

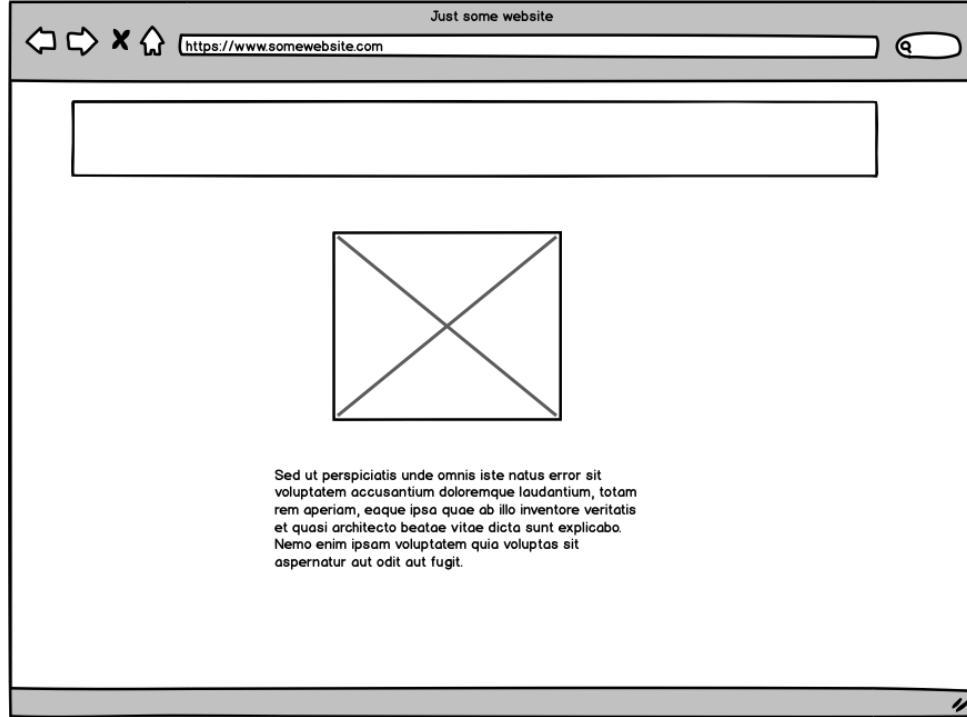
Lessons Learned from Blue Button 2.0 Implementation





THE U.S. DIGITAL SERVICE

What is an API?



<https://api.somewebsite.com/v1/20140000008325>

```

{
  "fullUrl": "https://sandbox.bluebutton.cms.gov/v1/fhir/ExplanationOfBenefit/carrier-22011027731",
  "resource": {
    "resourceType": "ExplanationOfBenefit",
    "id": "carrier-22011027731",
    "contained": [
      {
        "resourceType": "ReferralRequest",
        "id": "1",
        "status": "completed",
        "subject": {
          "reference": "Patient/20140000008325"
        },
        "requester": {
          "agent": {
            "identifier": {
              "system": "http://hl7.org/fhir/sid/us-npi",
              "value": "999999999999"
            }
          }
        },
        "recipient": [
          {
            "identifier": {
              "system": "http://hl7.org/fhir/sid/us-npi",
              "value": "999999999999"
            }
          }
        ]
      }
    ],
    "extension": [
      {
        "url": "https://bluebutton.cms.gov/resources/variables/carr_num",
        "valueIdentifier": {
          "system": "https://bluebutton.cms.gov/resources/variables/carr_num",
          "value": "99999"
        }
      },
      {
        "url": "https://bluebutton.cms.gov/resources/variables/carr_clm_pmt_dnl_cd",
        "value": "1"
      }
    ]
  }
}

```

Types of APIs

- Open Data
- Perform a task
- User grants access to their data

Drug AMP Reporting - Monthly

[Drug Pricing and Payment](#)[View Data](#)[Visualize](#) ▼[Export](#)[API](#)[...](#)

Drugs that have been reported under the Medicaid Drug Rebate Program along with the Manufacturer Price (AMP) was reported for each drug. All drugs are identified by labeler name, and reported (R) or not reported (NR).

Access this Dataset via SODA API



The Socrata Open Data API (SODA) provides programmatic access to this dataset including the ability to filter, query, and aggregate data.

