	Male
Date of birth	March 17, 1995
Marital status	Never Married
Religion	Roman Catholic Church
Race	Irish
Ethnicity	
Street address	1234 Willow Way
City	Silver Spring
State	MD
Postal code	20902
Country	United States of America
Home phone	+1-301-555-0144

# Step B

FreeMED v0.8.4 - Patient Add - Stock FreeMED Install

http://www.freemed.info/freemed/patient.php?action=addform

post to del.icio.us my del.icio.us Gmail

**FreeMED v0.8.4** System ▾ Main ▾ User ▾ Patients ▾ Notify ▾ [Help](#) Patient Add

Physician	Medical	Notes
<b>Primary Information</b>	Contact	Personal

Salutation

Last Name

First Name

Middle Name

Maiden or Previous Name (if applicable)

Address Line 1

Address Line 2

City, State, Zip

Date of Birth

© 1999-2008 by the FreeMED Software Foundation | User : Demo user |

# Step C

Export the patient record as a C 32

# Step D

The screenshot shows a web browser window titled "Laika Dashboard" with the URL [http://demo.cchit.org/laika/vendor\\_test\\_plans](http://demo.cchit.org/laika/vendor_test_plans). The browser's address bar includes navigation buttons and a search engine dropdown set to "Google". Below the address bar is a "Most Visited" menu with links to MyMII, Google Maps, YouTube, Wikipedia, News, and Popular.

The Laika Dashboard interface features a header with a dog logo and the text "Laika". Navigation links include "News", "People & Inspections", "About", and "Feedback". The main content area displays "Welcome, Rob | Logout" and buttons for "Dashboard" and "Library".

The primary content is for "Laika Inspection ID: 342343-MAP-2007". It includes a table with columns: Status, Test Case, Last Tested, Test Type, Errors, Warnings, and Actions. The first row shows "In progress", "Emily Jones", "11.Jun.2009 03:08 PM CDT", "Generate and Format", "--", "--", and "edit delete execute". An "Export Report" link is also present.


Below the table, there are input fields for "Document Type" (set to "C32") and "Clinical Document" (with a "Browse..." button). An "Attach" button is also visible.

Overlaid on the bottom right is a "File Upload" dialog box. It shows the "Macintosh HD" drive selected in the sidebar. The main pane displays the contents of the drive, including folders like "Applications", "Developer", "Library", "System", "User Guid...formation", and "Users". The "Macintosh HD" folder is currently selected. At the bottom of the dialog, there are "Cancel" and "Open" buttons, and a checkbox for "Hide extension".

At the bottom of the browser window, there is a search bar with the text "Find:" and buttons for "Next", "Previous", and "Highlight all". The status bar at the very bottom shows "Done".

# Step E

Welcome, [Rob](#) | [Logout](#)



**Laika**

[News](#) [People & Inspections](#) [About](#) [Feedback](#)

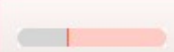
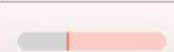
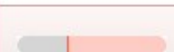
**Dashboard**

**Library**

**FAIL**

**Inspection ID: 342343-MAP-2007**

Test Result Summary

	<b>3</b>	XML Validation Errors
	<b>2</b>	Content Inspection Warnings
	<b>1</b>	UMLS Code Warnings

Test Date: 06.11.2009  
Test Proctor: [Rob McCready](#)  
UMLS Coded: Enabled  
Value Testing

### XML Validation Results

Error Type	Error Message
C32 Schematron Validator	<b>Error: A HITSP/C32 Patient Gender shall be coded using the HL7 AdministrativeGenderCode code system (2.16.840.1.113883.5.1). The codes are: Male (M), Female (F), Undifferentiated (UN). See Section 2.2.1.2.4 rule C32-[32].</b>
CCD Schematron Validator	<b>. A policy activity SHALL contain exactly one Act / participant [ @typeCode="COV"], representing the covered party.</b>
CCD Schematron Validator	<b>. A policy activity SHALL contain exactly one Act / participant [ @typeCode="COV"], representing the covered party.</b>

### Content Inspection Results

Warning Type	Warning Message
Content Inspection	<b>1. Section: registration_information Subsection: person_name Field Name: Error Message: Couldn't find the patient's name</b>
Content Inspection	<b>2. Section: Insurance Provider Subsection: Field Name: Error Message: Invalid, non-parsable XML for Insurance Provider data</b>

