

g. Used an iterative approach, where feedback informed subsequent work or versions of the prototype.

g.1. Iterative Approach

BE used a modified version of its Agile Development process and tools to create GSA's requested prototype. Our Agile development approach was tailored to the size, scope and timelines of this effort specifically we condensed our use of Google Ventures Design Sprint (<http://www.gv.com/sprint/>) into less than 2 days and conducted daily sprints vs. 2 week sprints.

The BE team was assembled in February and conducted practice sessions to ensure we were ready to work together as an integrated team. The team came back together upon the solicitations release and hit the ground running. We used less than 2 days to unpack, sketch and design. On the 2nd day we began daily sprints that included development, releases, demos, retrospectives and user story and backlog updates. At key points we incorporated user feedback including usability and acceptance testing. The following are artifacts were developed/captured during this process.

g.2. Project Plan

g.2.1. Introduction

This document is the Project Plan for developing Buchanan & Edwards (BE) response to the GSA's Request for Quotation (RFQ) For the Establishment of Multiple Award Blanket Purchase Agreements (BPAs) for Agile Delivery Services (ADS I). This project plan defines the scope, approach, schedule, effort, and project organization for the prototyping effort in response to the RFQ.

g.2.2. Scope

The scope of the RFQ is defined as “fundamental scope of the ADS I BPAs is to provide a streamlined process to support 18F's need for agile delivery services, including user-centered design, agile architecture, agile software development, and DevOps.” The effort as defined in the GSA RFQ is to submit a working prototype which consists of both design and development, using the OpenFDA (<https://open.fda.gov>) dataset and Application Programming Interface (API) which demonstrates its agile delivery capabilities. The submission of the working prototype serves as a sample task that GSA believes is representative of the type of task orders that may be issued against the BPAs. Therefore this project plan covers:

- Developing a prototype that consumes, modifies, remixes, or displays the dataset provided for its functionality (such as explanatory written content)
- Publishing a repository consisting of all prototype source code, design assets, and *all associated documentation that went into the creation of the prototype*, to an online and publicly accessible version control system (e.g., GitHub, GitLab, BitBucket) that supports git.
- Developing the prototype following Agile methodologies.

g.2.3. Approach

To execute the project, we will follow an integration of the Google Venture Design Sprint (<http://www.gv.com/sprint/>) and a modified version of BE's Agile Development process and tools to create GSA's requested prototype. Our Agile development approach has been tailored to the size, scope and timelines of this effort.

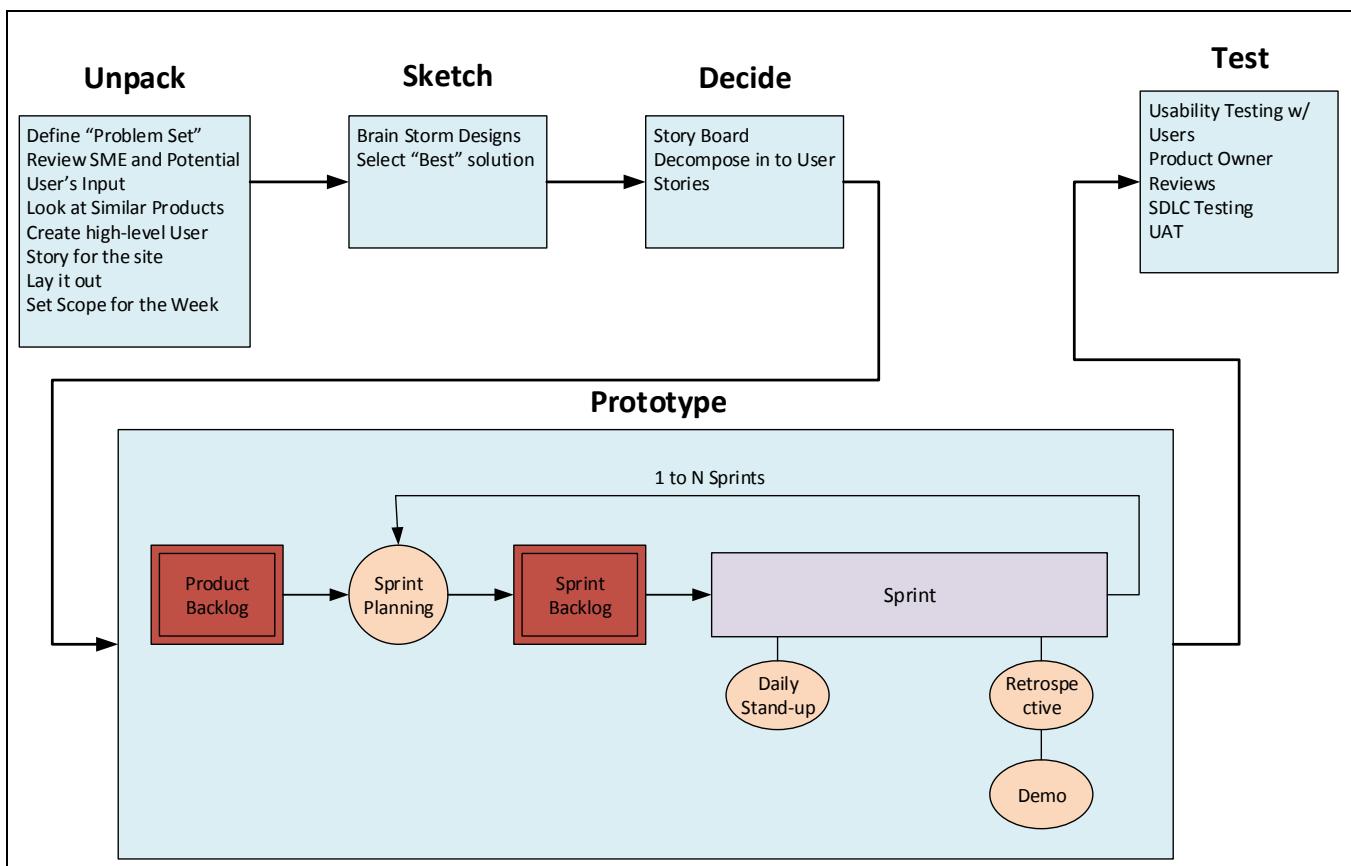


Figure 1. Agile approach incorporating Google Venture Design Sprint

As Figure 1 diagrams, our approach is based on the Google Venture Design Model. Our effort will be conducted in 5 phases: Unpack, Sketch, Decide, Prototype, and Test. During the "Unpack" Phase, BE will:

- Define the "Problem Set" for this project
- Review insight from medical fields SMEs, personas and brainstorming input from potential users as to how to leverage benefits from the OpenFDA API dataset.
- Search for and review similar products in the industry
- Create a high-level user story that describes the product's vision.
- Layout an initial design for the site
- Scope out the activities for the week ahead

During the Sketch phase, BE will:

- Draw out, following various techniques, ideas for the design of the prototype
- Select the “Best” design from our alternatives

During the Decide Phase, BE will:

- Storyboard the site
- Decompose the functionality into User Stories (BE will use JIRA to manage the backlog)

During the Prototype phase, BE will build the prototype incrementally following an Agile Scrum methodology. A high-level view of the Agile Scrum process is shown in **Figure 2**.

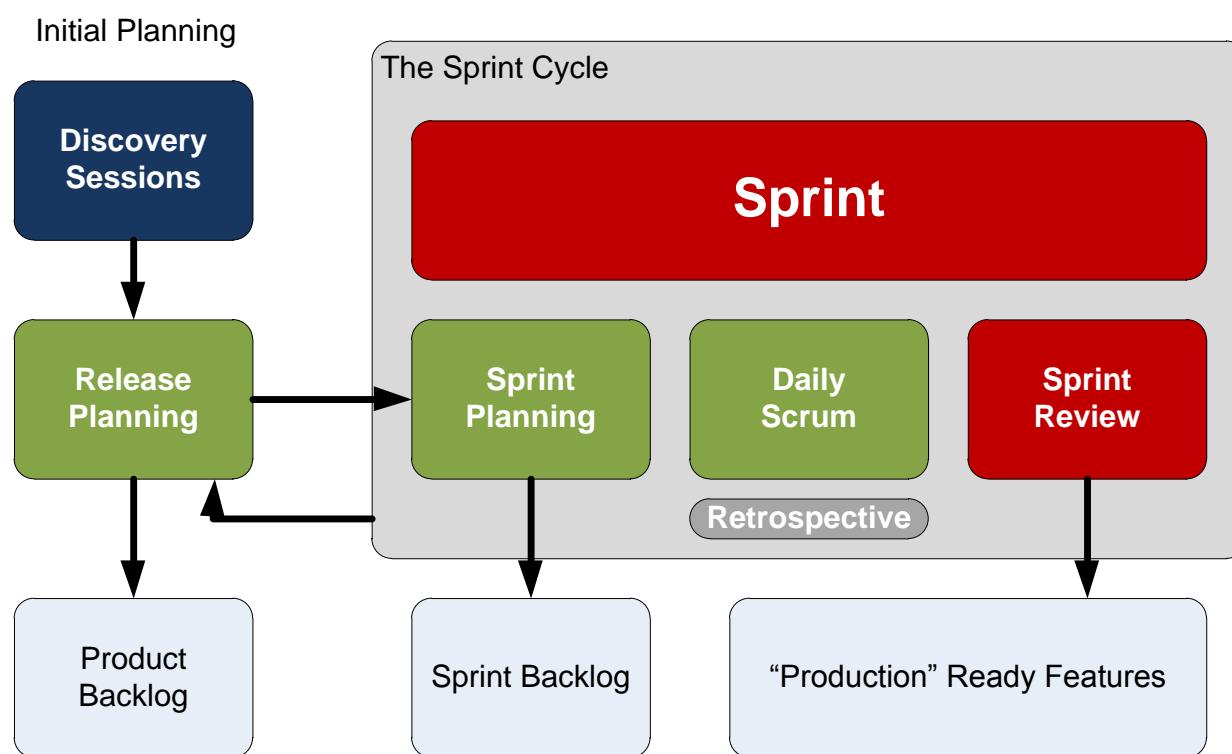


Figure 2. Sprint Cycle

The initial product backlog stories and the Release Plan were developed during the Decide Phase. For each sprint the major activities BE will execute are Sprint Planning, Daily Stand-ups, Sprint Reviews/Demo, and Retrospectives. After the last Sprint on this project, a working prototype, will be completed and released.

g.2.4. Schedule

The turnaround for delivering a prototype and all artifacts to GSA is 14 days. Within that time we will execute an integrated approach using Google Venture’s 5-day design model and several Sprints following an Agile Scrum approach. **Figure 4** shows a schedule for this effort.

