1. Understand what people need (in C)
2. Address the whole experience, from start to finish (in D)
3. Make it simple and intuitive (in E)
4. Build the service using agile and iterative practices (in H)
5. Structure budgets and contracts to support delivery (in B)
6. Assign one leader and hold that person accountable (in A)
7. Bring in experienced teams (in B)
8. Choose a modern technology stack (TBD in F)
9. Deploy in a flexible hosting environment (L)
10. Automate testing and deployments (?, not sure how this was done for design pool)
11. Manage security and privacy through reusable processes (?)
12. Use data to drive decisions (?)
13. Default to open (in K)

Pool One Design: In addition to the Description, above, the Quoter must demonstrate that they followed the U.S. Digital Services Playbook by providing evidence in the repository. The README.md file should also make reference to the following for Pool One design:

a. assigned one leader and gave that person authority and responsibility and held that person accountable for the quality of the prototype submitted

Valador follows the Agile Scrum methodology for design and development. During the kick-off meeting for this Project, Valador assigned Kevin Sadeghian as the Product owner, then worked to define the scope of the project based on the RFQ content. Mr. Sadeghian is a Certified Scrum Product Owner (CSPO) and was provided with the authority and responsibility to complete the Project; and was held accountable for the quality and timeliness of the final prototype and accompanying artifacts.

b. assembled a multidisciplinary and collaborative team that includes at a minimum three of the labor categories limited to the Design Pool Labor categories to design the prototype as quoted in Attachment C. The quoter’s proposed mix of labor categories and level of effort for its working prototype, as reflected in Attachment C, shall be evaluated to assess the quoter’s understanding and capability to supply agile delivery services.

Valador assembled a team which included the following Valador employees:

Kevin Sadeghian – Product Owner

Philip Stroh – Software Engineer

Paulo Ordevez – Graphic Designer

David White – System Architect

Sean Yao – Software Developer

Ben Franzini – Technical Writer

Each of these individuals has different skillsets and varying years of experience. The resource estimates for each team member **were calculated, factored into the project budget**, documented in the project PMP and approved by Valador’s CEO to ensure availability throughout the project.

Additionally, Valador set up workspace for the duration of the project in one of our conference rooms. The room was equipped with four computers (each with two monitors), a projector, and a whiteboard. For the majority of the Project the team worked in the conference room and held all Sprint related meetings in the same workspace. This allowed problems to be solved quickly and developers to collaborate when they ran into a roadblock. This was especially important for this Project given the short duration. Mr. Franzini was working remotely from out of state so the team utilized Webex meetings and teleconferences.

c. understand what people need, by including people (see note #1) in the prototype design process

Immediately following the kick-off meeting Valador held a brief focus group with five employees who were present in the office but not involved in the project to **understand what people need (1)** and determine how the openFDA data could be used. The team explained the available data sets and asked the group what they would find useful. Several possible ideas came from the group and throughout the meeting a consensus was met that the ApplicationRx was the most appropriate and useful application for the group.

Additionally, these same employees evaluated the User Interface mock-ups and suggested changes that would make it easier to use and more visually appealing during the first sprint review once a Minimum Viable Product was available.

d. used at least three “human-centered design” techniques or tools

In addition to the focus group mentioned above, Valador involved a number of users in the prototype design to incorporate their feedback to **design possible experience use cases from start to finish**. Our goal was to make a user-friendly prototype. We incorporated the following: <<Mike look up>>

e. created or used a design style guide and/or a pattern library

Valador used our internal style guide to develop the design and related artifacts. Our design team **focused on creating a simple and intuitive design** which was later validated through usability testing and additional focus groups. <<validate with Paulo/Adelia>>

f. used at least three modern (see Note#2) and open source frontend or client side (see note #3) web technologies

Valador has made use of the following technologies during this project:

* Bootstrap
* PHP
* Google Charts
* Ajax
* JQuery
* AngularJS

g. performed usability tests with people

During the Sprint Valador performed usability tests with the same group of 5 people who participated in the focus group previously mentioned. The group was asked to evaluate the Design prototype for usability <<expand, anyone?>>

h. used an interactive approach, where feedback informed subsequent work or versions of the prototype

Valador followed our design approach which is based on the Agile Scrum methodology. This included three Sprints which allowed us to iterate through various design enhancements. Additionally, given the short timeframe, feedback was solicited from both team members and other Valador employees during each Sprint. This feedback informed the design and functional iterations as well as requirements for the second Sprint. The Product Owner was ultimately responsible for the end result.

i. created a prototype that works on multiple devices and presents a responsive design

Valador created a design prototype that works on any device with a web browser. Due to the short development time the decision was made to support Google Chrome for desktop browsers and Safari on iOS devices. The design prototype incorporates responsive design which allows the prototype to work on mobile devices with any size screen as long as the device is running a compatible browser.

j. provided sufficient documentation to install and run their prototype on another machine

Valador included an installation guide: <<David/Phil include installation steps>>

k. prototype and underlying platforms used to create and run the prototype are openly licensed and free of charge.