### UMLS Code Testing Results

Warning Type	Warning Message
UMLS CodeSystem Validator	<b>1. Code F not found for system 2.16.840.1.113883.5.2</b>

```
Jones
</family>
</name>
```

```
<administrativeGenderCode code="F" displayName="Female" codeSystemName="HL7 AdministrativeGenderCodes"
codeSystem="2.16.840.1.113883.5.2">
```

```
<originalText>
```

AdministrativeGender codes are: M (Male), F (Female) or UN (Undifferentiated).

```
</originalText>
```

```
</administrativeGenderCode>
```

```
<birthTime value="20061101"/>
```

```
<maritalStatusCode code="M" displayName="Married" codeSystemName="MaritalStatusCode"
codeSystem="2.16.840.1.113883.5.2"/>
```

```
<religiousAffiliationCode code="1020" displayName="Hinduism" codeSystemName="Religious Affiliation"
codeSystem="2.16.840.1.113883.5.1076"/>
```

```
<raceCode code="2115-4" displayName="Polish" codeSystemName="CDC Race and Ethnicity"
codeSystem="2.16.840.1.113883.6.238"/>
```

```
<ethnicGroupCode code="2186-5" displayName="Not Hispanic Or Latino" codeSystemName="CDC Race and Ethnicity"
codeSystem="2.16.840.1.113883.6.238"/>
```

```
<languageCommunication>
```

```
<templateId root="2.16.840.1.113883.3.88.11.32.2"/>
```

```
<languageCode code="de-DE"/>
```

```
<modeCode code="RSP" displayName="Received Spoken" codeSystemName="LanguageAbilityMode"
codeSystem="2.16.840.1.113883.5.60"/>
```

```
<preferenceInd value="false"/>
```

```
</languageCommunication>
```

```
</languageCommunication>
```



# Laika C 3 2 D e p l o y e d

- Laika C 3 2 w a s u s e d i n C C H I T ' s 2 0 0 8  
C e r t i f i c a t i o n
- Laika C 3 2 h a s b e e n u s e d b y v a r i o u s F e d e r a l  
H e a l t h A r c h i t e c t u r e f e d e r a l p a r t n e r s
- Laika C 3 2 w a s u s e d t o v a l i d a t e C 3 2  
d o c u m e n t s a t t h e 2 0 0 9 I H E N o r t h A m e r i c a  
C o n n e c t a t h o n

Laika X D S

# X D S

- C r o s s - E n t e r p r i s e D o c u m e n t S h a r i n g
- U s e d f o r m a n a g i n g h e a l t h c a r e d o c u m e n t s  
a c r o s s a h e a l t h e n t e r p r i s e
- D o c u m e n t R e g i s t r y f o r m e t a d a t a
- D o c u m e n t R e p o s i t o r y f o r d o c u m e n t s

# X D S

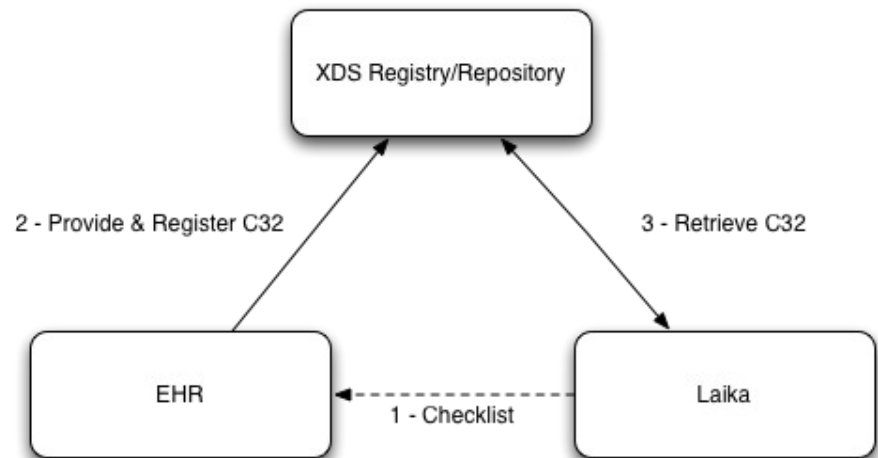
- Based on ebXML
- SOAP web services driven

# Laika XDS

- Allows for push/pull of documents to XDS
  - Provide & Register
  - Query
  - Retrieve
- Uses NIST Open Source XDS Repository
- Can be configured to point to other XDS Repository

# Test: Provide & Register

- Select patient template in Laika
- EHR vendor creates document
- EHR pushes document to XDS
- Laika XDS retrieves and validates document



# Assign: Provide & Register

XDS Registry

http://laikademo.cchit.org/xds\_patients/provide\_and\_register\_setup/110

Welcome, [Rob](#) | [Logout](#)

