FHIR Server

We are using the [MiHIN FHIR server](http://52.72.172.54:8080/fhir/baseDstu2) to demonstrate our proof-of-concept. This server does not have all the resources that we need for testing, but it does allow creation of new resource records, which we are doing.

FHIR API Tools

We are using the [HAPI FHIR Java library](http://jamesagnew.github.io/hapi-fhir/) to interact with the MIHIN server.

FHIR Resources

Our application uses two FHIR resources: Patient and Immunization.

1. Patient

When a new user registers in our app, a corresponding Patient record is created for that user on the MiHIN FHIR server containing the following default attributes:

* Gender
* First Name
* Last Name

The patient creation process on FHIR returns a new auto-generated FHIR Patient ID, which we store in our own database.

1. Immunization

When a user reports a new vaccine in our app, a corresponding new Immunization record is created on the FHIR server containing the following attributes:

* Patient ID (a reference to the patient ID created for the user above)
* Vaccine Code (the CVX code for the new vaccine)
* Reported (a boolean “true” value indicating that the vaccine was self-reported)
* Date (the date the vaccine was administered)
* Status (“completed”)

Using these immunization records, our app is able to determine which vaccines a user needs before visiting a foreign country.

FHIR Security

Our application uses encrypted JWT tokens for authorization. Once a user has authenticated to the application with their email and password, the JWT token is used to verify authorization before the user can submit updates to any of their FHIR resource records.

*Note on Implementation*

*Because the public HAPI FHIR server is regularly wiped, we are unable to reliably retrieve data we have stored there. To provide a working proof-of-concept, we have thus stored immunization record information in our own database as well, and the app consults this information instead of the FHIR server when looking up a user’s completed vaccines. If we could persist data on our FHIR server, we would query that server to get our stored immunization data instead.*