**Request for Quotation (RFQ) 4QTFHS150004****Approach Criteria Evidence**

Task Name	Duration	Start	Finish
Unpack	0.13 days	Thu 6/18/15	Thu 6/18/15
Define "Problem Set"	1 hr	Thu 6/18/15	Thu 6/18/15
Review SME Input	0.5 hrs	Thu 6/18/15	Thu 6/18/15
Look at Similar Products	0.5 hrs	Thu 6/18/15	Thu 6/18/15
Create High-level User Story	1 hr	Thu 6/18/15	Thu 6/18/15
Lay It Out	1 hr	Thu 6/18/15	Thu 6/18/15
Set Scope for Week	0.5 hrs	Thu 6/18/15	Thu 6/18/15
Sketch	0.25 days	Thu 6/18/15	Thu 6/18/15
Brain Storm Designs	2 hrs	Thu 6/18/15	Thu 6/18/15
Select Best	1 hr	Thu 6/18/15	Thu 6/18/15
Decide	0.5 days	Thu 6/18/15	Thu 6/18/15
Story Board	1 hr	Thu 6/18/15	Thu 6/18/15
Decompose - Create Stories	4 hrs	Thu 6/18/15	Thu 6/18/15
Prototype (Development)	13 days?	Fri 6/19/15	Tue 7/7/15
User Story Refactoring	1 hr	Fri 6/19/15	Fri 6/19/15
Sprint #1 Planning	2 hrs	Fri 6/19/15	Fri 6/19/15
Sprint #1 Kickoff	0 days	Fri 6/19/15	Fri 6/19/15
Sprint #1	4 days	Fri 6/19/15	Wed 6/24/15
User Story Development	2 days	Fri 6/19/15	Mon 6/22/15
Daily Stand-up	0.5 hrs	Sat 6/20/15	Sat 6/20/15
Daily Stand-up	0.5 hrs	Sun 6/21/15	Sun 6/21/15
Daily Stand-up	0.5 hrs	Mon 6/22/15	Mon 6/22/15
Sprint #1 Demo	1 hr	Mon 6/22/15	Mon 6/22/15
Retrospective	0.5 hrs	Mon 6/22/15	Mon 6/22/15
Sprint #2 Planning	1 hr	Mon 6/22/15	Mon 6/22/15
Sprint #2 Kickoff	0 days	Mon 6/22/15	Mon 6/22/15
Sprint #2	2 days	Mon 6/22/15	Tue 6/23/15

**Request for Quotation (RFQ) 4QTFHS150004****Approach Criteria Evidence**

Task Name	Duration	Start	Finish
User Story Development	2 days	Mon 6/22/15	Tue 6/23/15
Daily Stand-up	0.5 hrs	Tue 6/23/15	Tue 6/23/15
Sprint #2 Demo	1 hr	Tue 6/23/15	Tue 6/23/15
Retrospective	0.5 hrs	Tue 6/23/15	Tue 6/23/15
Sprint #3 Planning	1 hr	Tue 6/23/15	Tue 6/23/15
Sprint #3 Kickoff	0 days	Tue 6/23/15	Tue 6/23/15
Internal Stakeholder Review	2 hrs	Tue 6/23/15	Tue 6/23/15
Sprint #3	2 days	Tue 6/23/15	Wed 6/24/15
User Story Development and Bug Fixes	2 days	Tue 6/23/15	Wed 6/24/15
Daily Stand-up	0.5 hrs	Wed 6/24/15	Wed 6/24/15
Usability Testing	2 hrs	Wed 6/24/15	Wed 6/24/15
Retrospective	0.5 hrs	Wed 6/24/15	Wed 6/24/15
Internal Stakeholder Review (Demo)	2.5 hrs	Wed 6/24/15	Wed 6/24/15
Sprint #4 Planning	1 hr	Wed 6/24/15	Wed 6/24/15
Sprint #4 Kickoff	0 days	Wed 6/24/15	Wed 6/24/15
Sprint #4	2 days	Wed 6/24/15	Thu 6/25/15
User Story Development and Bug Fixes	2 days	Wed 6/24/15	Thu 6/25/15
Daily Stand-up	0.5 hrs	Thu 6/25/15	Thu 6/25/15
Internal Stakeholder Review (Demo)	2.5 hrs	Thu 6/25/15	Thu 6/25/15
Retrospective	0.5 hrs	Thu 6/25/15	Thu 6/25/15
User Acceptance Testing (UAT)	1 hr	Thu 6/25/15	Thu 6/25/15
Sprint #5 Planning	0 days	Thu 6/25/15	Thu 6/25/15
Sprint #5 Kickoff	1 hr	Thu 6/25/15	Thu 6/25/15
Sprint #5	5 days	Thu 6/25/15	Wed 7/1/15
User Story Development and Bug Fixes	5 days	Thu 6/25/15	Wed 7/1/15

**Request for Quotation (RFQ) 4QTFHS150004****Approach Criteria Evidence**

Task Name	Duration	Start	Finish
Daily Stand-up	0.5 hrs	Fri 6/26/15	Fri 6/26/15
Daily Stand-up	0.5 hrs	Sat 6/27/15	Sat 6/27/15
Daily Stand-up	0.5 hrs	Sun 6/28/15	Sun 6/28/15
Daily Stand-up	0.5 hrs	Mon 6/29/15	Mon 6/29/15
Daily Stand-up	0.5 hrs	Tue 6/30/15	Tue 6/30/15
Internal Stakeholder Review (Demo)	2.5 hrs	Tue 6/30/15	Tue 6/30/15
Retrospective	0.5 hrs	Tue 6/30/15	Tue 6/30/15
Sprint #6 Planning	0 days	Wed 7/1/15	Wed 7/1/15
Sprint #6 Kickoff	1 hr	Wed 7/1/15	Wed 7/1/15
Sprint #6	3 days	Wed 7/1/15	Sat 7/4/15
User Story Development and Bug Fixes	4 days	Wed 7/1/15	Sat 7/4/15
Daily Stand-up	0.5 hrs	Thu 7/2/15	Thu 7/2/15
Daily Stand-up	0.5 hrs	Fri 7/3/15	Fri 7/3/15
Usability Testing	1 hr	Fri 7/3/15	Fri 7/3/15
Daily Stand-up	0.5 hrs	Sat 7/4/15	Sat 7/4/15
Internal Stakeholder Review (Demo)	2.5 hrs	Sat 7/4/15	Sat 7/4/15
Retrospective	0.5 hrs	Sat 7/4/15	Sat 7/4/15
User Acceptance Testing (UAT)	1 hr	Sat 7/4/15	Sat 7/4/15
Sprint #7 Planning	1 day	Mon 7/6/15	Mon 7/6/15
Sprint #7 Kickoff	8 hrs	Mon 7/6/15	Mon 7/6/15
Sprint #7	1 day	Mon 7/6/15	Mon 7/6/15
User Story Work	1 day	Mon 7/6/15	Mon 7/6/15
Daily Stand-up	0.5 hrs	Mon 7/6/15	Mon 7/6/15
Internal Stakeholder Review (Demo)	2.5 hrs	Mon 7/6/15	Mon 7/6/15
Retrospective	0.5 hrs	Mon 7/6/15	Mon 7/6/15

Task Name	Duration	Start	Finish
Delivery			
Finalize documentation	2 days	Fri 7/3/15	Sun 7/5/15
Finalize Code	1 day	Fri 7/3/15	Fri 7/3/15
Switch GitHub Site to Public	1 day	Tue 7/7/15	Tue 7/7/15

Figure 4. Project Schedule

g.2.5. Staffing

The work within this project logically falls into the following main areas: Project Management and oversight, Frontend development, backend development, infrastructure development, and Agile Process management and documentation.

Figure 5 shows which scrum team members contributed to which roles:

	Brian Shafer	Frank Hellwig	Lauren Turbeville	Chutima Chokkij	Brandt Heisey	Matthew Prezotti	Theodore Miller	Michael Holt
Category 1 - Product Manager	X							
Category 2 - Technical Architect		X			X			
Category 3 - Interaction Designer / User Researcher / Usability Tester			X			X	X	
Category 5 - Visual Designer				X				
Category 6 - Frontend Web Developer		X				X		
Category 7 - Backend Web Developer					X			
Category 8 - DevOps Engineer						X		
Category 9 - Security Engineer							X	
Category 10 - Delivery Manager								X
Category 12 - Business Analyst			X					
Certified Agile Scrum Master (CSM)								X

Figure 5. Scrum Team Members and Roles

The team was created with the various technical disciplines necessary for the prototype and incorporating staff with specific Agile Software development expertise and experience. Team members are used to working collaboratively on Agile projects; however, this team was brought together for this specific solicitation.

g.3. Google Ventures 5-day Design Model

To begin, BE condensed our use of Google's Ventures Design Sprint (<http://www.gv.com/sprint/>) into less than 2 days. A photo of the whiteboard outlining 4 of the 5 steps of Google Ventures 5-Day Sprint condensed into 1 day is below.

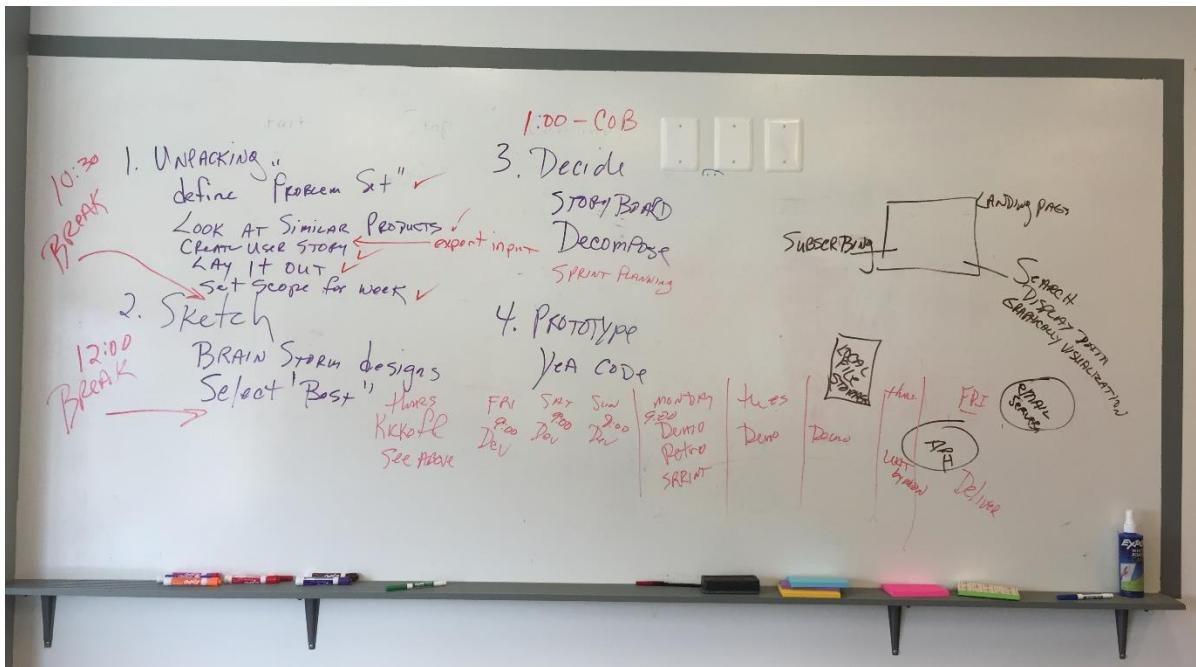


Figure 6. Title

See Appendix C Initial Planning Meeting Agenda/Notes.

g.3.1. Agile Scrum

BE conducted Daily Stand-ups every morning at 9:00am during active sprints. Daily stand-ups are quick team sanity checks where the Scrum Master asks everyone the same basic Agile Scrum questions:

1. What did you accomplish yesterday?
2. What are you going to do today?
3. Any roadblocks?

The only thing recorded during the stand-ups is time left on stories. A screenshot from Outlook reflects the daily scrum calendar for the BE Team below. See Project Schedule for more details.