[ATNA Log](#) [News](#) [People & Inspections](#) [About](#) [Feedback](#)

[Dashboard](#) **XDS** [Library](#)

## Provide and Register C32 based on template for patient David Carter

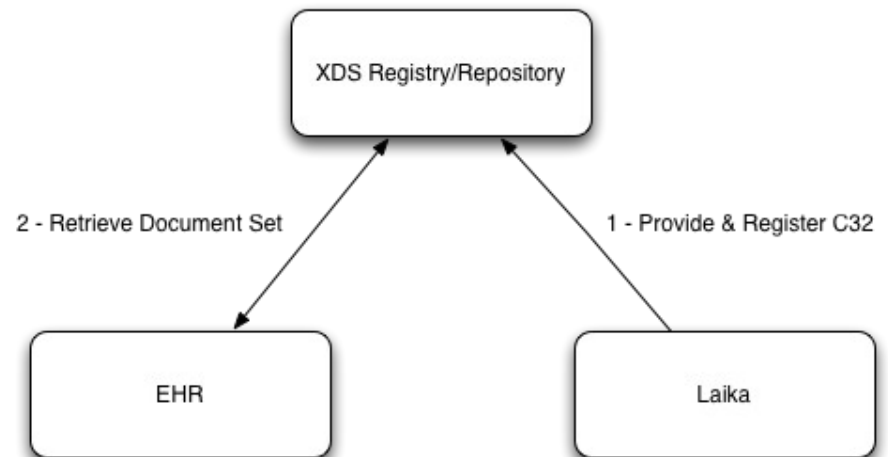
Inspection	Vista_Example
User	Rob McCreedy
Unique Id	1.3.6.1.4.1.21367.2009.5.14.1101465033.1244812731
Class code	Communication
Confidentiality code	Celebrity
Format code	ScanTEXT/IHE 1.x
Healthcare facility type code	Home
Practice setting code	Anesthesia
Type code	Nursing Home Comprehensive Hi:

or [Back](#)

Done

# Test: Query & Retrieve

- Laika pushes C 32 to X D S
- E H R vendor queries for C 32
- Verify vendor retrieved C 32 with Laika checklist







**Laika**

[Dashboard](#)

**XDS**

[Library](#)

### Provide and Register C32 based on template for patient David Carter

Author Person

Author Institution

Author Role

Author Specialty

Class code

Confidentiality code

Format code

Healthcare facility type code

Practice setting code

Type code

or [Back](#)

# Query Repository



Query XDS with  
desired patient ID

The screenshot shows the XDS Registry dashboard. The browser address bar displays `http://laikademo.cchit.org/xds_patients`. The page features a navigation menu with 'Dashboard', 'XDS', and 'Library'. Below the navigation, there is a table titled 'XDS Registry' with columns for Template, Created by, Created on, Last modified, and Actions. The 'Actions' column for the first entry, 'David Carter', has a dropdown menu open showing the selected patient ID 'd274324ec5c845a^^^CCHIT&1.3' and a 'Query XDS' button highlighted with a blue circle.

Template	Created by	Created on	Last modified	Actions	
	David Carter	Amit Trivedi	13.Jan.2008	12.Jun.2009	query   assign   provide and register d274324ec5c845a^^^CCHIT&1.3 <b>Query XDS</b>
	Emily Jones	Harry Sleeper	25.Mar.2007	11.Jun.2009	query   assign   provide and register
	Jennifer Thompson	Dennis Wilson	25.Mar.2004	23.Jun.2005	query   assign   provide and register



Assign a  
Query & Retrieve test  
from available  
documents

The screenshot shows the XDS Registry query results page. The browser address bar displays `http://laikademo.cchit.org/xds_patients/query/`. The page features a navigation menu with 'Dashboard', 'XDS', and 'Library'. Below the navigation, there is a table titled 'XDS Query Results' with columns for Author Name, Format, Document Id, and Creation Time. The 'assign' button is highlighted for each entry.

