



MANUAL

How to use the CDC Health Survey Web App

[Summary](#)

This document would walk you through on how to quickly start using the health survey within a smart on FHIR sandbox, this document would also include diagrams and database schemas for the Health Survey App

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CDC-Population-Health-Informatics-Framework Health Survey Web App Manual

Introduction

EHRs and other health information technology offer opportunities to advance chronic disease management and prevention. EHRs and other HIT systems store and exchange data in different ways, that limits the ability to have applications and services that can be used in multiple settings.

There is a need for national standard framework for data and technical transactions, and a sense for how all these systems fit together. For this reason, the CDC Center for Chronic Disease Prevention and Health Promotion is developing a Population Health Informatics Framework. Our team developed a SMART on FHIR patient facing app module that would allow a patient to complete a survey and the HAPI FHIR server back end can store these responses into a questionnaire response resource in real time.

Project Details

Project Name

CDC-Population-Health-Informatics-Framework

GitHub Link

<https://github.gatech.edu/gt-hit-fall2016/CDC-Population-Health-Informatics-Framework>

Team Name

FLO Rider

Team Member

Kevin Hall, Xiqian Han, Eloin Porras

How to use our App

System Requirement

An Internet enabled computer

The app supports the following Web Browsers:

- Chrome
- Firefox
- Internet Explorer
- Safari

Launch our apps through the Smart on FHIR public sand box

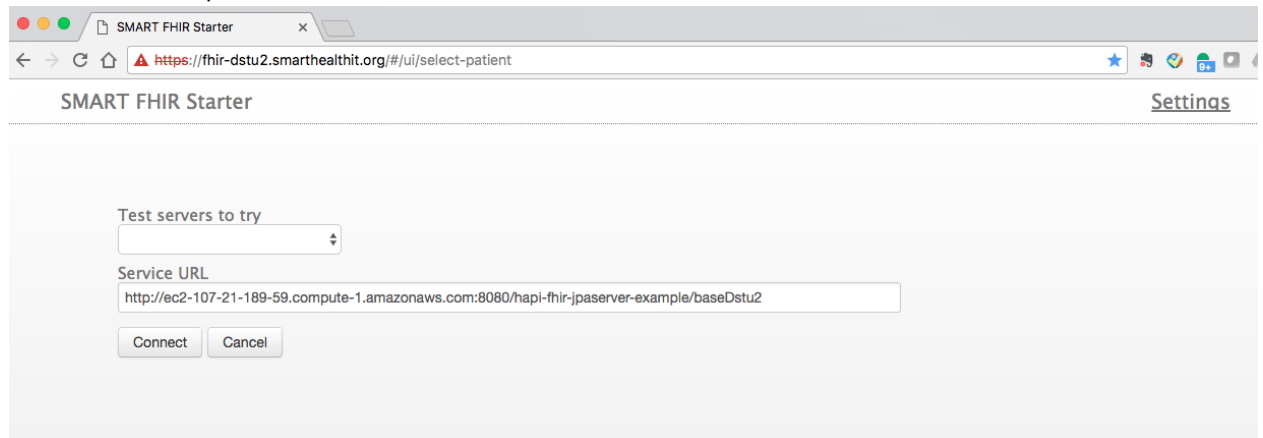
1. Sign into the sandbox at <https://fhir-dstu2.smarthealthit.org/>, either by creating your own account or by using our demo account (**Username:** florider, **Password:** lexihan).