SUBJECT	LOCATION	START	END	RECURRENCE PATTERN	C. IN FOLD...
▲ Recurrence: (none): 3 item(s)					
18F Leadership Touchpoint	702-589-8300 -- A...	Fri 6/19/2015 4:30 PM	Fri 6/19/2015 5:00 PM		Calendar
18F Sprint 1 Demo	Collaboration Ro...	Mon 6/22/2015 11:00 AM	Mon 6/22/2015 12:00 PM		Calendar
18F Sprint 1 Retrospective	Collaboration Ro...	Mon 6/22/2015 12:00 PM	Mon 6/22/2015 12:30 PM		Calendar
▲ Recurrence: (none): 19 item(s)					
18F Introduction	+1 (702) 589-8300...	Tue 5/26/2015 12:00 PM	Tue 5/26/2015 1:00 PM		Calendar
18F Day 0	BE HQ	Thu 5/28/2015 12:00 PM	Thu 5/28/2015 6:00 PM		Calendar
18F Pre-Kickoff Meeting	+1 (702) 589-8300...	Wed 6/17/2015 11:00 AM	Wed 6/17/2015 12:00 PM		Calendar
18F Kickoff - hold the time	+1 (702) 589-8300...	Wed 6/17/2015 1:00 PM	Wed 6/17/2015 2:30 PM		Calendar
18F Day 1	BE HQ Team Room	Thu 6/18/2015 9:00 AM	Thu 6/18/2015 6:00 PM		Calendar
18F Sprint Planning Meeting	Collaboration Ro...	Thu 6/18/2015 9:30 AM	Thu 6/18/2015 12:30 PM		Calendar
18F Day 2	+1 (702) 589-8300...	Fri 6/19/2015 10:00 AM	Fri 6/19/2015 4:00 PM		Calendar
18F Quality Deliverables - what do we publish?	+1 (702) 589-8300...	Fri 6/19/2015 2:00 PM	Fri 6/19/2015 3:00 PM		Calendar
18F Sprint 2 Demo	Collaboration Ro...	Tue 6/23/2015 1:00 PM	Tue 6/23/2015 1:30 PM		Calendar
18F Sprint 2 Retrospective	Collaboration Ro...	Tue 6/23/2015 1:30 PM	Tue 6/23/2015 2:00 PM		Calendar
Tentative Hold - 18F Red Team	CTO Office	Tue 6/23/2015 3:00 PM	Tue 6/23/2015 5:00 PM		Calendar
18F Usability Testing	CTO Office	Wed 6/24/2015 1:00 PM	Wed 6/24/2015 1:30 PM		Calendar
18F Sprint 3 Demo	+1 (702) 589-8300...	Wed 6/24/2015 1:00 PM	Wed 6/24/2015 1:30 PM		Calendar
18F Sprint 3 Retrospective	+1 (702) 589-8300...	Wed 6/24/2015 1:30 PM	Wed 6/24/2015 2:00 PM		Calendar
18F UAT	The Prosperity Ro...	Thu 6/25/2015 10:00 AM	Thu 6/25/2015 11:00 AM		Calendar
18F Sprint 4 Demo	Collaboration Ro...	Thu 6/25/2015 1:00 PM	Thu 6/25/2015 1:30 PM		Calendar
18F Sprint 4 Retrospective	+1 (702) 589-8300...	Thu 6/25/2015 1:30 PM	Thu 6/25/2015 2:00 PM		Calendar
FINAL PUSH	The Vault and +...	Tue 6/30/2015 11:00 AM	Tue 6/30/2015 12:00 PM		Calendar
IMPORTANT: 18F Call	+1 (702) 589-8300...	Wed 7/1/2015 4:00 PM	Wed 7/1/2015 5:00 PM		Calendar
▲ Recurrence: Daily: 3 item(s)					
18F Daily Scrum	702-589-8300 -- A...	Fri 6/19/2015 9:00 AM	Fri 6/19/2015 9:30 AM	Occurs every day from 9:00 AM to 9:30 AM effective 6/19/2015 until 6/26/2015.	Calendar
18F Daily Scrum	Collaboration Ro...	Sat 6/27/2015 9:00 AM	Sat 6/27/2015 9:30 AM	every day from 9:00 AM to 9:30 AM	Calendar
18F Daily Scrum	+1 (702) 589-8300...	Tue 6/30/2015 9:00 AM	Tue 6/30/2015 9:30 AM	every day from 9:00 AM to 9:30 AM	Calendar

[Showing recent results...](#)

[More](#)

Figure 7. BE 18F Agile Scrum calendar in Outlook

g.4.Phase 1: Unpack

This section defines the BE Team's evidence gathered for Phase 1: Unpacking

g.4.1. Define the Problem Set

In conjunction with the Scope section in the Project Plan above, BE developed a Vision Statement for the Problem Set:

“BE Safe will be the industry premier one-stop web-site for clinicians and the public to gain drug recalls and adverse reaction information to help make informed decisions to be safe. BE Safe will be an active participant in providing input/feedback to FDA on these information areas to help other be safe.”

g.4.2. Review Interviews from Personas and Industry SMEs

During the Research and Inspiration Phase, BE consulted corporate staff who could be representative of fictitious personas by the names of John Q. Public, Kate A. Citizen, Conner S. Consumer, and Sherri M. Caretaker. BE interviewed Dr. Frederick Williams, M.D., FACP (Board certified Internal Medicine) and John Q. Public, Kate A. Citizen, Conner S. Consumer, and Sherri M. Caretaker to identify both the potential user community as well as the target audience. The results of those interviews are captured in Appendix A and B.

After reviewing the OpenFDA API dataset for adverse events related to drugs and Dr. Williams' feedback on the value of the OpenFDA data to clinical physicians, the team decided to build our website to the needs, wants and limitations of John Q. Public, Kate A. Citizen, Conner S. Consumer, and Sherri M. Caretaker.

g.4.3. Review Similar Industry Products

During ideation, BE searched for and evaluated similar products in the industry. BE looked at similar products that help users look at drug labels, drug interactions, and recalls, including:

- <http://Open.fda.gov>

- <http://www.visualizefda.com/>
 - <http://www.epocrates.com>

The BE team looked at each of these sites together and discussed the strengths and weaknesses for each of these sites and identified opportunities for BE Safe. The results of this discussion resulted in the product vision for BE Safe.

g.4.4. Create User Story for Product Vision

The BE Team came up with the following high-level user story for the product vision:

“As a user I want a single website to search for drug recalls and adverse reactions, and subscribe to alerts, using a standard desktop, laptop or mobile device so I can be safe.”

g.4.5. Layout Initial Design for the Site

The BE team conducted a brainstorming session for the initial design. We used a whiteboard for ease of modifying.

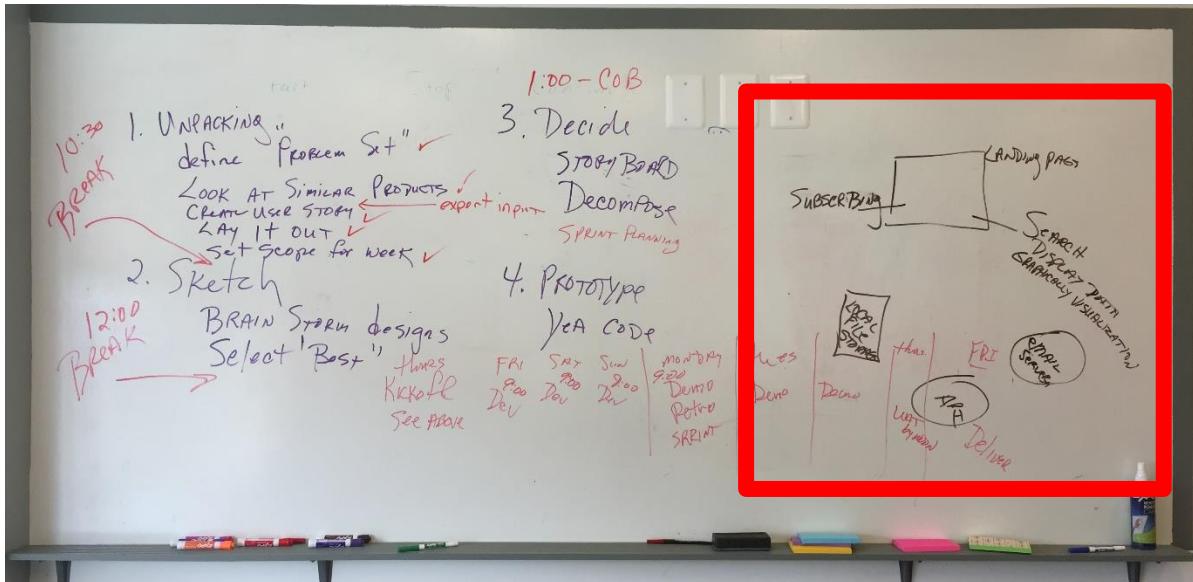


Figure 8. Initial Design Sketch

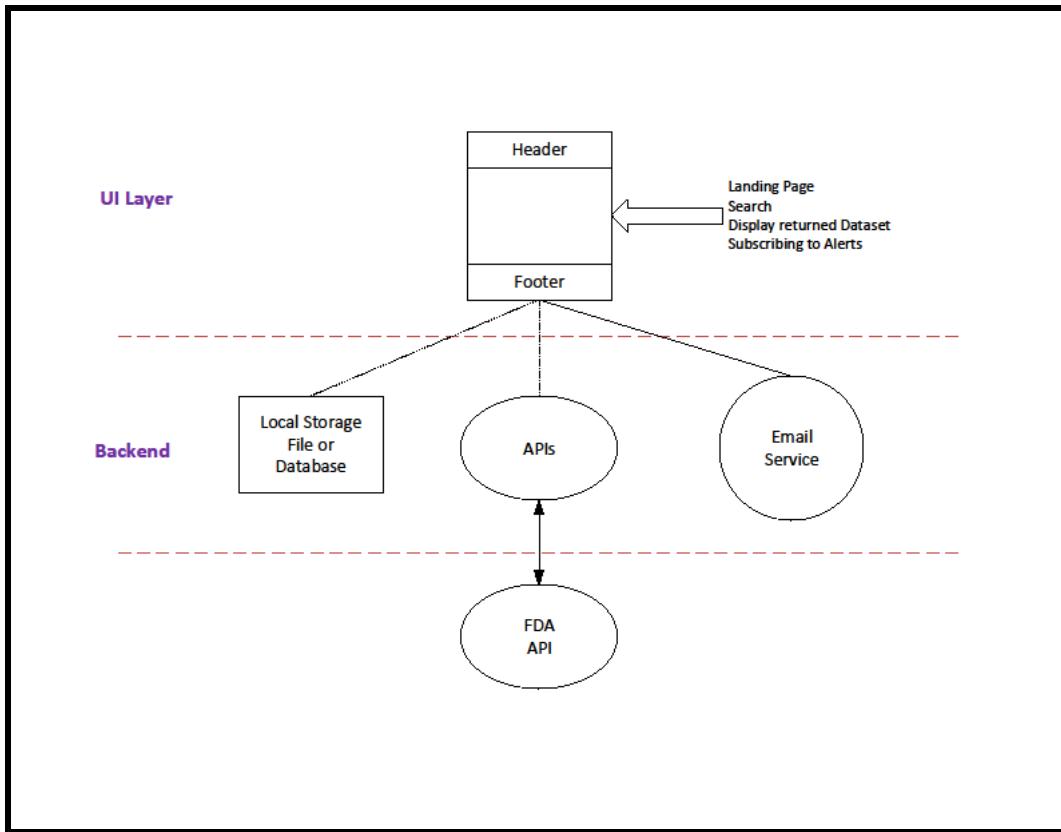


Figure 9. Initial Design Layout

g.4.6. Scope out the Activities for Week Ahead

Facilitated by the Scrum Master, the BE team interactively developed a week schedule to design, development, and deploy the prototype. A high-level sketch of the schedule was mocked-up on the whiteboard.

