



## Random Hacks of Kindness 2015 Challenge Brief

### Background

On average, one child dies every 21 seconds from a vaccine-preventable disease, totaling more than 1.5 million children every year. In fact, 1 in 5 children does not have access to vaccine initiatives. WorldVax.org wants to reach the Fifth Child.

Introducing the WorldVax.org *FC-Connect* system.

Caregivers need every available tool to make a difference in these young lives, and by combining mobile technology with intelligent vaccine guidance software, *FC-Connect* will provide tools to maximize use of vaccines and reach into the most remote areas.

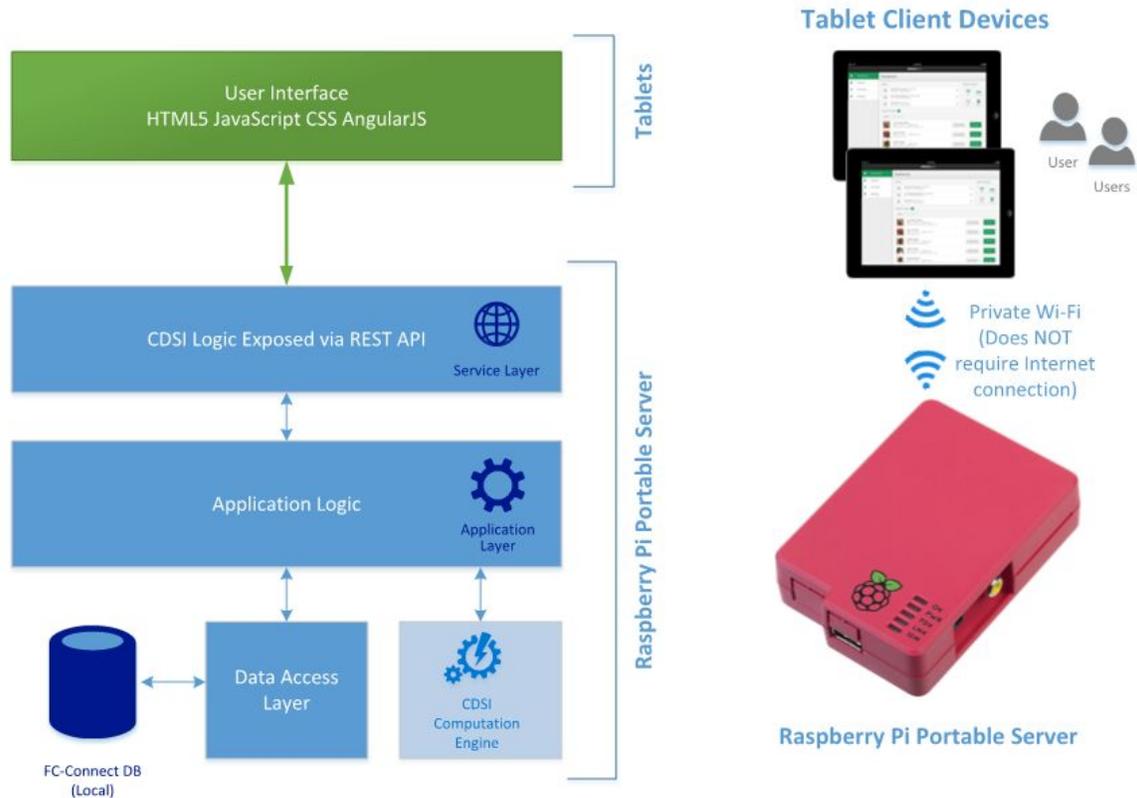
The WorldVax.org project aims to strategically equip builders of immunization information systems around the world with a reference implementation of the Centers for Disease Control and Prevention's [CDSi Logic Spec](#). The *FC-Connect* system will use the reference implementation to provide recommendations and guide field medical personnel who might not be familiar with the epidemiology domain. WorldVax.org applications will bring expert guidance to those providing health care to remote and poorly served populations.

We are looking for people who want to help us build *FC-Connect* for a better world.

## The FC-Connect Ecosystem

Here's the vision for how *FC-Connect* will function in the field:

### FC-Connect Architecture



## Challenge Statement

*FC-Connect* Server needs a REST API to provide support functions to the *FC-Connect* mobile application. This component gives users access to the immunization registry, including data entry, retrieval, and search abilities. The *FC-Connect* Server API needs to provide the following resources:

1. The CDSi supporting tables and vaccine schedules. This data is read-only and is used by the vaccine forecasting engine.
2. A patient records storehouse that can support replication and secure access to patient records.

Patient records include identifying information such a name, date of birth, and address as well as medical information. In the *FC-Connect* mobile application,

this includes the patient's immunization history and immunization related medical history.

To provide the portability that we require, *FC-Connect* Server should run be able to run on a Raspberry Pi.

This challenge is to take the current code base for *FC-Connect* Server and implement the API. In addition, the API should provide a complimenting single-page app that allows the user to browse the CDSi reference data. This SPA would use the CDSi API to read the reference data and then display that information on the screen.

## Scenarios

The mobile app must be able to work disconnected from the Internet which means any database used on the server must be capable of replicating with the mobile device. In addition, *FC-Connect* Server must be capable of replicating with an upstream data store to allow dissemination of the collected immunization information for the patient population.

## Components

The following components are ones we've chosen for the *FC-Connect* Server component.

- [Node.js](#)
- [Express](#) - used for managing routes
- [Jade](#) - template engine for Node.js
- [Bower](#) - package manager
- [Bower Installer](#) - tool for installing bower dependencies
- [PouchDb](#) - open source JavaScript database
- Libraries you can use to develop clients for the API
  - [AngularJS](#)
  - [Material Design Lite](#)

## Resources

- Jeff Miller [xagronaut@gmail.com](mailto:xagronaut@gmail.com) @xagronaut
- Dennis Dunn [ansofive@gmail.com](mailto:ansofive@gmail.com) @ansofive
- Learn more about WorldVax.org - <http://worldvax.org>
- CDSi supporting data browser - <http://cdsi.azurewebsites.net>
- GitHub repository for the challenge - <https://github.com/WorldVax/FC-Connect-Server.git>
- 2013-Feb CDSi reference data in JSON format - <https://github.com/WorldVax/FC-Connect-Server/tree/master/resources/json/cdsi>
- Mock patient data and immunization history in JSON format - <https://github.com/WorldVax/FC-Connect-Server/tree/master/resources/json/pir>
- Suggested API endpoints - <https://github.com/WorldVax/FC-Connect-Server/wiki/FC-Connect:-Server-API>

## Where to Find Us

Twitter: [twitter.com/worldvax](https://twitter.com/worldvax)



Web: [worldvax.org/](https://worldvax.org/)



Github: [github.com/worldvax](https://github.com/worldvax)



*FC-Connect* Server:  
[github.com/WorldVax/FC-Connect-Server](https://github.com/WorldVax/FC-Connect-Server)