[API Docs](#)[Developer Portal](#)

API Endpoint

<https://data.medicaid.gov/resource/8umv-dujr>[JSON](#)[Copy](#)

About this Dataset

Updated

December 7, 2018

Data Last Updated
December 7, 2018

Metadata Last Updated
December 7, 2018

Date Created

Common Core

Program Code	009:076
Bureau Code	009:00

Topics

[Overview](#)[Get Started](#)[Get API Key](#)[Tutorials](#)[Adding a Map with a Marker](#)[Select Current Place](#)[Creating a Map](#)[Map Objects](#)[Businesses and Other Points of Interest](#)[Street View](#)[Launch Google Maps](#)[Styling your Map](#)[Quick Map Styling - Night Mode](#)[Hiding Map Features with Styling](#)[Style Reference](#)[Interacting with the Map](#)[Controls and Gestures](#)

The below example adds a map, centered at downtown Singapore, to an app.

[SWIFT](#)[OBJECTIVE-C](#)

```
import UIKit
import GoogleMaps

class DemoViewController: UIViewController {
    override func loadView() {
        let camera = GMSCameraPosition.camera(withLatitude: 1.285, longitude: 103.847)
        let mapView = GMSMapView.map(withFrame: .zero, camera: camera)
        self.view = mapView
    }
}
```

Once you've followed these steps, you may further configure the `GMSMapView` object.

Map Types



You can customize your map with one of several map types. A map's type governs the overall representation of the map. For example, an atlas usually contains **political** maps that focus on showing boundaries, and **road** maps that show all of the roads for



Cloud Text-to-Speech API

[Product Overview](#)[Documentation](#)

Quickstarts

[All Quickstarts](#)[Using Client Libraries](#)[Using the Command Line](#)

How-to Guides

[All How-to Guides](#)[Using Device Profiles](#)[Creating Voice Audio Files](#)[Listing All Supported Voices](#)[Decoding Base64-Encoded Audio Content](#)

Reference

[All APIs & References](#)

Cloud Text-to-Speech API

Cloud Text-to-Speech API Documentation

[SEND FEEDBACK](#)

Cloud Text-to-Speech API converts text or Speech Synthesis Markup Language (SSML) input into audio data of natural human speech.



Quickstart

[Learn in 5 minutes](#)

How-to Guides

[Perform specific tasks](#)

APIs & Reference

[REST and gRPC Reference](#)

Concepts

[Develop a deep understanding of Text-to-Speech API](#)



Programmable SMS

Getting Started

[How to Work with your Free Twilio Trial Account](#)[PHP Quickstart](#)[.NET Framework Quickstart](#)[.NET Core Quickstart](#)[Java Quickstart](#)[Node.js Quickstart](#)[Ruby Quickstart](#)[Python Quickstart](#)

API Reference

[API Overview](#)[Message Resource](#)[MessageFeedback Resource](#)[Media Resource](#)[Service Resource](#)[PhoneNumber Resource](#)

Programmable SMS

Twilio makes sending and receiving SMS easy. Find the documentation, sample code, and developer tools you need to build exactly what you want, fast. We'll handle the complexity of mobile carrier and global regulations. Let's get building.

[Send your first message >](#)