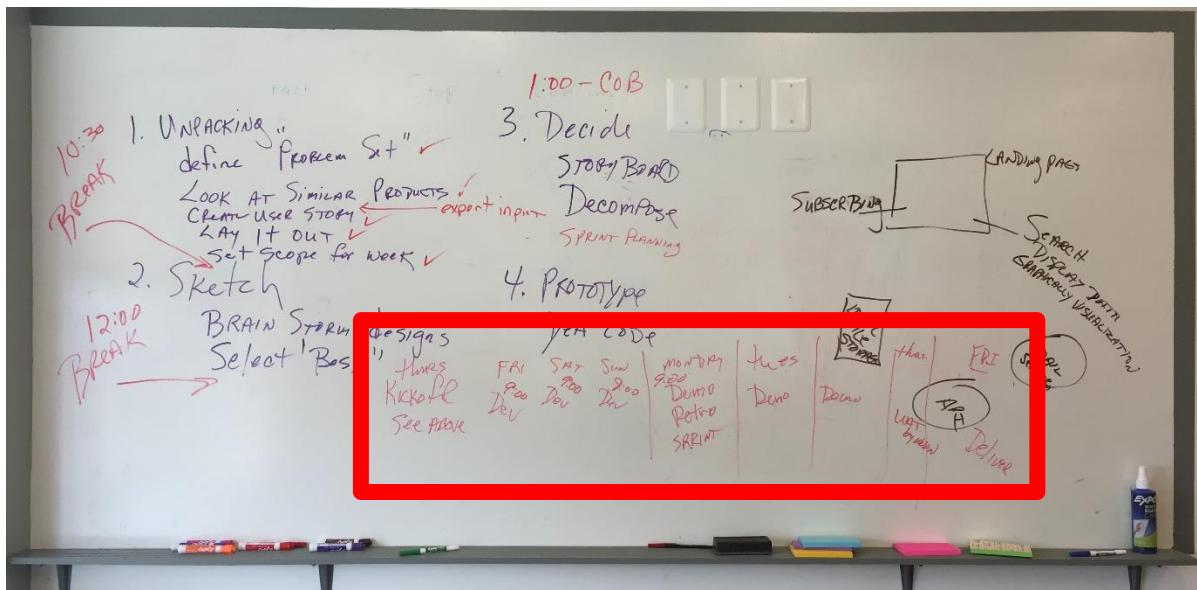


Figure 10. High-level schedule for the week

See the Approach and Schedule in the Project Plan for details.

g.5. Phase 2: Sketch

This section defines the BE Team's evidence gathered for Phase 2: Sketching

g.5.1. Draw Ideas for Prototype Design

Based on the initial design, BE conducted sketching during the ideation phase. Each team member sketched prototype design concepts on paper and presented their ideas to the team. Six different design sketch artifacts are captured below.

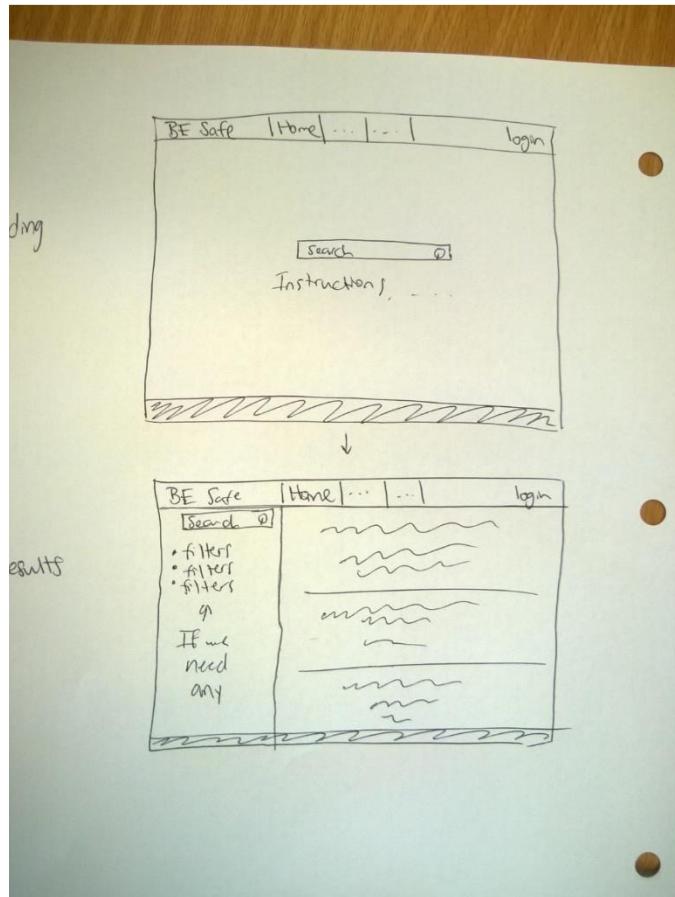


Figure 11. Sprint 1 Prototype Design Option 1



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Approach Criteria Evidence

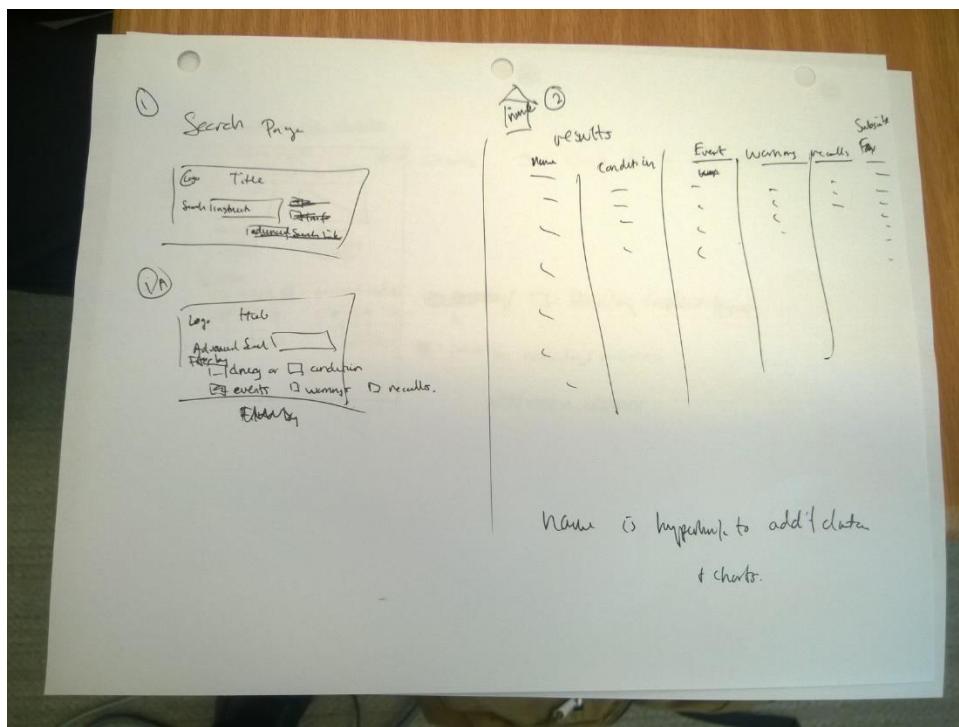


Figure 12. Sprint 1 Prototype Design Option 2

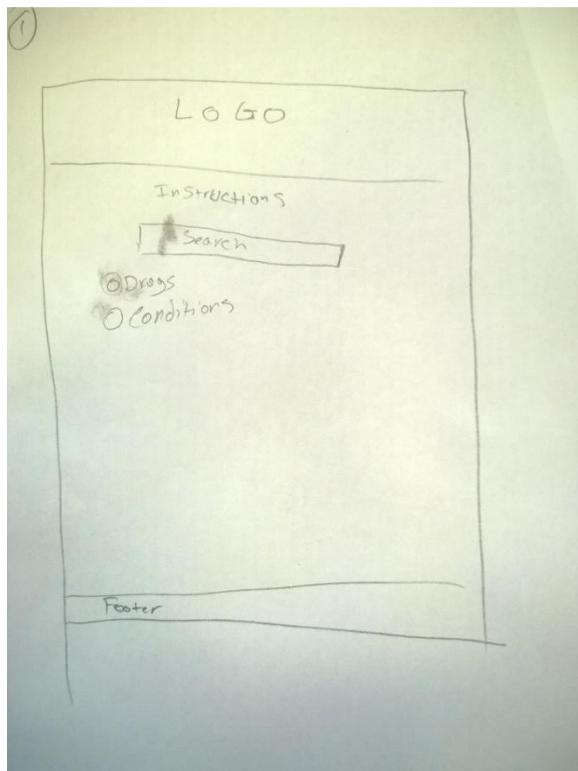


Figure 13. Sprint 1 Prototype Design Option 3, part 1



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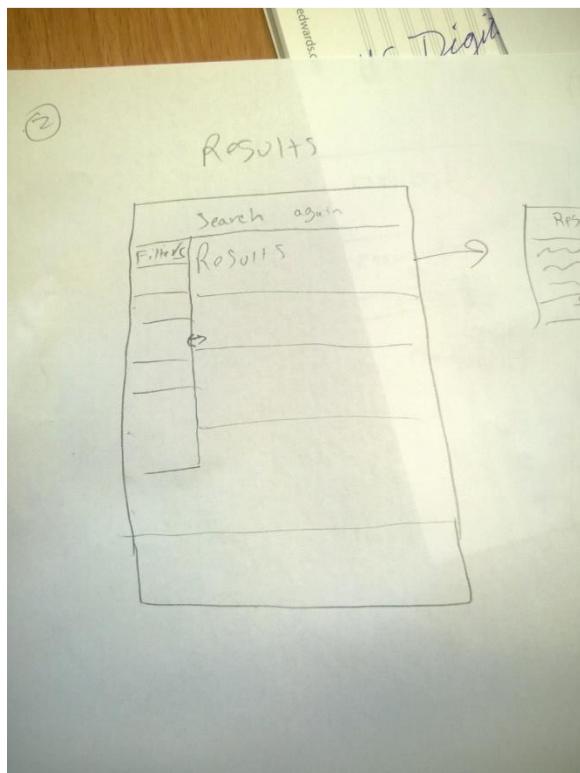