Please sign in above to get started

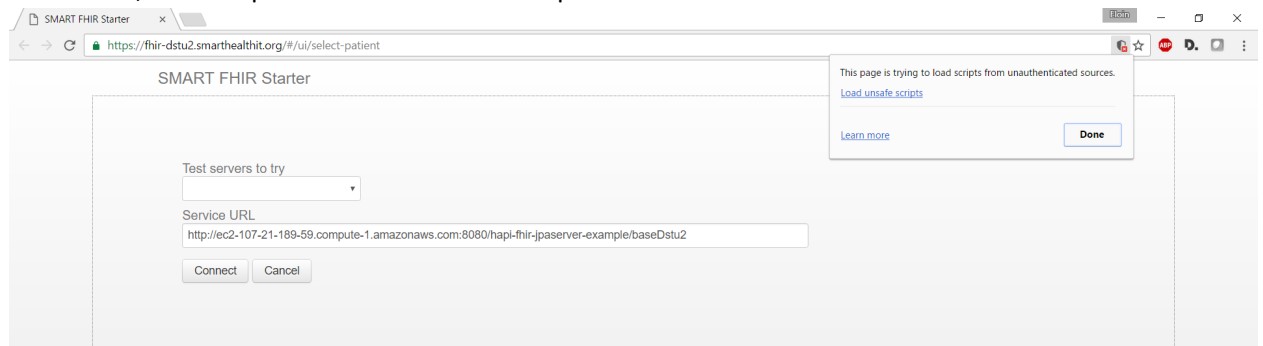
- Click the **setting** and replace your Service URL with the following
<http://ec2-107-21-189-59.compute-1.amazonaws.com:8080/hapi-fhir-jpaserver-example/baseDstu2>

As shown in the picture below



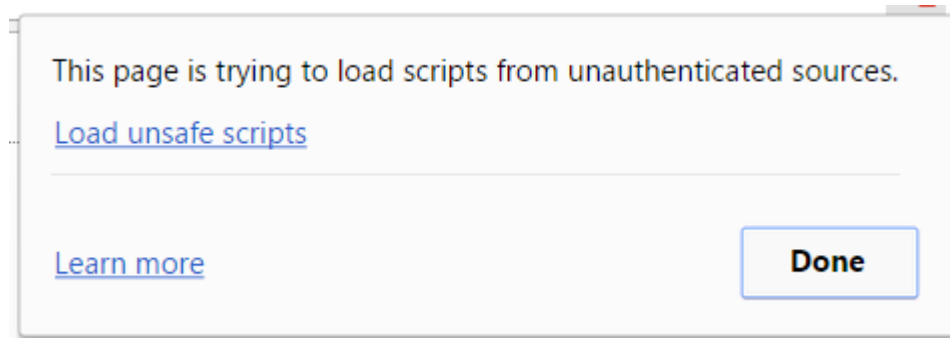
© Harvard Medical School / Boston Children's Hospital, 2015

- The test server we have setup uses normal HTTP and since the sandbox uses HTTPS, you will encounter a mixed content error. You must disable browser page protection to run against our test server, an example of how to disable this protection is shown below in Chrome



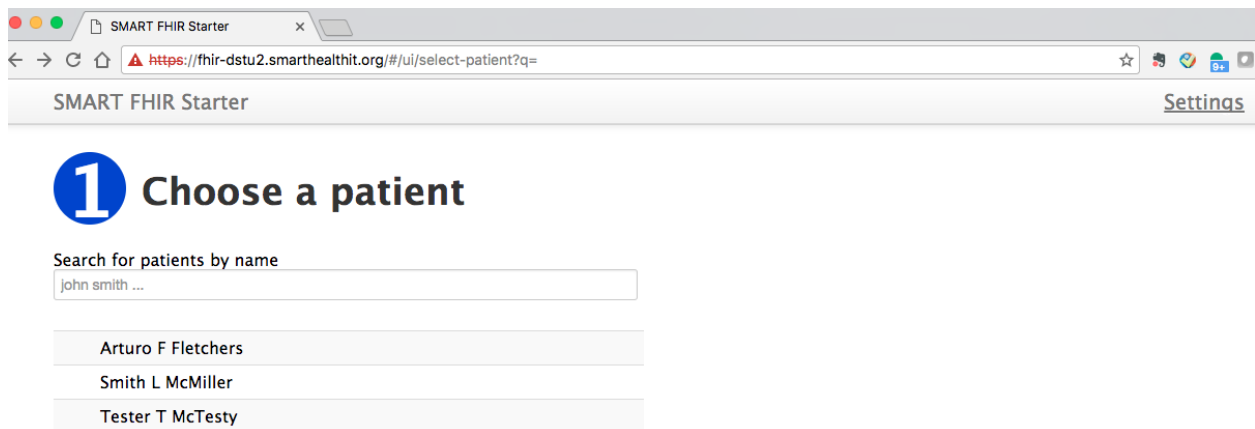
© Harvard Medical School / Boston Children's Hospital, 2015