TAKE THE NEXT STEP WITH TWILIO SMS

Rate this page: ★★★★★

TWILIO SERVERS

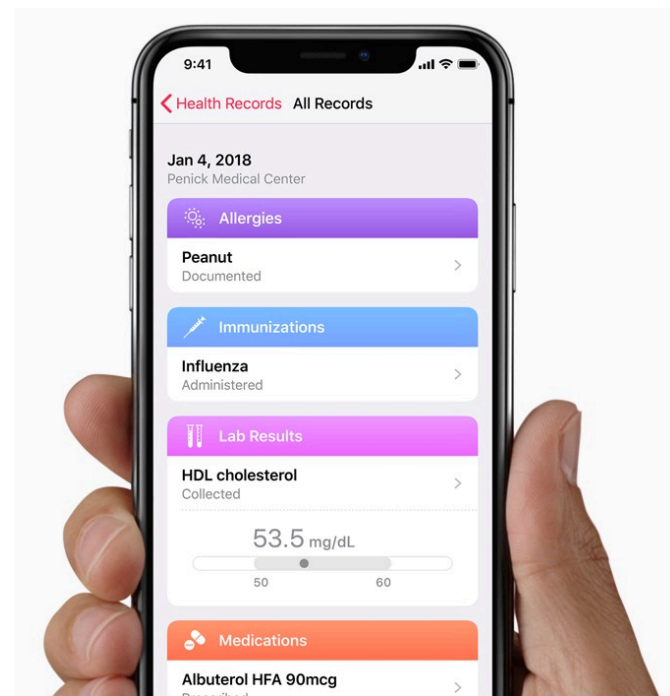
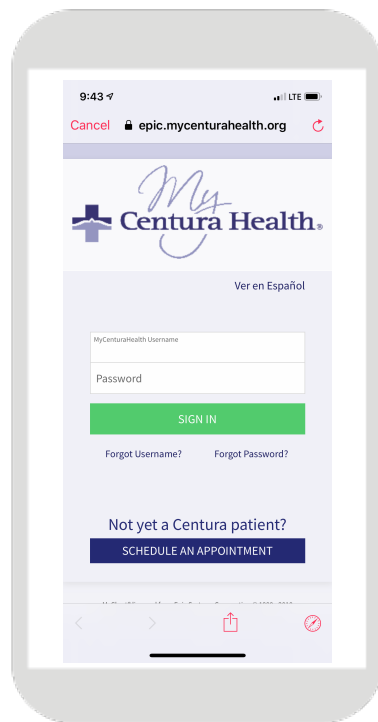
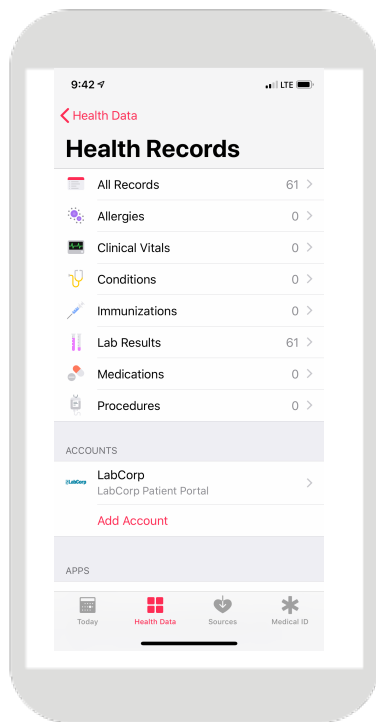
YOUR APP

```
const MessagingRespc
require("twilio").
```

```
app.post("/sms", (
  const twiml = ne
  twiml.message("I
  res.end(twiml.tc
});
```

[View complete examples ↗](#)

Thanks for
signing up!



Sign in to MyMedicare.gov to continue

Enter your User name and Password and sign in to MyMedicare.gov to continue.

User name

Password

Sign In

Cancel

[Trouble Signing In?](#)

New To MyMedicare.gov? [Create an Account](#)

[Online Services/Web confidentiality agreement](#)

Medicare.gov

Do you approve the application TestApp to access your Medicare information?

TestApp WILL BE ABLE TO:

- Access at least 4 years worth of Medicare claims information.
- Access your profile and demographic information.
- Create copies of your Medicare data.
- Get updates to your Medicare data so long as you do not revoke access.

Yes, approve access





OVERVIEW

See you

Search for your

Q United Air

Or choose from

CHASE

verizon

NAVIENT

Capital One

Fidelity



Link your account

[Why is linking important?](#)

We'll open a secure browser window for you to sign in to United Airlines Mileage Plus Credit Card's website.

We'll be right here when you're done.