Figure 14. Sprint 1 Prototype Design Option 3, part 2

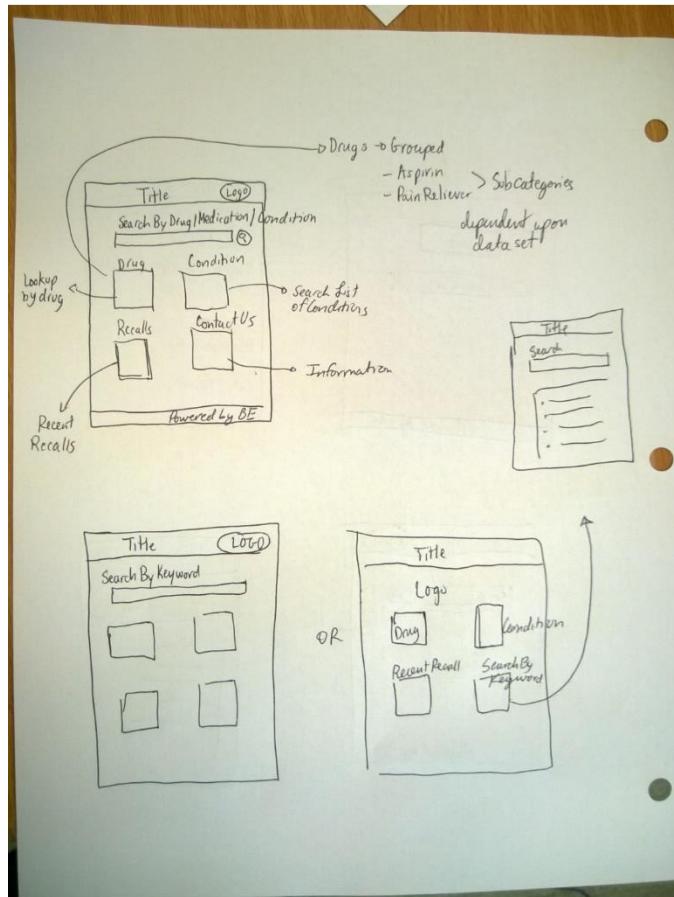


Figure 15. Sprint 1 Prototype Design Option 4, part 1

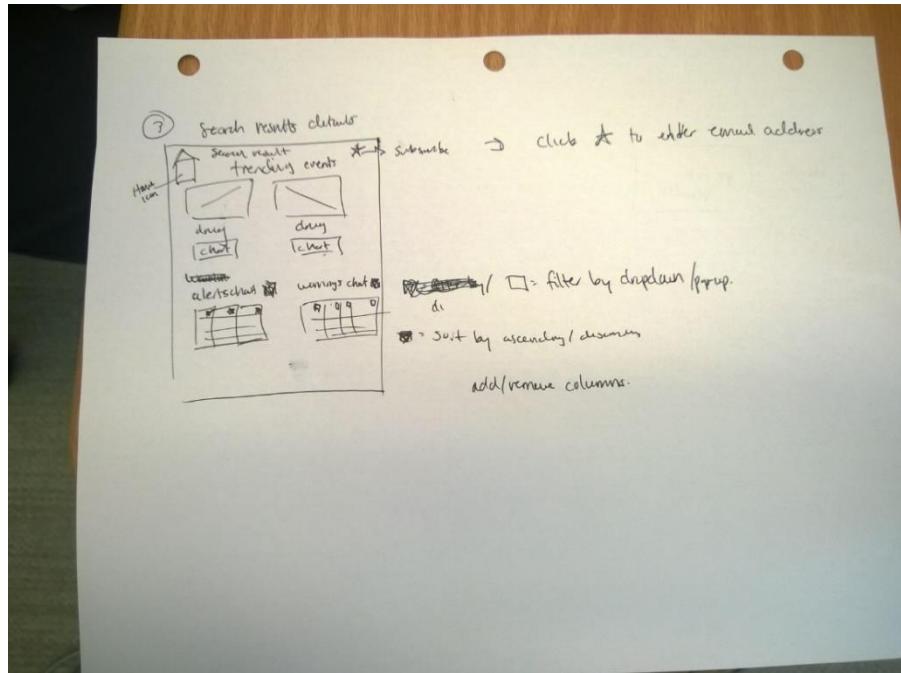


Figure 16. Sprint 1 Prototype Design Option 4, part 2

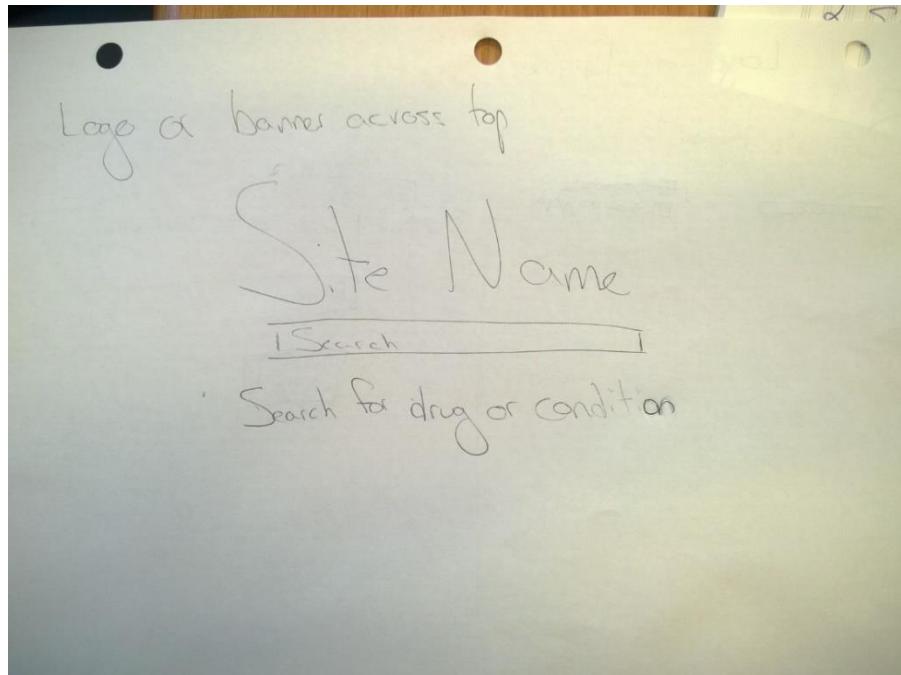


Figure 17. Sprint 1 Prototype Design Option 5



Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

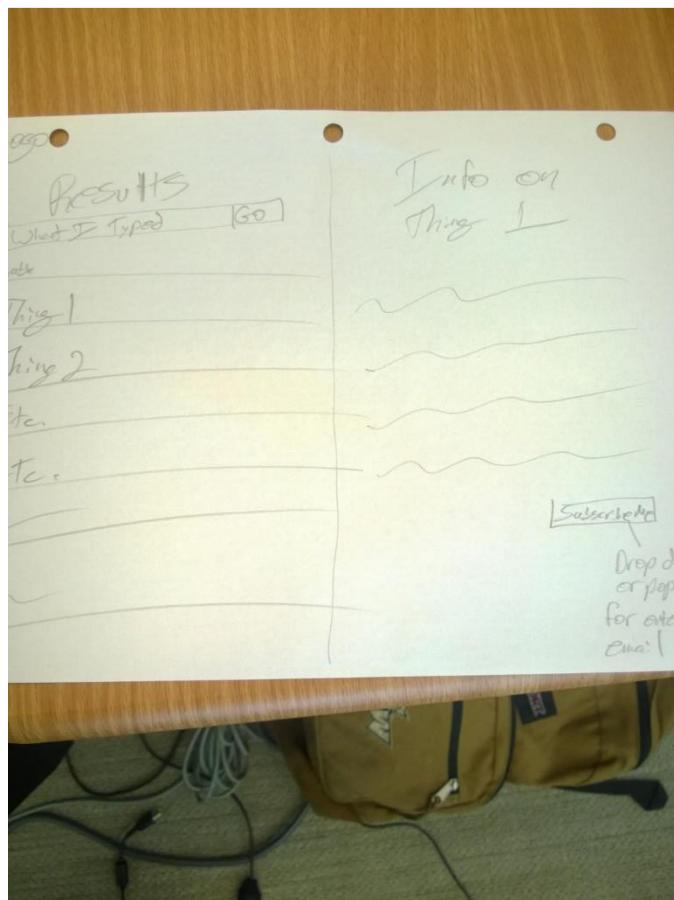


Figure 18. Sprint 1 Prototype Design Option 5, part 2

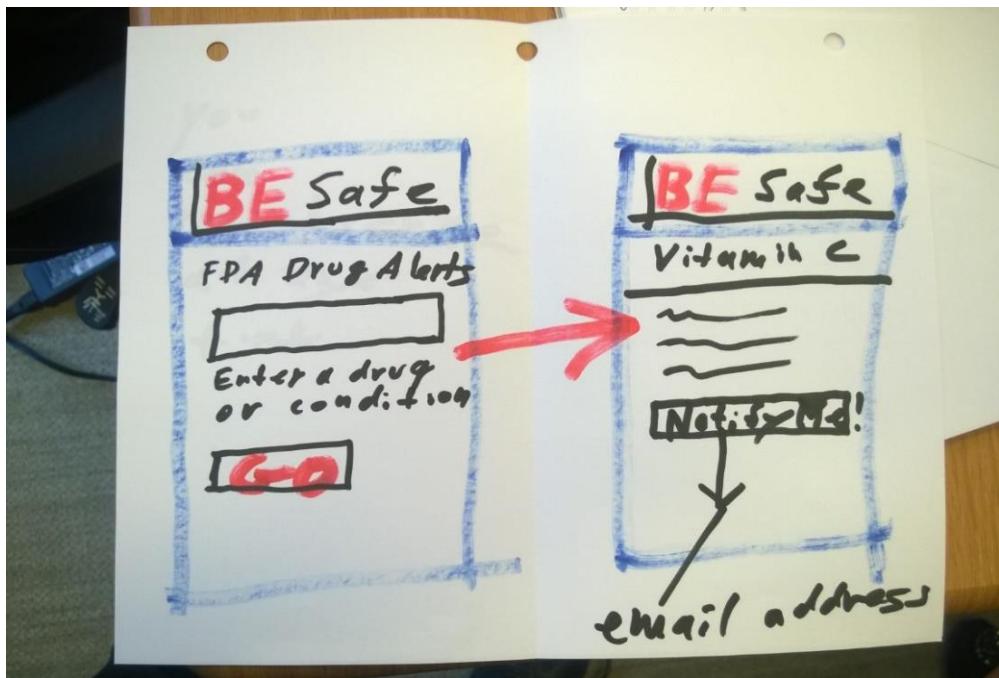


Figure 19. Sprint 1 Prototype Design Option 6

g.5.2. Select the Best design from Alternatives

While most of the team member sketches were similar in nature, the team selected one that was the “best” design and made sure it incorporated the common features included in most of the sketches.

g.6. Phase 3: Decide

This section defines the BE Team’s evidence gathered for Phase 3: Decide

g.6.1. Storyboard the Website

Led by the Scrum Master, the team conducted a brainstorming session for developing the storyboard for the site. We used a whiteboard for ease of modifying. The resulting design is the prototype concept, pictured below.

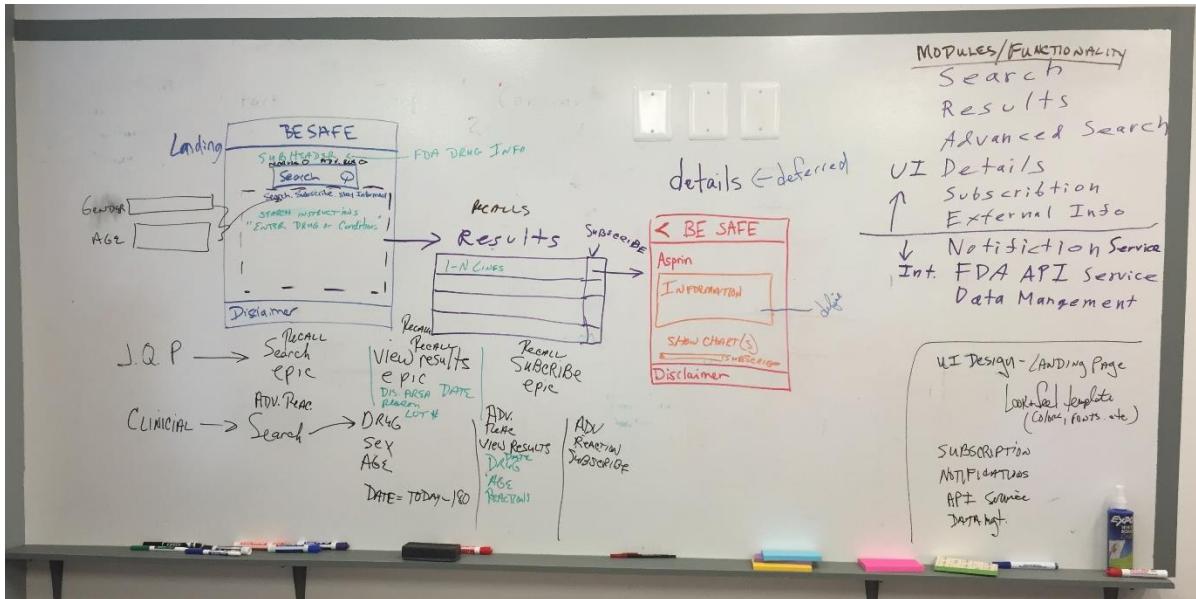


Figure 20. Prototype Storyboard on Whiteboard

g.6.2. Decompose Storyboard into User Stories

BE decomposed the storyboard into functional user stories. A photo of the user stories on the whiteboard is provided below.