4. Click on **"Load unsafe scripts"** and then click **"Connect"**

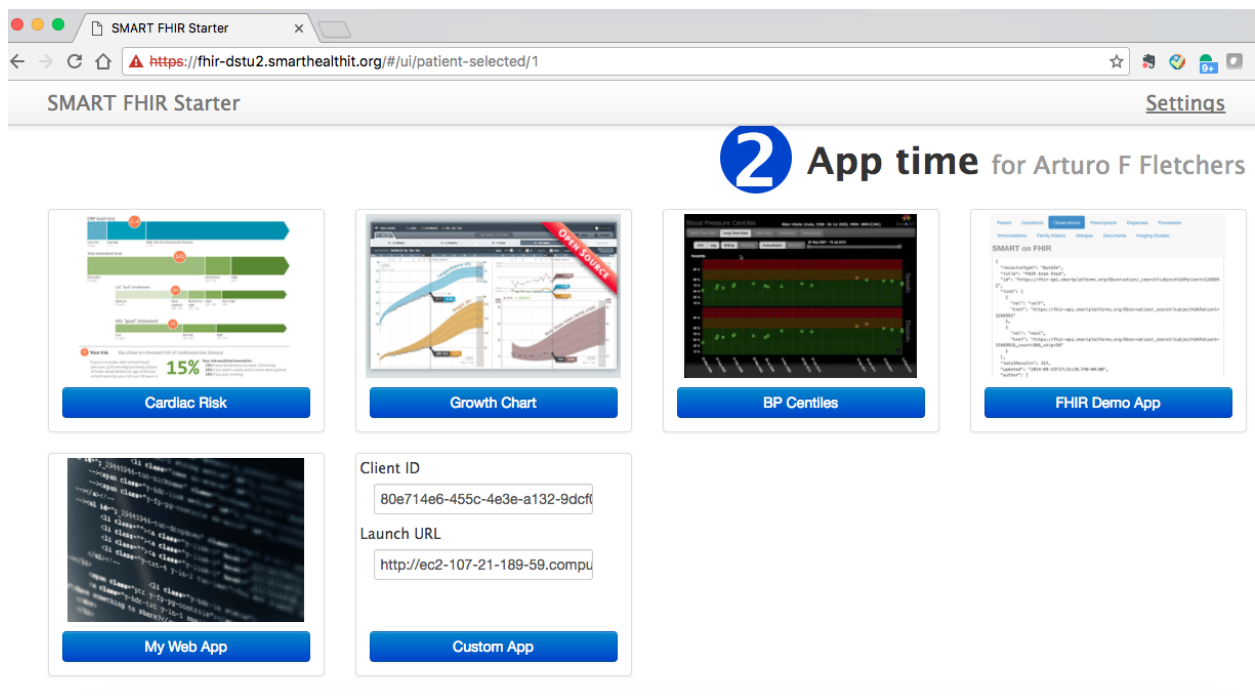
5. Select a **patient**, such as Smith L McMiller.



The screenshot shows a web browser window with the title "SMART FHIR Starter". The address bar displays the URL <https://fhir-dstu2.smarthealthit.org/#/ui/select-patient?q=>. The page header includes "SMART FHIR Starter" and a "Settings" link. The main content area features a large blue circle with the number "1" followed by the heading "Choose a patient". Below this, there is a search bar labeled "Search for patients by name" containing the text "john smith ...". A list of three patients is displayed: "Arturo F Fletchers", "Smith L McMiller", and "Tester T McTesty".