Author Name	Format	Document Id	Creation Time	
Ben Uphoff	ScanTEXT/IHE 1.x	1.3.6.1.4.1.21367.2009.5.14.1101465033.1243018911	20090522	<b>assign</b>
Shauni Deshmukh	ScanTEXT/IHE 1.x	1.3.6.1.4.1.21367.2009.5.14.1101465033.1244812731	20090612	<b>assign</b>

# Query & Retrieve Checklist

The screenshot shows a web browser window titled "Laika Dashboard" with the URL [http://laikademo.cchit.org/vendor\\_test\\_plans](http://laikademo.cchit.org/vendor_test_plans). The page features a navigation bar with "ATNA Log", "News", "People & Inspections", "About", and "Feedback". A secondary navigation bar includes "Dashboard" (highlighted), "XDS", and "Library". The main content area displays "Laika Inspection ID: Vista\_Example" and a table of inspection records. The table has columns for Status, Test Type, Patient, Errors, Warnings, Last Tested, and Actions. The first row shows a record for "David" with 0 errors and 0 warnings, last tested "1 minute ago", and actions including "query checklist". The second row shows a record for "Carter" with a "checklist" action. An "Export Report" link is located at the bottom right of the table area. The browser's address bar at the bottom shows the URL [http://laikademo.cchit.org/vendor\\_test\\_plans/60/xds\\_query\\_checklist](http://laikademo.cchit.org/vendor_test_plans/60/xds_query_checklist).

Welcome, [Rob](#) | [Logout](#)

[ATNA Log](#) [News](#) [People & Inspections](#) [About](#) [Feedback](#)

[Dashboard](#) [XDS](#) [Library](#)

**Laika Inspection ID: Vista\_Example**

Status	Test Type	Patient	Errors	Warnings	Last Tested	Actions
● in	XDS Query and	David	0 Errors	0 Warnings	1 minute ago	edit   delete   <a href="#">query checklist</a>   document
progress	Retrieve	Carter				checklist

[Export Report](#)

[http://laikademo.cchit.org/vendor\\_test\\_plans/60/xds\\_query\\_checklist](http://laikademo.cchit.org/vendor_test_plans/60/xds_query_checklist)


Laika PIX / PD Q

# PIX and PD Q

- PIX – Patient Identifier Cross Referencing
  - Health IT systems can associate a local patient ID with the affinity domain ID
  - Systems can query to cross reference patients
- PD Q – Patient Demographics Query
  - For when you don't have the patient ID

Test : PIX Feed

# PIX Test: Record Selection



Welcome, [Dennis](#) | [Logout](#)

[ATNA Log](#) [News](#) [People & Inspections](#) [About](#) [Feedback](#)

[Dashboard](#) **[Library](#)** [XDS](#)

## David Carter

[Edit](#)

### CCD/C32 Modules

- [Person Information](#)
- [Languages Spoken](#) [Add](#) [Remove](#)
- [Support](#)
- [Healthcare Provider](#)
- [Insurance Provider](#)
- [Allergy / Drug Sensitivity](#)
- [Conditions](#)
- [Medication](#)
- [Pregnancy](#)
- [Information Source](#)
- [Advance Directive](#)
- [Vital Sign](#)
- [Result](#)
- [Immunization](#)
- [Encounter](#)
- [Procedure](#)

### Person Information (Required)

Document Timestamp	06.Jan.2003
Person Identifier Global	2342342^^^CCHIT&1.3.6.1.5.337675.32234&ISO^PI
Person Identifier Local	2342342^^^ECARE&1.3.6.2.3.326774.32309&ISO^PI
Prefix	Mr.
First Name	David
Last Name	Carter
Suffix	
Gender	Male
Date of Birth	03/02/2000
Marital Status	Annulled
Religion	Paganism
Race	Irish
Ethnicity	Not Hispanic Or Latino
Street Address	1234 Willow Way
City	Silver Spring
State	MD
Postal Code	20902
Country	United States of America
Home Phone	+1-301-555-0144

# PIX Feed Test Dashboard

Welcome, [Rob](#) | [Logout](#)

[ATNA Log](#) [News](#) [People & Inspections](#) [About](#) [Feedback](#)

**Dashboard** XDS Library

### Laika Inspection ID: Vista\_Example

Status	Test Type	Patient	Errors	Warnings	Last Tested	Actions
● failed	PIX Feed	David Carter	0 Errors	0 Warnings	28 minutes ago	<a href="#">edit</a>   <a href="#">delete</a>   <a href="#">inspect</a>
● in progress	PIX Query	David Carter	0 Errors	0 Warnings	15 minutes ago	<a href="#">edit</a>   <a href="#">delete</a>   <a href="#">checklist</a>
● in progress	PIX Feed	David Carter	0 Errors	0 Warnings	less than a minute ago	<a href="#">edit</a>   <a href="#">delete</a>   <a href="#">execute</a>

Local patient identifier

Local assigning authority

[Export Report](#)

Done



# PIX Feed Test Results

Laika Dashboard

http://laikademo.cchit.org/vendor\_test\_plans/57/validatepix

Welcome, [Rob](#) | [Logout](#)