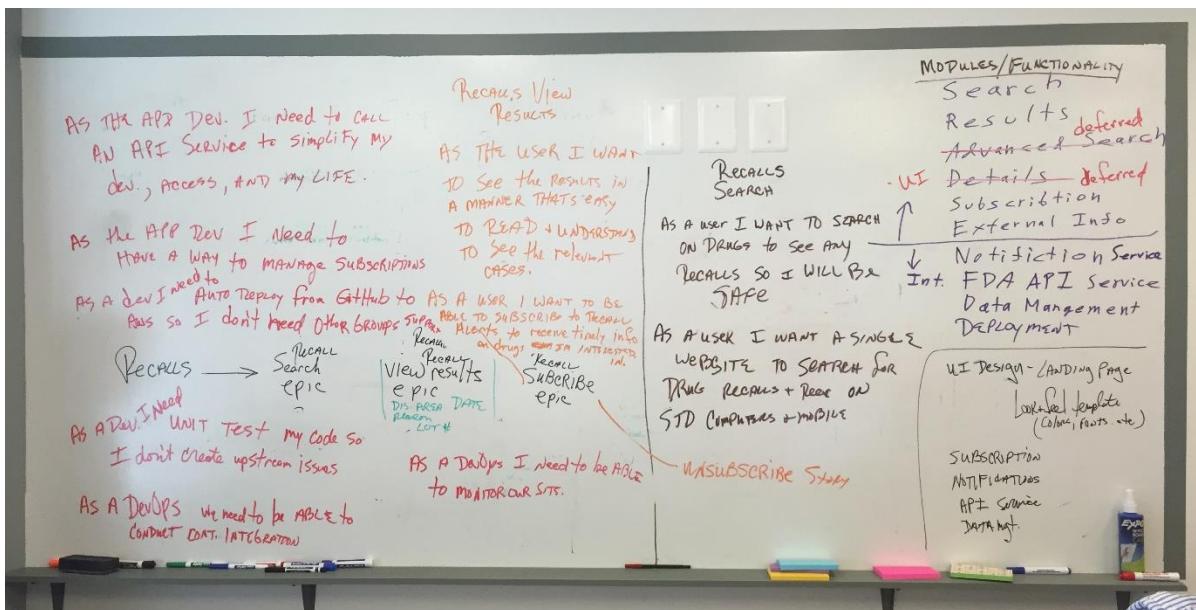
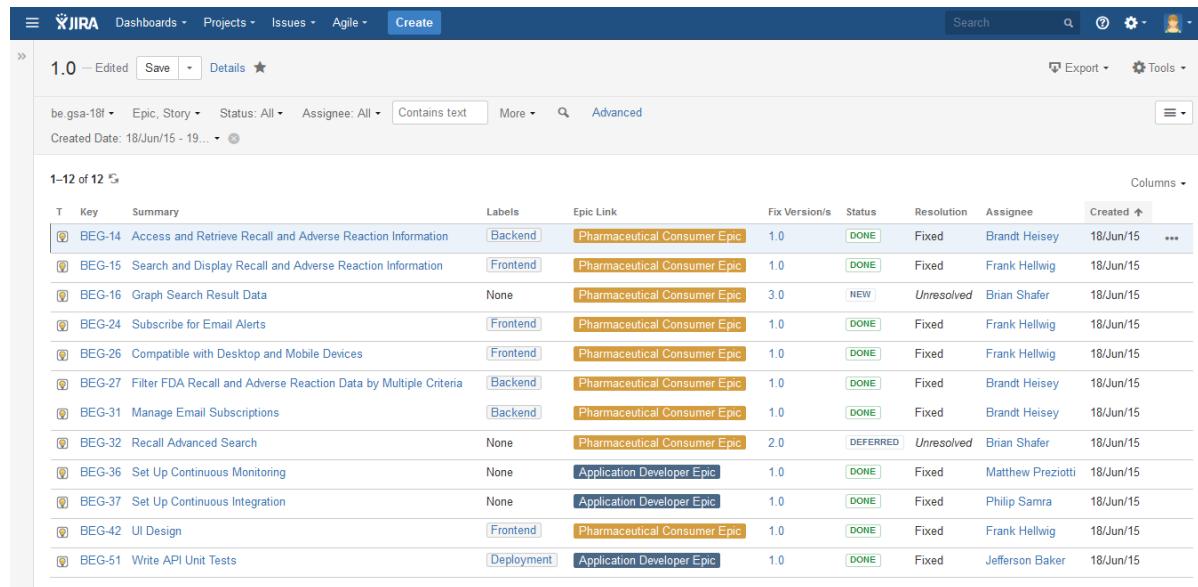


Figure 21. Decomposition of Storyboard into User Stories

The BE team then recorded and managed the user stories in JIRA.



The screenshot shows the JIRA interface with the following details:

- Project: be gsa-18f
- Type: Epic, Story
- Status: All
- Assignee: All
- Search filters: Contains text, Advanced
- Created Date: 18/Jun/15 - 19/Jun/15
- Table Headers: T, Key, Summary, Labels, Epic Link, Fix Version/s, Status, Resolution, Assignee, Created
- Table Data (12 rows):

T	Key	Summary	Labels	Epic Link	Fix Version/s	Status	Resolution	Assignee	Created
	BEG-14	Access and Retrieve Recall and Adverse Reaction Information	Backend	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-15	Search and Display Recall and Adverse Reaction Information	Frontend	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-16	Graph Search Result Data	None	Pharmaceutical Consumer Epic	3.0	NEW	Unresolved	Brian Shafer	18/Jun/15
	BEG-24	Subscribe for Email Alerts	Frontend	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-26	Compatible with Desktop and Mobile Devices	Frontend	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-27	Filter FDA Recall and Adverse Reaction Data by Multiple Criteria	Backend	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-31	Manage Email Subscriptions	Backend	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-32	Recall Advanced Search	None	Pharmaceutical Consumer Epic	2.0	DEFERRED	Unresolved	Brian Shafer	18/Jun/15
	BEG-36	Set Up Continuous Monitoring	None	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezotti	18/Jun/15
	BEG-37	Set Up Continuous Integration	None	Application Developer Epic	1.0	DONE	Fixed	Philip Samra	18/Jun/15
	BEG-42	UI Design	Frontend	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-51	Write API Unit Tests	Deployment	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	18/Jun/15

Figure 22. User Stories entered into JIRA

g.7.Phase 4: Prototype

This section defines the BE Team's evidence gathered for Phase 4: Prototype

g.7.1. Build the Prototype

BE will build the prototype incrementally following an Agile Scrum methodology

BE designed and developed a prototype based on the flushed out user stories and tasks defined during the Ideation Phase of human-centered design (See Evidence Approach D). Following the Google Venture 5 day model of unpacking, sketching and deciding, user stories were prioritized during the Sprint Planning Meeting for Sprint 1. Using an iterative Agile approach, BE Safe was developed over multiple short sprints, reprioritizing user stories based on feedback from the Product Owner and usability testing.

g.7.2. Product Roadmap

Based on the results from **Phase 3: Decide**, the BE team determined that not all features identified would be included in the first release of the prototype. The Product Owner defined the prioritization of features based on what is known from the user community today. The features have been categorized into 4 categories that serve as the product roadmap:

- Release version 1.0: BE Safe Recalls, Adverse Reactions and Interactive Experience
- Release version 2.0: BE Safe Search Labels/Known Drug Interactions
- Release version 3.0: BE Safe Graphing
- Release version 4.0: Be Safe Manage Alert Frequency

The roadmap may be modified as the Product Owner's priorities change. An image of the release versions from JIRA is below. Details for the Product Roadmap are located in the Release Plans section below.

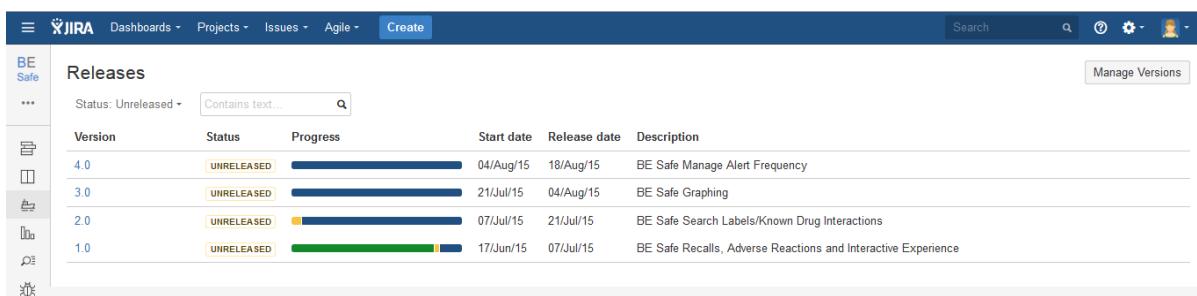


Figure 23. BE Safe Product Roadmap

g.7.3. Product Backlog

Throughout the software development lifecycle of BE Safe, the team collected epics, user stories, tasks and bugs from the Product Owner and testing to form a product backlog. The team used JIRA to manage the Product Backlog for BE Safe.



The screenshot shows the JIRA Product Backlog interface. On the left is a sidebar with various icons and a vertical scroll bar. The main area displays a backlog of 24 issues. The issues are organized into three main sections: Sprint 6 - Prototype (21 issues), Sprint 7 - Prototype (5 issues), and Backlog (24 issues). Each issue card includes a summary, description, assignee, status, priority, and labels. Labels include Consumer Interaction, Pharmaceutical Co., Application Dev., and Usability-Test-Results. The interface also features a search bar, filter options, and buttons for starting a sprint and creating a new sprint.