SIGN IN

[Learn more](#)

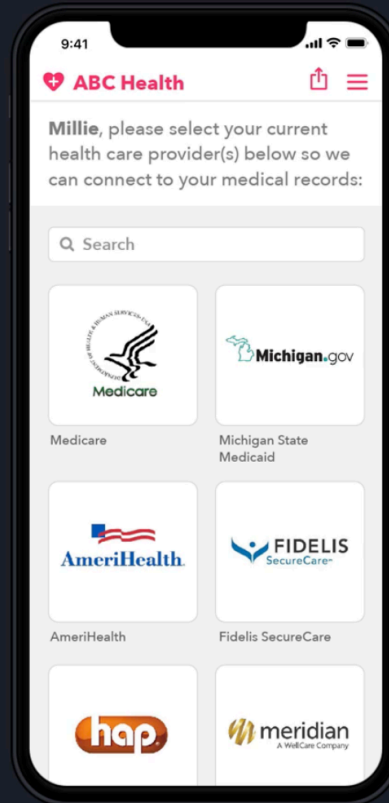
Your security is important to us

CLOSE

✓ 3 investment accounts

✓ 17 loan accounts





Building your Blue Button API

- ~~Map your claims data to FHIR~~
- ~~Build your APIs~~
- Developers use your APIs to help people

Lessons Learned about Developer Adoption

- Developer Portal
- Community and Support
- Evangelism

bluebutton.cms.gov

API

Blue Button API

A developer-friendly, standards-based API that enables Medicare beneficiaries to connect their claims data to applications, services and research programs they trust.

[View the documentation →](#)

[Sign up for the Developer Preview →](#)

Overview

Getting started

Value and Use Cases

Support

Overview

The Blue Button API contains four years of Medicare Part A, B and D data for 53 million Medicare beneficiaries. This data reveals a variety of information about a beneficiary's health, including type of Medicare coverage, drug prescriptions, primary care treatment and cost. Beneficiaries also have full control over how their data can be used and by whom, with identity and authorization controlled by MyMedicare.gov.

The Blue Button API uses the [HL7 FHIR standard](#) for beneficiary data and the [OAuth 2.0 standard](#) for beneficiary authorization.



Blue Button 2.0 Sandbox Login

Register applications, make sample API calls, manage tokens, and more.

Email



Password



Login

[Forgot Password?](#) | [Create an Account](#)



Test App

- **Client ID**

[illegible]

- **Client Secret**

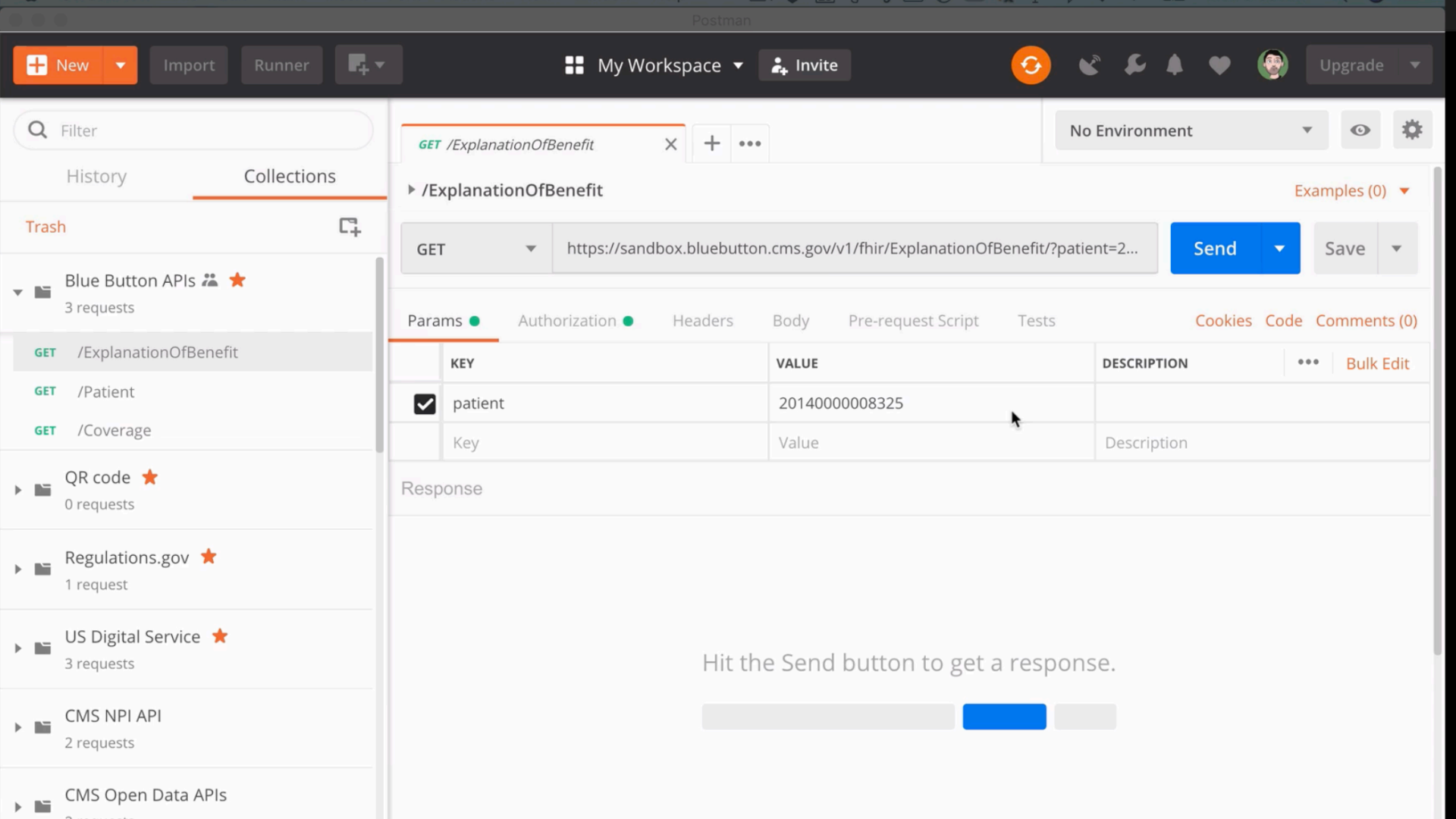
© 2000 Blackwell Science Ltd, *Journal of Internal Medicine* 247: 399–405