The prototype and underlying platforms used to create and run the prototype are openly licensed and free of charge. Valador **deployed the application making use of open licensed services such as Google Charts, GitHub, and DailyMed (dailymed.nlm.nih.gov). Platforms used in the development include Bootstrap, AngularJS, PHP, Java, and Linux.**

**Pool 2**

1. Understand what people need (in J)
2. Address the whole experience, from start to finish (in J)
3. Make it simple and intuitive (in J)
4. Build the service using agile and iterative practices (in J)
5. Structure budgets and contracts to support delivery (in B)
6. Assign one leader and hold that person accountable (in A)
7. Bring in experienced teams (in B)
8. Choose a modern technology stack (TBD in D)
9. Deploy in a flexible hosting environment (TBD in D)
10. Automate testing and deployments (TBD in F)
11. Manage security and privacy through reusable processes (?)
12. Use data to drive decisions (?)
13. Default to open (TBD in L)

Pool Two: Development Pool: In addition to the Description, above, the Quoter must demonstrate that they followed the U.S. Digital Services Playbook by providing evidence in the repository. The README.md file should also make reference to the following for Pool Two Development:

a. assigned one leader, gave that person authority and responsibility and held that person accountable for the quality of the prototype submitted

Valador follows the Agile Scrum methodology for design and development. During the kick-off meeting for this Project, Valador assigned Kevin Sadeghian as the Product Owner, then worked to define the scope of the project based on the RFQ content. Mr. Sadeghian is a Certified Scrum Product Owner (CSPO) and was provided with the authority and responsibility to complete the Project; and was held accountable for the quality and timeliness of the final prototype and accompanying artifacts.

b. assembled a multidisciplinary and collaborative team that includes at a minimum two of the labor categories limited to the Development Pool labor categories to develop the prototype as quoted in Attachment C. The quoter’s proposed mix of labor categories and level of effort for its working prototype, as reflected in Attachment C, shall be evaluated to assess the quoter’s understanding and capability to supply agile delivery services c. used at least five modern and open-source technologies, regardless of architectural layer (frontend, backend etc)

Valador assembled a team which included the following Valador employees:

Kevin Sadeghian – Product Owner

Philip Stroh – Software Engineer

Paulo Ordevez – Graphic Designer

Adelia Nichols – Graphic Designer

David White – System Architect

Sean Yao – Software Developer

Ben Franzini – Technical Writer

Each of these individuals has different skillsets and varying years of experience. The resource estimates for each team member **were calculated, factored into the project budget**, documented in the project PMP and approved by Valador’s CEO to ensure availability throughout the project.

Additionally, Valador set up workspace for the duration of the project in one of our conference rooms. The room was equipped with four computers (each with two monitors), a projector, and a whiteboard. For the majority of the Project the team worked in the conference room and held all Sprint related meetings in the same workspace. This allowed problems to be solved quickly and developers to collaborate when they ran into a roadblock. This was especially important for this Project given the short duration. Mr. Franzini was working remotely from out of state so the team utilized Skype, Webex meetings, and teleconferences to included him in the collaborative working process.

d. deployed the prototype on an Infrastructure as a Service (IaaS) or Platform as a Service (PaaS) provider, and indicated which provider was used

Valador deployed the prototype on Amazon Web Services Infrastructure as a Service (IaaS). We created used EC2 servers configured to our needs to host the development, testing, and production platforms.

e. wrote unit tests for their code

Unit tests were created to test application modules and compiled into test suite which was integrated into the CI environment. Unit test configurations are stored in a config file which is used to easily change test parameters and/or expected results when applicable. All builds are automatically run through the test suite by the CI tool and marked as pass or fail.

f. set up or used a continuous integration system to automate the running of tests and continuously deployed their code to their IaaS or PaaS provider

Valador chose Jenkins for our CI tool deployed on the EC2 servers which was linked to our git repository on GitHub for automatic builds when code was checked into the master branch.