Issue	Description	Status	Priority	Labels
BEG-102	Inject Me Too data in database	Kelsey Mason	Deferred	Backend
BEG-71	View Related Links	Brian Shafer	New	None
BEG-121	Add Search on Known Drug Interactions (labels)	Frank Hellwig	Deferred	Usability-Test-Results
BEG-140	Get API for labels	Brian Shafer	Deferred	None
BEG-143	Get 3rd endpoint for label API	Kelsey Mason	Deferred	None
BEG-144	Qualify the results returned by the label endpoint	Matthew Prezziotti	Deferred	None
BEG-150	Evaluate Non-OpenFDA APIs	Frank Hellwig	Deferred	None
BEG-125	Search on generic names	Brian Shafer	Deferred	Usability-Test-Results
BEG-113	Add hover-text on medical terms	Brian Shafer	New	Frontend, Usability-Test-Results
BEG-115	Search on reaction term(s)	Brian Shafer	New	Frontend, Usability-Test-Results
BEG-110	Photograph and upload Photos for search queries	Brian Shafer	New	Backend, Frontend, Usability-Test-Results
BEG-85	Display Feedback Metrics	Brian Shafer	New	Frontend
BEG-68	Create User Accounts	Brian Shafer	New	None
BEG-16	Graph Search Result Data	Brian Shafer	New	None
BEG-32	Recall Advanced Search	Brian Shafer	Deferred	None
BEG-74	Connect with FDA's social media	Brian Shafer	New	None
BEG-101	Share Search Query via email and text	Brian Shafer	New	Frontend
BEG-107	Search icon not completely visible on iOS mobile during/after editing search text	Frank Hellwig	New	Usability-Test-Results
BEG-132	Rank/Prioritize data based on hot-button words	Brian Shafer	Deferred	Usability-Test-Results
BEG-109	Search a drug for both Recalls and Adverse Reactions in 1 search query	Brian Shafer	Reopened	Backend, Frontend, Usability-Test-Results

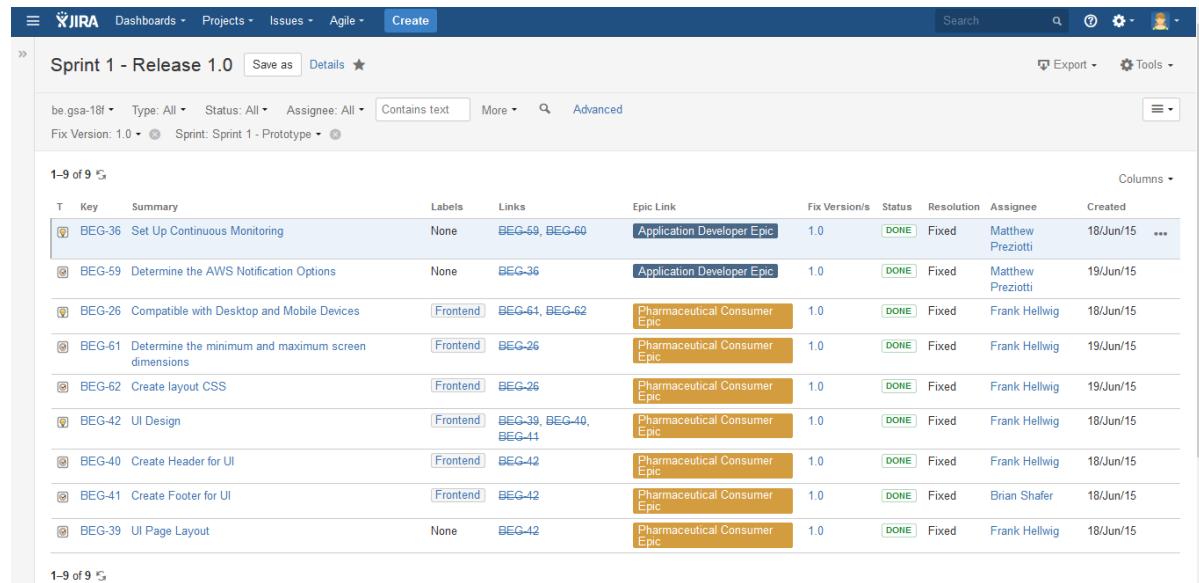
Figure 24. Product Backlog

During the Sprint Planning Meetings, issues logged in the Product Backlog were re-prioritized by the Product Owner. High priority items were selected for the upcoming sprint.

g.7.3.1. Sprint 1

The following artifacts reflect the Agile Scrum development process for Sprint 1: JIRA sprint backlog, JIRA sprint report, sprint burndown chart, sprint velocity metric, and sprint retrospective.

g.7.3.1.1. Backlog



The screenshot shows a JIRA backlog page titled "Sprint 1 - Release 1.0". The backlog contains 9 items, each with a key, summary, labels, links, epic link, fix version/s, status, resolution, assignee, and created date. The items are categorized by epic link into "Application Developer Epic" (3 items) and "Pharmaceutical Consumer Epic" (6 items). The status for all items is "DONE" and the resolution is "Fixed". The assignee varies by item, including Matthew Preziotti, Frank Hellwig, and Brian Shafer.

T	Key	Summary	Labels	Links	Epic Link	Fix Version/s	Status	Resolution	Assignee	Created
1	BEG-36	Set Up Continuous Monitoring	None	BEG-59, BEG-60	Application Developer Epic	1.0	DONE	Fixed	Matthew Preziotti	18/Jun/15 ...
2	BEG-59	Determine the AWS Notification Options	None	BEG-36	Application Developer Epic	1.0	DONE	Fixed	Matthew Preziotti	19/Jun/15
3	BEG-26	Compatible with Desktop and Mobile Devices	Frontend	BEG-61, BEG-62	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
4	BEG-61	Determine the minimum and maximum screen dimensions	Frontend	BEG-26	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	19/Jun/15
5	BEG-62	Create layout CSS	Frontend	BEG-26	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	19/Jun/15
6	BEG-42	UI Design	Frontend	BEG-39, BEG-40, BEG-41	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
7	BEG-40	Create Header for UI	Frontend	BEG-42	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
8	BEG-41	Create Footer for UI	Frontend	BEG-42	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brian Shafer	18/Jun/15
9	BEG-39	UI Page Layout	None	BEG-42	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15

Figure 25. Sprint 1 Backlog



Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

Reports: Sprint Report -

Sprint Report Sprint 1 - Prototype [How to read this chart](#)

Closed Sprint, ended by Lauren Turbeville 19/Jun/15 1:00 PM - 22/Jun/15 12:29 PM [Linked pages](#) [View Sprint 1 - Prototype in Issue Navigator](#)



Status Report [View in Issue Navigator](#)

Issues Not Completed [View in Issue Navigator](#)

Key	Summary	Issue Type	Priority	Status	Story Points (28)
BEG-26	Compatible with Desktop and Mobile Devices	Story	Medium	RESOLVED	4
BEG-36	Set Up Continuous Monitoring	Story	Medium	RESOLVED	8
BEG-39	UI Page Layout	Task	Medium	RESOLVED	-
BEG-40	Create Header for UI	Task	Medium	RESOLVED	-
BEG-41	Create Footer for UI	Task	Medium	RESOLVED	-
BEG-42	UI Design	Story	Medium	RESOLVED	16
BEG-59	Determine the AWS Notification Options	Task	Medium	RESOLVED	-
BEG-61	Determine the minimum and maximum screen dimensions	Task	Medium	RESOLVED	-
BEG-62	Create layout CSS	Task	Medium	RESOLVED	-

Issues Removed From Sprint [View in Issue Navigator](#)

Key	Summary	Issue Type	Priority	Status	Story Points (56)
BEG-14	Access and Retrieve Recall and Adverse Reaction Information	Story	Medium	IN PROGRESS	10
BEG-15	Search and Display Recall and Adverse Reaction Information	Story	Medium	IN PROGRESS	10
BEG-24	Subscribe for Email Alerts	Story	Medium	IN PROGRESS	6
BEG-27	Filter FDA Recall and Adverse Reaction Data by Multiple Criteria	Story	Medium	IN PROGRESS	8
BEG-31	Manage Email Subscriptions	Story	Medium	IN PROGRESS	6
BEG-33	Set Up Automated Testing	Task	Medium	IN PROGRESS	-
BEG-34	Set Up Auto Deploy from GitHub	Task	Medium	IN PROGRESS	-
BEG-37	Set Up Continuous Integration	Story	Medium	IN PROGRESS	8
BEG-44	Create Search Service	Task	Medium	IN PROGRESS	-
BEG-45	Pre-Process Results to limit amount of Data passed back to Client	Task	Medium	IN PROGRESS	-
BEG-46	Display Each result as a Row on Screen	Task	Medium	IN PROGRESS	-
BEG-47	Provide a Place for User to submit Email Address	Task	Medium	IN PROGRESS	-
BEG-47	Provide a Place for User to submit Email Address	Task	Medium	IN PROGRESS	-
BEG-48	Provide a link in an email to allow unsubscribing	Task	Medium	IN PROGRESS	-
BEG-49	Create Service to Manage Subscriptions	Task	Medium	IN PROGRESS	-
BEG-50	Write Subscript Management API Endpoint Tests	Task	Medium	IN PROGRESS	-
BEG-51	Write API Unit Tests	Story	Medium	IN PROGRESS	8
BEG-52	Write Recall API Endpoint Tests	Task	Medium	IN PROGRESS	-
BEG-54	Storage of Alert Subscriptions	Task	Medium	IN PROGRESS	-
BEG-58	Write Adverse Reaction API Endpoint Tests	Task	Medium	IN PROGRESS	-
BEG-60	Set Up Dev Ops Team Email Notifications	Task	Medium	IN PROGRESS	-
BEG-63	Create the search and result view for recalls and adverse reactions	Task	Medium	IN PROGRESS	-
BEG-64	Create the service to access the recall and adverse reaction API endpoint	Task	Medium	IN PROGRESS	-
BEG-65	Create the HTTP helper utility to access the FDA API	Task	Medium	IN PROGRESS	-
BEG-66	Create the API endpoints for recall and adverse reaction data.	Task	Medium	IN PROGRESS	-