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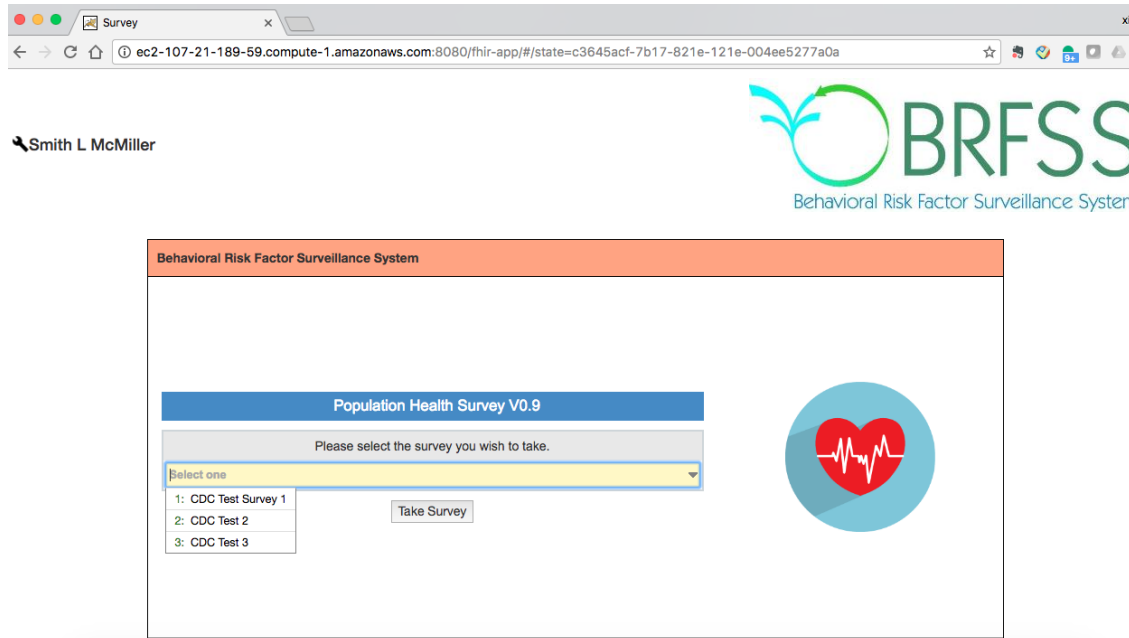
6. Then you can launch the "The Custom App" by inputting the following credentials for our app
Client ID: 80e714e6-455c-4e3e-a132-9dcf0e90db08
Launch URL: <http://ec2-107-21-189-59.compute-1.amazonaws.com:8080/fhir-app/launch2.html>
7. Click the "**Custom App**" to launch the app



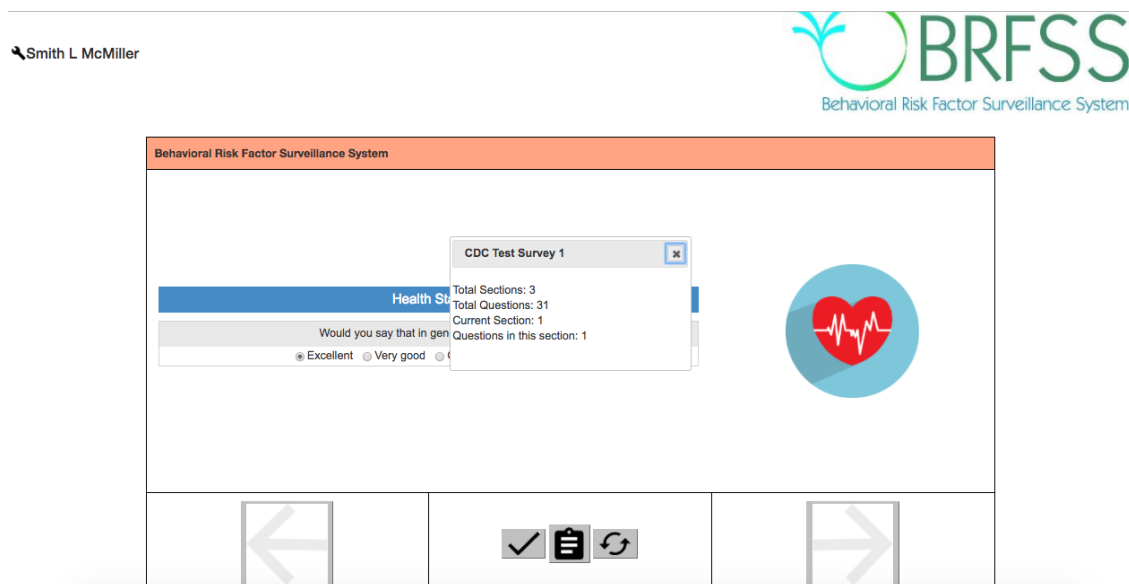
The screenshot shows the "SMART FHIR Starter" web application at the URL <https://fhir-dstu2.smarthealthit.org/#/ui/patient-selected/1>. The page header includes "SMART FHIR Starter" and a "Settings" link. The main content area features a large blue circle with the number "2" followed by the heading "App time for Arturo F Fletchers". Below this, there are six app tiles: "Cardiac Risk", "Growth Chart", "BP Centiles", "FHIR Demo App", "My Web App", and "Custom App". The "Custom App" tile is highlighted with a blue button. Below the tiles, there are input fields for "Client ID" (80e714e6-455c-4e3e-a132-9dcf0e90db08) and "Launch URL" (<http://ec2-107-21-189-59.compute-1.amazonaws.com:8080/fhir-app/launch2.html>), followed by a blue "Custom App" button.