- **Client Type**

confidential

- **Grant Type**

authorization-code



New

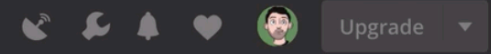
Import

Runner



My Workspace

Invite



Upgrade

Filter

History Collections

Trash

Blue Button APIs 3 requests

GET /ExplanationOfBenefit

GET /Patient

GET /Coverage

QR code 0 requests

Regulations.gov 1 request

US Digital Service 3 requests

CMS NPI API 2 requests

CMS Open Data APIs

GET /ExplanationOfBenefit

No Environment

/ExplanationOfBenefit

Examples (0)

GET https://sandbox.bluebutton.cms.gov/v1/fhir/ExplanationOfBenefit?patient=2... Send Save

Params Authorization Headers Body Pre-request Script Tests Cookies Code Comments (0)

KEY	VALUE	DESCRIPTION	...	Bulk Edit
<input checked="" type="checkbox"/> patient	20140000008325			
Key	Value	Description		

Response

Hit the Send button to get a response.



Developer Group for CMS Blue Button API

Shared publicly

30 of 201 topics (99+ unread) ★ 

Members · About 

Welcome to the Google Group for CMS Blue Button 2.0 API. Please refer to our website for more information: bluebutton.cms.gov.



Redirect Uri Mismatch (6)

By derekf...@gmail.com - 6 posts - 9 views

2:12 PM



Trying to get the token using grant type as authorization_code Invalid grant type error (2)

By Shivi Agarwal - 2 posts - 6 views

8:02 AM



Code of Conduct: Job Ads (1)

By Mark Scrimshire - 1 post - 7 views

Dec 10



404 on token refresh (5)

By Chris So - 5 posts - 23 views

Dec 5



Email address in Patient resource? (2)

By Jason McKee - 2 posts - 8 views

Dec 4



Is there any way to get refresh token for BB API (2)

By Shivi Agarwal - 2 posts - 4 views

Dec 3



Part D data through pension or similar program (1)

By Sarah Cooke - 1 post - 7 views

Nov 29



ER visit included in BB data for patient on Part C (1)

By Sarah Cooke - 1 post - 10 views

Nov 29







U.S. Digital Service ✓
@USDS

Following

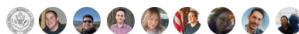


At #HIMSS18? Come say hi to some USDers! Stop by booth 10110 tomorrow from 1-2pm PT to learn more about our team and how we're working with the Center for Medicare & Medicaid Services (CMS) to improve healthcare delivery!