ATNA Log News People & Inspections About Feedback

**Dashboard** XDS Library

**FAIL**

Inspection ID: Vista\_Example

Test Result Summary

- 1 PIX Feed Errors
- 0 PIX Feed Warnings

Test Date 06.12.2009  
Test Proctor [Rob McCreedy](#)

[View HL7 Message Log](#)

### Patient Details In PIX Manager

David Carter	Person Information
Person Identifier Global	d274324ec5c845a^^^CCHIT&1.3.6.1.4.1.21367.2005.3.7&ISO
Person Identifier Local	LocalPID01^^^UPHOFF&1.3.6.1.4.1.21367.2005.3.100&ISO
Person Identifier Expected	d274324ec5c845a^^^CCHIT&1.3.6.1.4.1.21367.2005.3.7&ISO
Prefix	PID123456789^^^CCHIT&1.3.6.1.4.1.21367.2005.3.7&ISO
First name	Mr.
Last name	David
Suffix	Carter
Date of birth	02.Mar.2000
Religion	Paganism
Marital status	Annulled
Gender	Male
Race	Irish
Ethnicity	Not Hispanic Or Latino

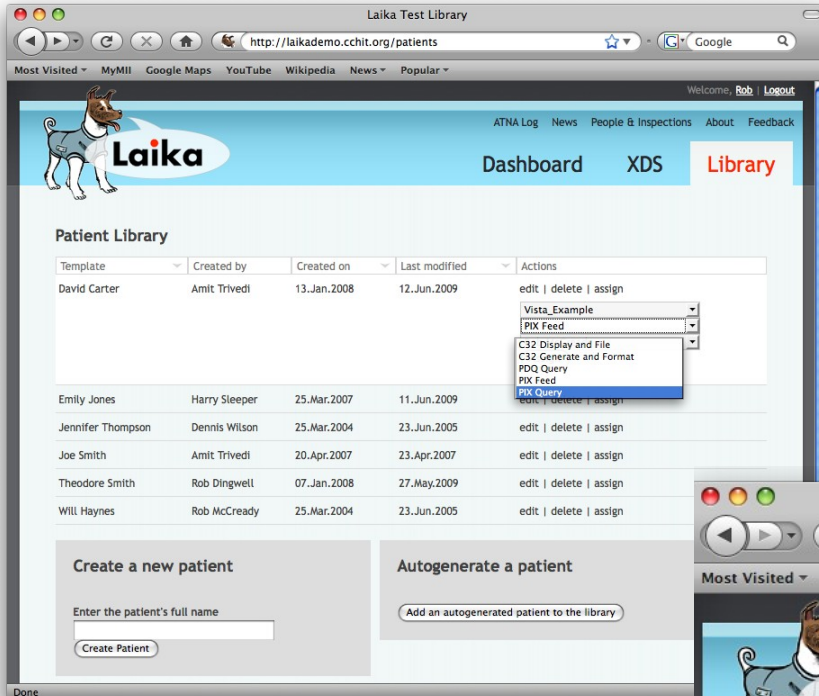
Done

Test: PIX Query

# PIX Query



Select and assign PIX Query test



Laika Test Library

http://laikademo.cchit.org/patients

Welcome, **Rob** | [Logout](#)

ATNA Log News People & Inspections About Feedback

Dashboard XDS **Library**

### Patient Library

Template	Created by	Created on	Last modified	Actions
				edit   delete   assign
David Carter	Amit Trivedi	13.Jan.2008	12.Jun.2009	edit   delete   assign
Emily Jones	Harry Sleeper	25.Mar.2007	11.Jun.2009	edit   delete   assign
Jennifer Thompson	Dennis Wilson	25.Mar.2004	23.Jun.2005	edit   delete   assign
Joe Smith	Amit Trivedi	20.Apr.2007	23.Apr.2007	edit   delete   assign
Theodore Smith	Rob Dingwell	07.Jan.2008	27.May.2009	edit   delete   assign
Will Haynes	Rob McCready	25.Mar.2004	23.Jun.2005	edit   delete   assign