g. set up or used configuration management

Valador chose git as our configuration management tool. We made use of GitHub for the origin repository and managed branches through pull requests.

h. set up or used continuous monitoring

Valador used the tools provided by AWS for continuous monitoring.

i. deploy their software in a container (i.e., utilized operating-system-level virtualization)

Valador deployed our software in a container by <<David/Phil>>

j. used an interactive approach, where feedback informed subsequent work or versions of the prototype

Valador followed our development approach which is based on the Agile Scrum methodology. This method promotes disciplined project management practices that encourage frequent inspection of the product and flexible adaptation of the requirements. Teamwork, self-organization and accountability are encouraged to allow for rapid delivery of high-quality software and a business approach that aligns development with customer/user needs. Valador followed the project kick-of meeting with a user focus group to help **understand what people need**, that the preliminary **design concepts were simple and intuitive**, and that the **requirements being developed addressed the whole experience, from start to finish**. Customer-driven, or in this case user-driven feedback based on focus groups, prioritized requirements are broken down into tasks for short development sprints that result in reviewable, potentially shippable product increments.

The Product Owner, a Valador resource working closely with the customer, prioritizes a Product Backlog which contains features, requirements, bug fixes or other development tasks. The items in the Product Backlog are contributed by the entire team, including the customer. This allows a variety of idea contributions to the product functionality, while allowing the customer and Project Manager to maintain control of their overall priorities in the development schedule.

The “Sprint” is a development cycle where a set of items from the Product Backlog are fully completed. It begins with a Sprint Planning Meeting where the team breaks Product Backlog items down into subtasks, estimates their effort, and decides on how many Product Backlog items they can get done in the next Sprint. This Sprint Backlog created from the Sprint Planning Meeting is a fixed set of tasks that will be completed by the end of the Sprint. While items in the Product Backlog can be added, removed or re-prioritized at any time, items in the Sprint Backlog will not change once the Sprint has begun. As development takes place on the items in the Sprint Backlog, daily “standup” meetings are held to report on progress. Every team member who is working on Sprint Backlog items briefly discusses what they did the previous day, what they are doing the current day and what, if any, obstacles are preventing them from completing their tasks. It is the Project Manager’s job to remove these obstacles so that the team can complete their work.

By the end of the Sprint, an operational, fully demonstrable product is created including the items that were defined in the Sprint Backlog. A Sprint Review is held with the customer to demonstrate the product, receive feedback and re-prioritize the Product Backlog in anticipation for the next Sprint if necessary. If the customer is satisfied with the product of the Sprint and believes it can be used in a production environment, they can choose to make it a final release product. After the Sprint Review, the team holds a Sprint Retrospective for the purpose of process improvement including discussing what could be done better in future Sprints and making plans for implementing those improvements. If there are more features on the Product Backlog at this time that the customer wants completed, the Sprint cycle begins anew with another Sprint Planning Meeting.

This approach allows the Customer to use and evaluate the system early and frequently throughout the overall schedule. The highest priority tasks are addressed early on to provide the end result desired by the customer and give ample time for refinement of the product requirements. Agile development methodologies help attack risk through demonstrable progress – frequent, executable releases that enable and allow continuous customer involvement and feedback. Because all iterations end with a demonstrable release, the development team stays focused on producing results, and frequent reviews checks help ensure that the project stays on schedule.

This Project included two Sprints. Additionally, given the short timeframe, feedback was solicited from both team members and other Valador employees during each Sprint. The Product Owner was ultimately responsible for the end result. Valador used Target Process to document

k. provided sufficient documentation to install and run their prototype on another machine

Valador provided an installation guide which is included in <<David/Phil>>

l. prototype and underlying platforms used to create and run the prototype are openly licensed and free of charge

The prototype and underlying platforms used to create and run the prototype are openly licensed and free of charge. These include:

* Bootstrap
* PHP
* Google Charts
* Ajax
* JQuery
* MySQL
* AngularJS
* Java
* Restlet 2.x
* Eclipse
* Git
* Jenkins
* Linux

*Pool Three: the Full Stack Pool:* In addition to the Description, above, the quoter must demonstrate that they followed the U.S. Digital Services Playbook by providing evidence in the repository. The README.md file should also make reference to the following for Pool Three

Full Stack:

a. met all the evidence criteria listed above in the Design Pool and Development Pool and Attachment C includes at a minimum five of the labor categories from the Full Stack Pool categories.