5:36 PM - 6 Mar 2018

13 Retweets 40 Likes

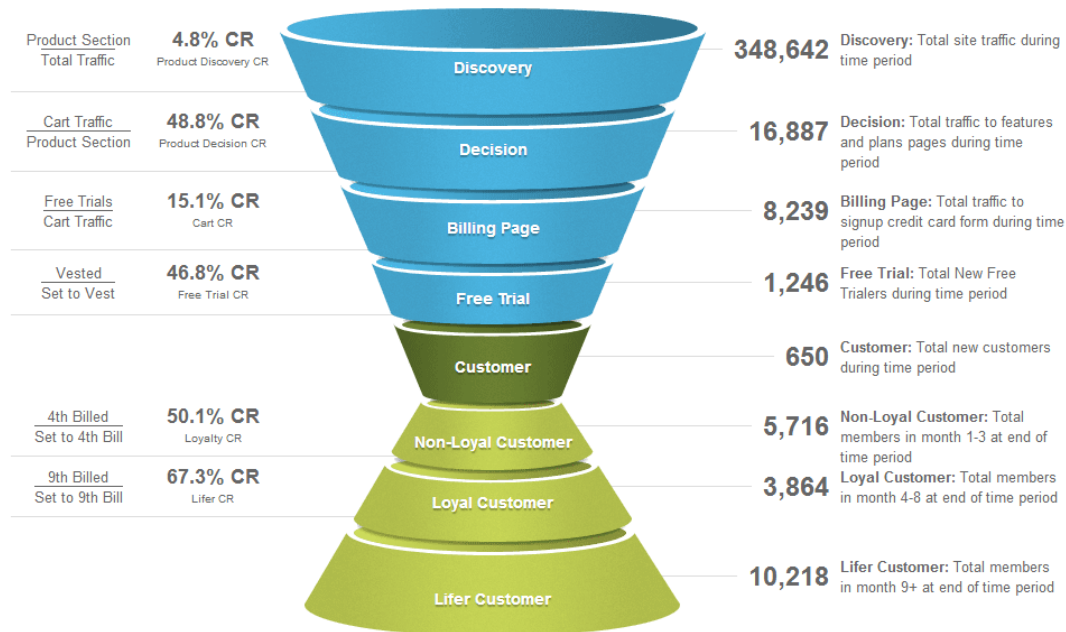


↻ 13

♥ 40



Monday, Mar. 4, 2013 – Sunday, Mar. 10, 2013



00 API Big Stats Dashboard (Sandbox)

Top level API stats related to requests, result codes and client info.

Total API Requests



Last Hour

245

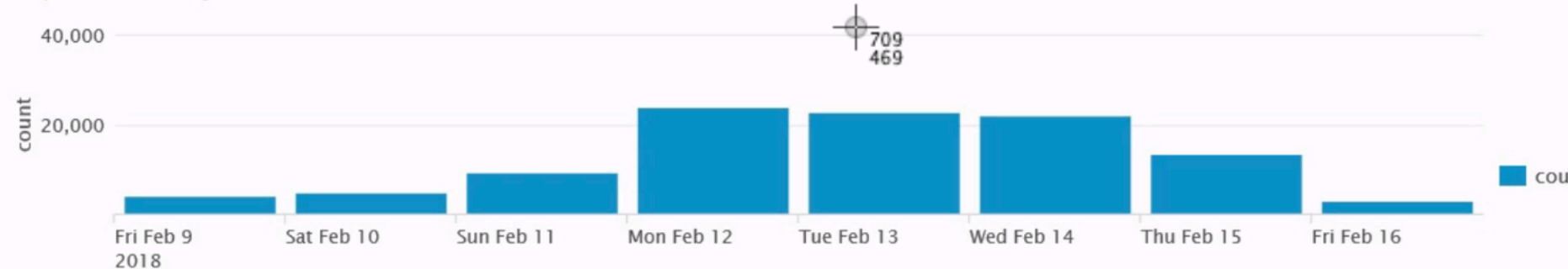
Last 24-hours

12,359

Last Week

104,964

Requests Per Day



Lessons Learned:

- Developer experience is super important
- Use metrics to measure your funnel
- Have a full-time Developer Evangelist on your team
- Building the FHIR APIs is just the beginning



Thank you.

@ktinboulder