**Create a new patient**

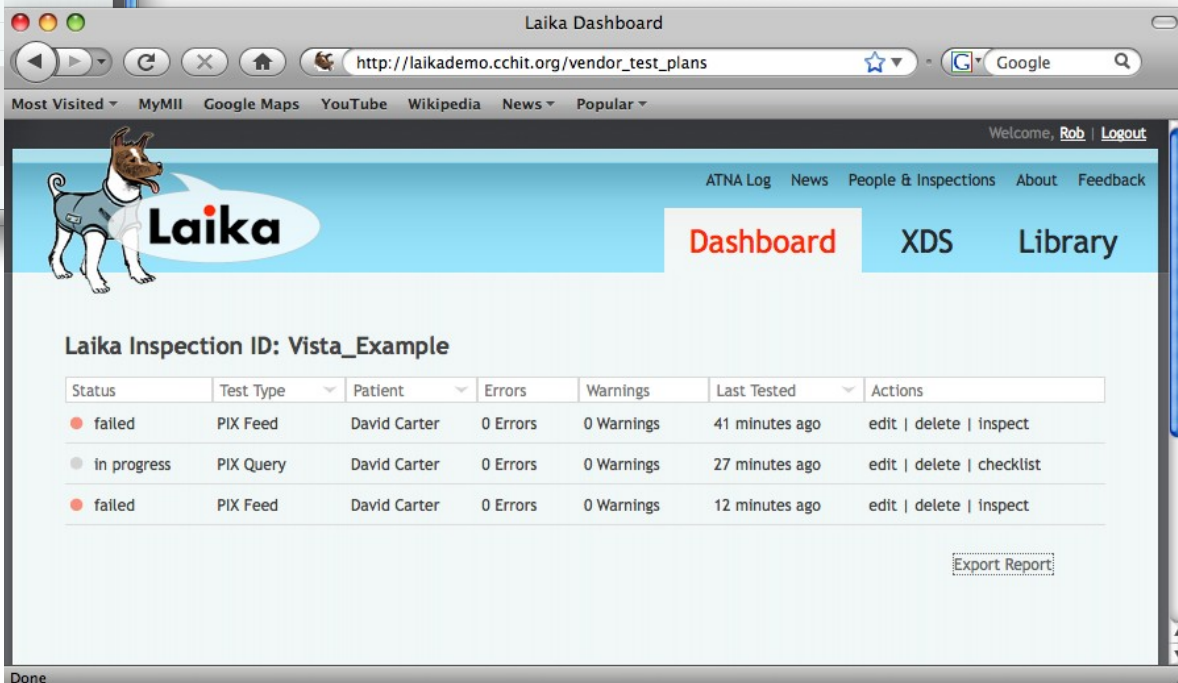
Enter the patient's full name

**Autogenerate a patient**



Select checklist from Dashboard



Laika Dashboard

http://laikademo.cchit.org/vendor\_test\_plans

Welcome, **Rob** | [Logout](#)

ATNA Log News People & Inspections About Feedback

Dashboard **XDS** Library

### Laika Inspection ID: Vista\_Example

Status	Test Type	Patient	Errors	Warnings	Last Tested	Actions
failed	PIX Feed	David Carter	0 Errors	0 Warnings	41 minutes ago	edit   delete   inspect
in progress	PIX Query	David Carter	0 Errors	0 Warnings	27 minutes ago	edit   delete   checklist
failed	PIX Feed	David Carter	0 Errors	0 Warnings	12 minutes ago	edit   delete   inspect

[Export Report](#)

# PIX Query Checklist

The screenshot shows a web browser window titled "Laika Dashboard" with the URL [http://laikademo.cchit.org/vendor\\_test\\_plans/56/validatepix](http://laikademo.cchit.org/vendor_test_plans/56/validatepix). The page features a navigation bar with "ATNA Log", "News", "People & Inspections", "About", and "Feedback". A user is logged in as "Rob" with a "Logout" link. The main content area is divided into two sections: "Assign Result" and "Patient Details In PIX Manager".

**Assign Result**

Inspection ID: Vista\_Example

Test Result

FAIL

Assign

Test Date: 06.12.2009

Test Proctor: Rob McCready

[View HL7 Message Log](#)

**Patient Details In PIX Manager**

**David Carter**      **Person Information**

Person Identifier Global	d274324ec5c845a^^^CCHIT&1.3.6.1.4.1.21367.2005.3.7&ISO
Person Identifier Local	LocalPID01^^^UPHOFF&1.3.6.1.4.1.21367.2005.3.100&ISO
	d274324ec5c845a^^^CCHIT&1.3.6.1.4.1.21367.2005.3.7&ISO
Prefix	Mr.
First name	David
Last name	Carter
Suffix	
Date of birth	02.Mar.2000
Religion	Paganism
Marital status	Annulled
Gender	Male
Race	Irish
Ethnicity	Not Hispanic Or Latino