Conducting a Health Survey and submitting the survey

1. Once you launch the app, it will **display** the welcome page of the survey. As shown in picture below, you can choose **CDC Test Survey 1** and it will load the survey questions.



2. You can use the **clipboard** (middle button) to check the status of your survey. Once you finish one section, you can use the **arrow buttons** to proceed to the previous/next section. If there are no more questions when proceeding to the next section, you have the option to **submit** the survey or review your answers. When the survey is **submitted**, the Questionnaire Response representing the survey will be automatically stored at the HAPI FHIR server.



Fetch the Survey Results from HAPI FHIR server

1. You can visit our fully deploy HAPI FHIR server by visiting the following URL:
<http://ec2-107-21-189-59.compute-1.amazonaws.com:8080/hapi-fhir-jpaserver-example/home?encoding=null&pretty=true>

The screenshot shows the HAPI FHIR server home page. The browser address bar displays the URL: `ec2-107-21-189-59.compute-1.amazonaws.com:8080/hapi-fhir-jpaserver-example/`. The page has a dark header with a 'Home' link and navigation links for 'Server: Local Tester', 'Source Code', and 'About This Server'.

Options

Encoding: (default) | XML | JSON
Pretty: (default) | On | Off
Summary: (none) | true | text | data | count

Server

Server Home/Actions

Resources

- QuestionnaireResponse (10)
- Patient (3)
- Account
- AllergyIntolerance
- Appointment
- AppointmentResponse
- AuditEvent
- Basic
- Binary
- BodySite
- Bundle

HAPI FHIR
fhir made simple.

This is the home for the FHIR test server operated by University Health Network. This server (and the testing application you are currently using to access it) is entirely built using HAPI-FHIR, a 100% open-source Java implementation of the FHIR specification.

Here are some things you might wish to try:

- View a list of patients on this server.
- Construct a search query on this server.
- Access a different server (use the **Server** menu at the top of the page to see a list of public FHIR servers)

⚠ This is not a production server! Do not store any information here that contains personal health information or any other confidential information. The server will be regularly purged and reloaded with fixed test data.

Server	Example Server
Software	HAPI FHIR Server - 2.1-SNAPSHOT
FHIR Base	http://ec2-107-21-189-59.compute-1.amazonaws.com:8080/hapi-fhir-jpaserver-example/baseDstu2

Server Actions

Retrieve the server's **conformance** statement.

[Conformance](#)

Retrieve the update **history** across all resource types on the server.

[History](#)

- You might have noticed there are currently three test patients in our server and several questionnaire responses. As shown below, you can fetch specific patient's response or all of them.