Test: PD Q Query

# PD Q Query Checklist

The screenshot shows a web browser window titled "Laika Dashboard" with the URL [http://laikademo.cchit.org/vendor\\_test\\_plans/58/validatepix](http://laikademo.cchit.org/vendor_test_plans/58/validatepix). The browser's address bar includes navigation buttons and a search engine (Google). The page header features a navigation menu with "ATNA Log", "News", "People & Inspections", "About", and "Feedback". A secondary menu contains "Dashboard" (highlighted), "XDS", and "Library". The main content area is divided into two sections:

**Assign Result**

Inspection ID: Vista\_Example

Test Result

FAIL

Assign

Test Date: 06.12.2009

Test Proctor: [Rob McCready](#)

[View HL7 Message Log](#)

**Patient Details In PIX Manager**

**David Carter**      **Person Information**

Person Identifier Global	d274324ec5c845a^^^CCHIT&1.3.6.1.4.1.21367.2005.3.7&ISO
Person Identifier Local	LocalPID01^^^UPHOFF&1.3.6.1.4.1.21367.2005.3.100&ISO
	d274324ec5c845a^^^CCHIT&1.3.6.1.4.1.21367.2005.3.7&ISO
Prefix	Mr.
First name	David
Last name	Carter
Suffix	
Date of birth	02.Mar.2000
Religion	Paganism
Marital status	Annulled
Gender	Male
Race	Irish
Ethnicity	Not Hispanic Or Latino

Done

# Laika in the Clouds

Deploying on Amazon AWS

# A m a z o n W e b S e r v i c e s



- O n d e m a n d , r e n t a b l e c o m p u t i n g r e s o u r c e s
- S3 - S t o r a g e b y t h e G B / m o n t h
  - \$ 0 . 1 5 p e r G B - m o n t h
- E C 2 - V i r t u a l c o m p u t e r s b y t h e h o u r
  - \$ 0 . 1 0 p e r i n s t a n c e - h o u r
- R u n e n t i r e L a i k a s u i t e f r o m s u p p l i e d A m a z o n M a c h i n e I m a g e ( A M I )



# Get Started with Laika

Live Web Apps:

- 08 Certification Version: <http://demo.cchit.org/laika>
- Latest stable dev build: <http://laikademo.cchit.org>

Running your own instance:

- Laika A M I
- Get the code: <http://github.com/CCHIT/laika/>

Laika is a Community Effort



# Laika Roadmap

June: Laika AMI published so that vendors can begin 09 practice

July: Enhanced XDS view for NIST Registry  
Consolidated packaging and polished install instructions

August: CCHIT 09 Certification Opens – Laika 2.0 Released

September: XDS Based HIE Testing

# Laiika

Thanks!

Questions:

<http://projectlaika.org>

talk@projectlaika.org



# Backups

W h a t d o e s a C 3 2 l o o k  
l i k e ?

```
<component>
<section>
  <templateId root="2.16.840.1.113883.10.20.1.16"/> <!-- Vital signs section template -->
  <code code="8716-3" codeSystem="2.16.840.1.113883.6.1"/>
  <title>Vital Signs</title>
  <text>
    <table border="1" width="100%">
      <thead>
        <tr><th>&#160;</th><th>July 9, 2008</th></tr>
      </thead>
      <tbody>
        <tr><td>Circumference.occipital-frontal</td><td>43 cm</td></tr>
      </tbody>
    </table>
  </text>
```

## Section Identification

```
<component>
<section>
  <templateId root="2.16.840.1.113883.10.20.1.16"/> <!-- Vital signs section template -->
  <code code="8716-3" codeSystem="2.16.840.1.113883.6.1"/>
  <title>Vital Signs</title>
  <text>
    <table border="1" width="100%">
      <thead>
        <tr><th>&#160;</th><th>July 9, 2008</th></tr>
      </thead>
      <tbody>
        <tr><td>Circumference.occipital-frontal</td><td>43 cm</td></tr>
      </tbody>
    </table>
  </text>
```



```
<component>
<section>
  <templateId root="2.16.840.1.113883.10.20.1.16"/> <!-- Vital signs section template -->
  <code code="8716-3" codeSystem="2.16.840.1.113883.6.1"/>
  <title>Vital Signs</title>
  <text>
    <table border="1" width="100%">
      <thead>
        <tr><th>&#160;</th><th>July 9, 2008</th></tr>
      </thead>
      <tbody>
        <tr><td>Circumference occipital-frontal</td><td>43 cm</td></tr>
      </tbody>
    </table>
  </text>
```

Narrative Block

## `<entry typeCode="DRIV">` Coded Information Container

```
<organizer classCode="CLUSTER" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.1.35"/> <!-- Vital signs organizer template -->
  <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
  <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
    displayName="Vital signs"/>
  <statusCode code="completed"/>
  <effectiveTime value="200807091430"/>
  <component>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.1.31"/> <!-- Result observation template -->
      <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
      <code code="8287-5" codeSystem="2.16.840.1.113883.6.1"
        displayName="Circumference.occipital-frontal"/>
      <statusCode code="completed"/>
      <value xsi:type="PQ" value="43" unit="cm"/>
    </observation>
  </component>
</organizer>
</entry>
```

## Organizer

```
<entry typeCode="DRIV">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.35"/> <!-- Vital signs organizer template -->
    <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
    <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
      displayName="Vital signs"/>
    <statusCode code="completed"/>
    <effectiveTime value="200807091430"/>
    <component>
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.1.31"/> <!-- Result observation template -->
        <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
        <code code="8287-5" codeSystem="2.16.840.1.113883.6.1"
          displayName="Circumference.occipital-frontal"/>
        <statusCode code="completed"/>
        <value xsi:type="PQ" value="43" unit="cm"/>
      </observation>
    </component>
  </organizer>
</entry>
```

```
<entry typeCode="DRIV">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.35"/> <!-- Vital signs organizer template -->
    <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
    <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
          displayName="Vital signs"/>
    <statusCode code="completed"/>
    <effectiveTime value="200807091430"/>
    <component>
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.1.31"/> <!-- Result observation template -->
        <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
        <code code="8287-5" codeSystem="2.16.840.1.113883.6.1"
              displayName="Circumference.occipital-frontal"/>
        <statusCode code="completed"/>
        <value xsi:type="PQ" value="43" unit="cm"/>
      </observation>
    </component>
  </organizer>
</entry>
```

Date and Status

```

<entry typeCode="DRIV">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.35"/> <!-- Vital signs organizer template -->
    <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
    <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
      displayName="Vital signs"/>
    <statusCode code="completed"/>
    <effectiveTime value="200807091430"/>
    <component>
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.1.31"/> <!-- Result observation template -->
        <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
        <code code="8287-5" codeSystem="2.16.840.1.113883.6.1"
          displayName="Circumference.occipital-frontal"/>
        <statusCode code="completed"/>
        <value xsi:type="PQ" value="43" unit="cm"/>
      </observation>
    </component>
  </organizer>
</entry>

```

Observation

```
<entry typeCode="DRIV">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.35"/> <!-- Vital signs organizer template -->
    <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
    <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
      displayName="Vital signs"/>
    <statusCode code="completed"/>
    <effectiveTime value="200807091430"/>
    <component>
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.1.31"/> <!-- Result observation template -->
        <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
        <code code="8287-5" codeSystem="2.16.840.1.113883.6.1" ID
          displayName="Circumference.occipital-frontal"/>
        <statusCode code="completed"/>
        <value xsi:type="PQ" value="43" unit="cm"/>
      </observation>
    </component>
  </organizer>
</entry>
```

```
<entry typeCode="DRIV">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.35"/> <!-- Vital signs organizer template -->
    <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
    <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
      displayName="Vital signs"/>
    <statusCode code="completed"/>
    <effectiveTime value="200807091430"/>
    <component>
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.1.31"/> <!-- Result observation template -->
        <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
        <code code="8287-5" codeSystem="2.16.840.1.113883.6.1"
          displayName="Circumference.occipital-frontal"/>
        <statusCode code="completed"/>
        <value xsi:type="PQ" value="43" unit="cm"/>
      </observation>
    </component>
  </organizer>
</entry>
```

Code

```
<entry typeCode="DRIV">
  <organizer classCode="CLUSTER" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.35"/> <!-- Vital signs organizer template -->
    <id root="c6f88320-67ad-11db-bd13-0800200c9a66"/>
    <code code="46680005" codeSystem="2.16.840.1.113883.6.96"
      displayName="Vital signs"/>
    <statusCode code="completed"/>
    <effectiveTime value="200807091430"/>
    <component>
      <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.1.31"/> <!-- Result observation template -->
        <id root="c6f88321-67ad-11db-bd13-0800200c9a66"/>
        <code code="8287-5" codeSystem="2.16.840.1.113883.6.1"
          displayName="Circumference.occipital-frontal"/>
        <statusCode code="completed"/>
        <value xsi:type="PQ" value="43" unit="cm"/>
      </observation>
    </component>
  </organizer>
</entry>
```

Value



# C 3 2 X M L I n s p e c t i o n

- X M L S c h e m a
- S c h e m a t r o n
- C o n t e n t I n s p e c t i o n
- M a k e s u r e t h e c l i n i c a l d a t a i s c o r r e c t