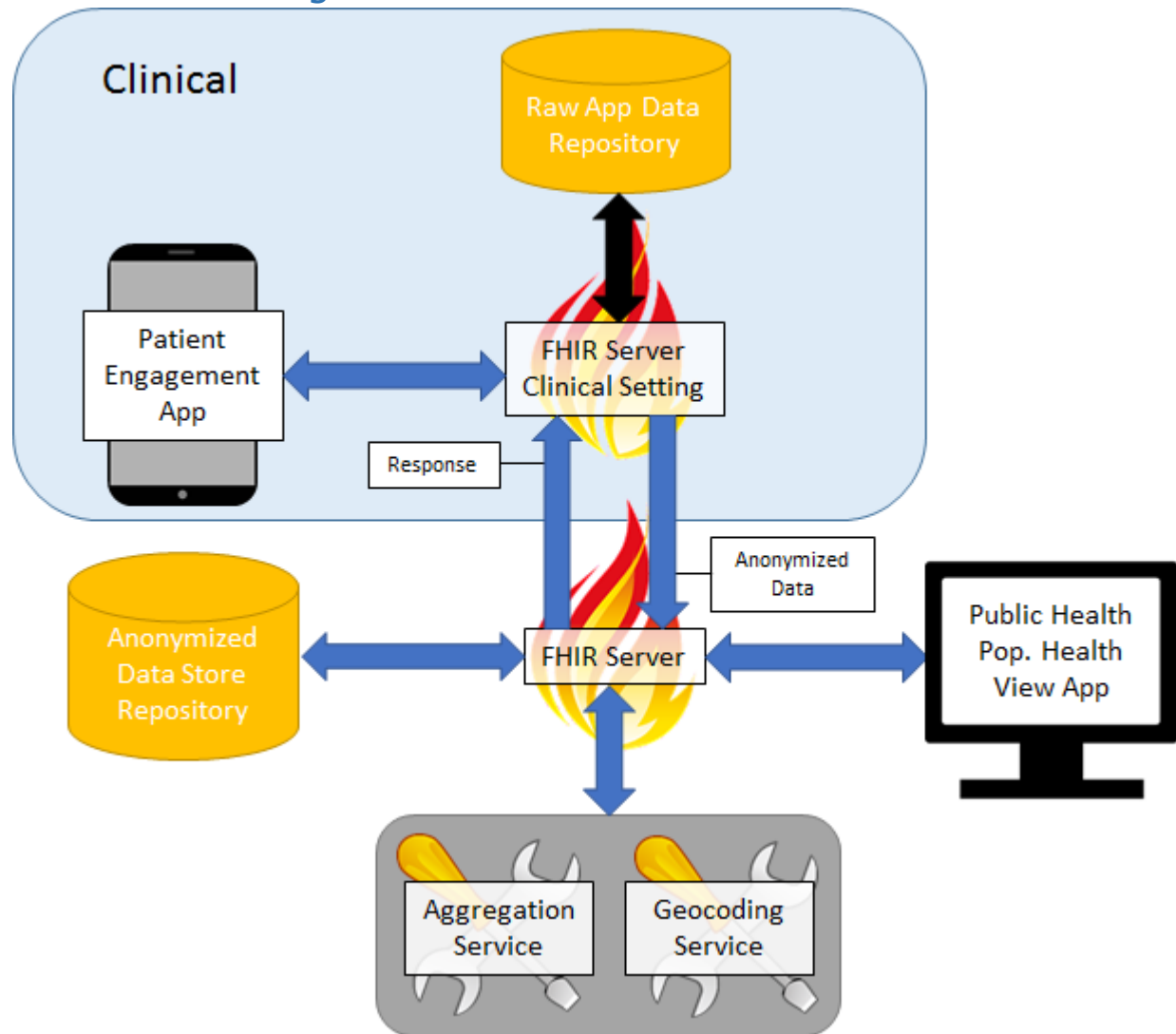
The screenshot shows the HAPI FHIR web interface. The browser address bar displays the URL: `ec2-107-21-189-59.compute-1.amazonaws.com:8080/hapi-fhir-jpaserver-example/search?serverId=home&pretty=true&resource=QuestionnaireResponse`. The interface includes a sidebar with navigation links: Home, QuestionnaireResponse, Search for Resources, Server, Resources, Patient, Account, Allergy/Intolerance, Appointment, AppointmentResponse, AuditEvent, Basic, Binary, and BodySite. The main content area shows the search results for QuestionnaireResponse resources. The response headers indicate a 200 OK status. The result body is a JSON bundle containing 10 entries. The table below lists the resources found:

ID	Title	Updated
QuestionnaireResponse/4952		2016-11-30
QuestionnaireResponse/4953		2016-11-30
QuestionnaireResponse/4954		2016-11-30
QuestionnaireResponse/4955		2016-11-30
QuestionnaireResponse/4956		2016-11-30
QuestionnaireResponse/4957		2016-11-30
QuestionnaireResponse/4958		2016-11-30
QuestionnaireResponse/4959		2016-11-30
QuestionnaireResponse/4960		2016-11-30
QuestionnaireResponse/4961		2016-12-01

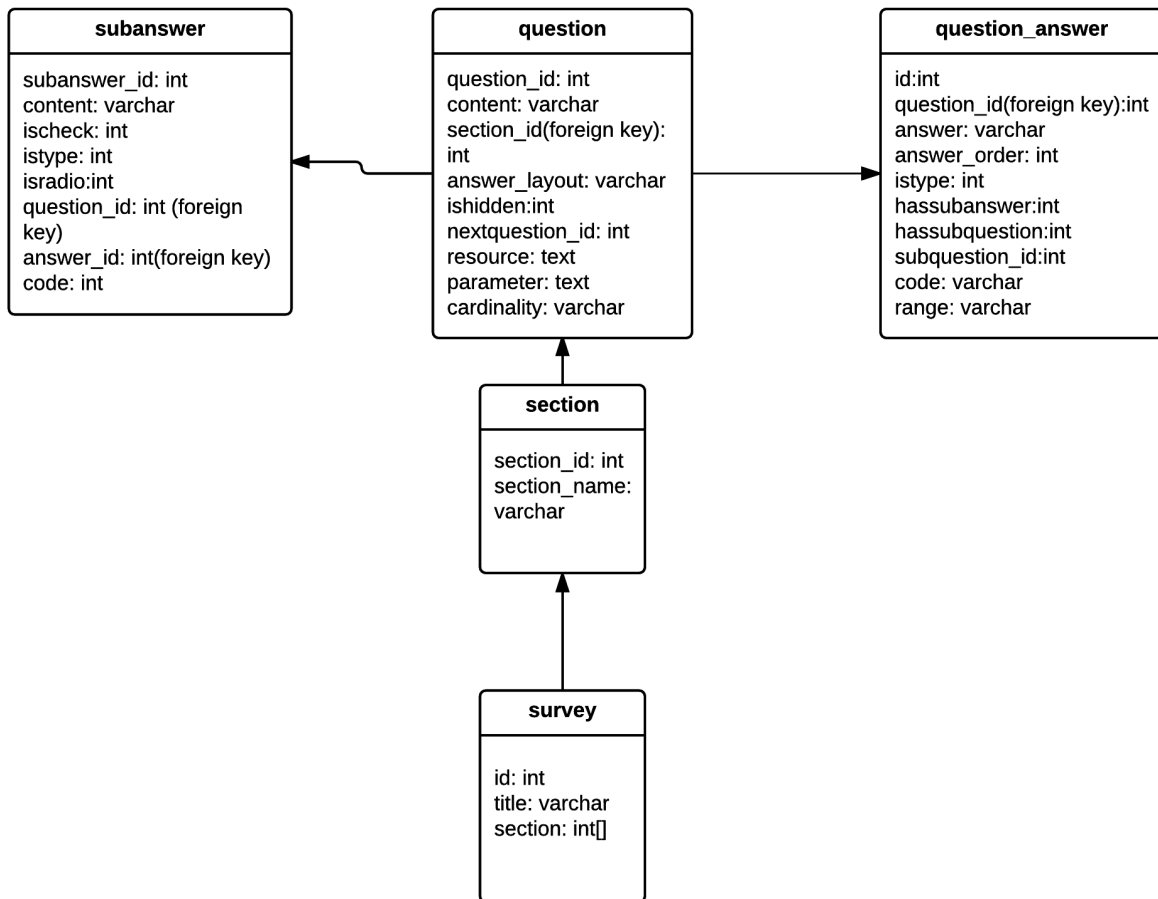
The raw message shows the JSON structure of the bundle:

```
{
  "resourceType": "Bundle",
  "id": "4962283-6318-403f-8194-ea80bf2cb10",
  "meta": {
    "lastUpdated": "2016-12-04T01:30:14.686+00:00"
  },
  "type": "searchset",
  "total": 10,
  "link": {
    "relation": "first"
  }
}
```

Architectural Diagram



Database Schema



Reference

1. <http://docs.smarthealthit.org/>
2. <http://www.cdc.gov/brfss/>