Figure 26. Sprint 1 Report



g.7.3.1.2. Burn-down Chart

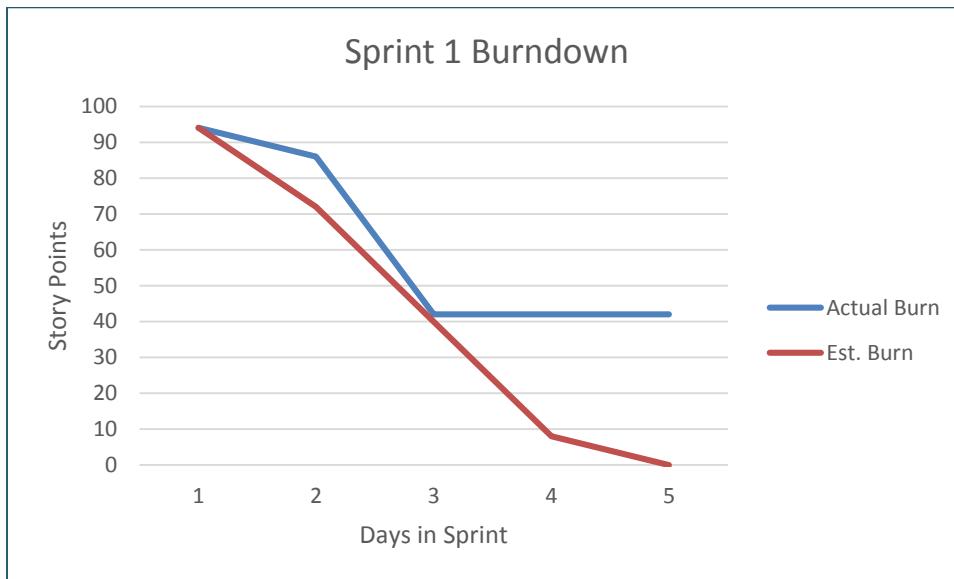


Figure 27. Sprint 1 Burn-down Chart

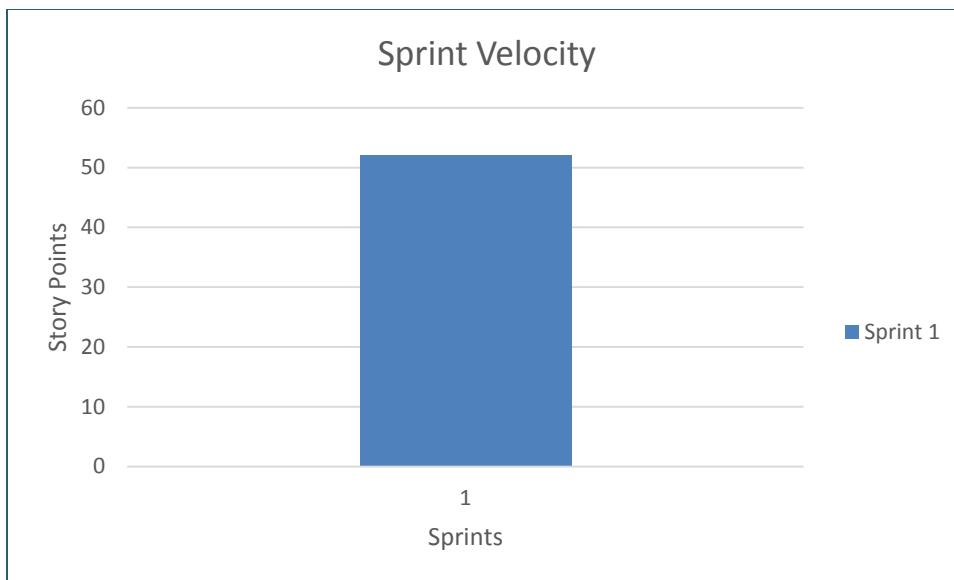


Figure 28. Sprint 1 Velocity

g.7.3.1.3. Retrospective

What Went Well	What Could Have Gone Better
1. Effectively executed Google Venture 5-Day Design Model	1. Better defined prototype requirements or access to 18F stakeholders for Q&A.
2. Clean & Responsive UI	2. Better defined user story updating process during the Sprint.

<p>3. Communications and responsiveness among team</p>	<p>3. Mitigation of schedule conflicts for some team resources.</p>
What Would You Fix?	
<p>1. Define User Story updating process and monitoring compliance.</p>	

Figure 29. Sprint 1 Retrospective Results

A photo of the Sprint 1 Retrospective is included below.

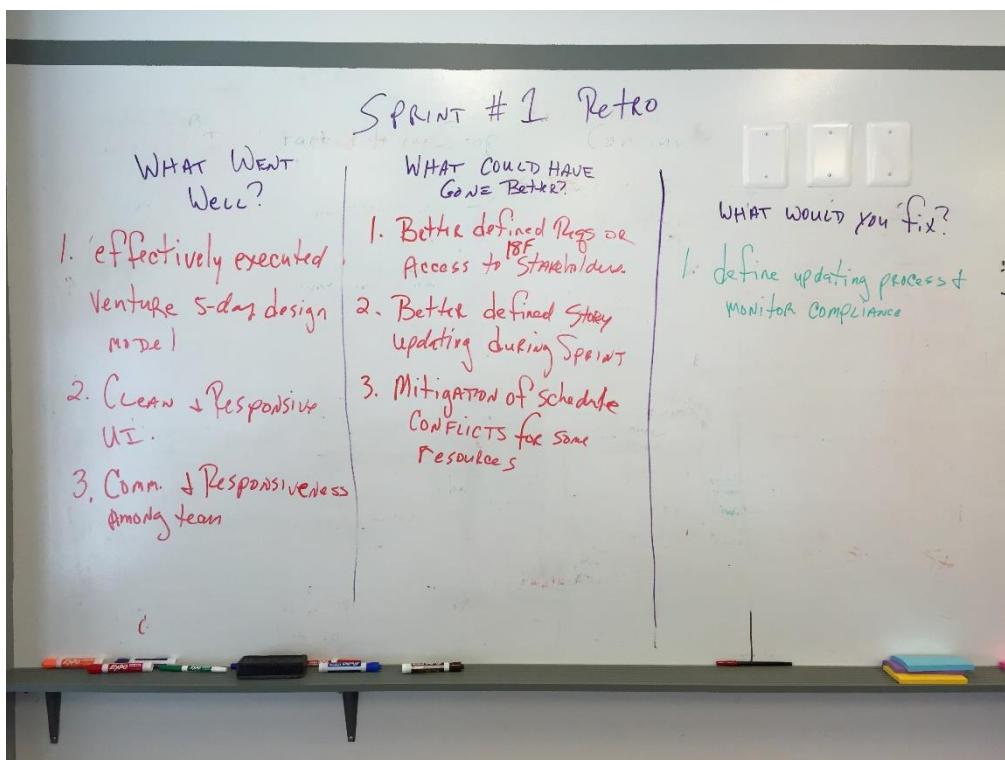


Figure 30. Sprint 1 Retrospective Photo

g.7.3.2. Sprint 2

The following artifacts reflect the Agile Scrum development process for Sprint 2: JIRA sprint backlog, JIRA sprint report, sprint burn-down chart, sprint velocity metric, and sprint retrospective.



g.7.3.2.1. Backlog

JIRA Dashboards Projects Issues Agile Create

Sprint 2 - Release 1.0 Save as Details ★

be.gsa-18f Type: All Status: All Assignee: All Contains text More Advanced

Fix Version: 1.0 Sprint: Sprint 2 - Prototype

1-35 of 35

T	Key	Summary	Labels	Links	Epic Link	Fix Version/s	Status	Resolution	Assignee	Created
	BEG-31	Manage Email Subscriptions	Backend	BEG-49, BEG-54	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-48	Provide a link in an email to allow unsubscribing	Frontend	BEG-24	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-49	Create Service to Manage Subscriptions	Backend	BEG-31	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-54	Storage of Alert Subscriptions	Backend	BEG-31	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	19/Jun/15
	BEG-51	Write API Unit Tests	Deployment	BEG-50, BEG-52, BEG-58	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	18/Jun/15
	BEG-52	Write Recall API Endpoint Tests	Deployment	BEG-51	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	18/Jun/15
	BEG-58	Write Adverse Reaction API Endpoint Tests	Deployment	BEG-51	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	19/Jun/15
	BEG-50	Write Script Management API Endpoint Tests	Deployment	BEG-51	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	18/Jun/15
	BEG-33	Set Up Automated Testing	None	BEG-37	Application Developer Epic	1.0	DONE	Fixed	Philip Samra	18/Jun/15
	BEG-75	Implement App Security	None	BEG-92	Application Developer Epic	1.0	DONE	Fixed	Tad Miller	22/Jun/15
	BEG-24	Subscribe for Email Alerts	Frontend	BEG-47, BEG-48	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-37	Set Up Continuous Integration	None	BEG-33, BEG-34	Application Developer Epic	1.0	DONE	Fixed	Philip Samra	18/Jun/15
	BEG-34	Set Up Auto Deploy from GitHub	None	BEG-37	Application Developer Epic	1.0	DONE	Fixed	Philip Samra	18/Jun/15
	BEG-36	Set Up Continuous Monitoring	None	BEG-59, BEG-60	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezziotti	18/Jun/15
	BEG-59	Determine the AWS Notification Options	None	BEG-36	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezziotti	19/Jun/15
	BEG-60	Set Up Dev Ops Team Email Notifications	None	BEG-36	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezziotti	19/Jun/15
	BEG-26	Compatible with Desktop and Mobile Devices	Frontend	BEG-61, BEG-62	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-61	Determine the minimum and maximum screen dimensions	Frontend	BEG-26	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	19/Jun/15
	BEG-62	Create layout CSS	Frontend	BEG-26	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	19/Jun/15
	BEG-42	UI Design	Frontend	BEG-39, BEG-40, BEG-41	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-40	Create Header for UI	Frontend	BEG-42	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-41	Create Footer for UI	Frontend	BEG-42	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brian Shafer	18/Jun/15
	BEG-39	UI Page Layout	None	BEG-42	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-15	Search and Display Recall and Adverse Reaction Information	Frontend	BEG-46, BEG-63, BEG-64	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-63	Create the search and result view for recalls and adverse reactions	Frontend	BEG-15	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	19/Jun/15
	BEG-46	Display Each result as a Row on Screen	Frontend	BEG-15	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-64	Create the service to access the recall and adverse reaction API endpoint	Frontend	BEG-15	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	19/Jun/15
	BEG-14	Access and Retrieve Recall and Adverse Reaction Information	Backend	BEG-65, BEG-66	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-65	Create the HTTP helper utility to access the FDA API	None	BEG-14	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	19/Jun/15
	BEG-66	Create the API endpoints for recall and adverse reaction data.	None	BEG-14	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	19/Jun/15
	BEG-47	Provide a Place for User to submit Email Address	Frontend	BEG-24	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	18/Jun/15
	BEG-27	Filter FDA Recall and Adverse Reaction Data by Multiple Criteria	Backend	BEG-44, BEG-45	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-45	Pre-Process Results to limit amount of Data passed back to Client	Backend	BEG-27	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-44	Create Search Service	Backend	BEG-27	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
	BEG-77	Update UI based on Feedback from Sprint 1 Demo	Frontend		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	22/Jun/15

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Figure 31. Sprint 2 Backlog

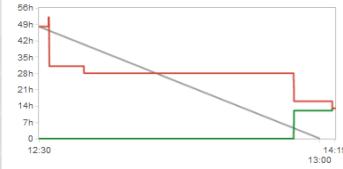


Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

Reports: Sprint Report -

Sprint Report Sprint 2 - Prototype ⓘ How to read this chart

Closed Sprint, ended by Lauren Turbeville 22/Jun/15 12:30 PM - 23/Jun/15 2:19 PM [Linked pages](#) [View Sprint 2 - Prototype in Issue Navigator](#)



Status Report * Issue added to sprint after start time

[View in Issue Navigator](#)

Completed Issues

Key	Summary	Issue Type	Priority	Status	Story Points (52)
BEG-14	Access and Retrieve Recall and Adverse Reaction Information	Story	Medium	DONE	10
BEG-15	Search and Display Recall and Adverse Reaction Information	Story	Medium	DONE	10
BEG-26	Compatible with Desktop and Mobile Devices	Story	Medium	DONE	4
BEG-27	Filter FDA Recall and Adverse Reaction Data by Multiple Criteria	Story	Medium	DONE	8
BEG-39	UI Page Layout	Task	Medium	DONE	-
BEG-40	Create Header for UI	Task	Medium	DONE	-
BEG-41	Create Footer for UI	Task	Medium	DONE	-
BEG-42	UI Design	Story	Medium	DONE	16
BEG-44	Create Search Service	Task	Medium	DONE	-
BEG-45	Pre-Process Results to limit amount of Data passed back to Client	Task	Medium	DONE	-
BEG-46	Display Each result as a Row on Screen	Task	Medium	DONE	-
BEG-47	Provide a Place for User to submit Email Address	Task	Medium	DONE	-
BEG-61	Determine the minimum and maximum screen dimensions	Task	Medium	DONE	-
BEG-62	Create layout CSS	Task	Medium	DONE	-
BEG-63	Create the search and result view for recalls and adverse reactions	Task	Medium	DONE	-
BEG-64	Create the service to access the recall and adverse reaction API endpoint	Task	Medium	DONE	-
BEG-65	Create the HTTP helper utility to access the FDA API	Task	Medium	DONE	-
BEG-66	Create the API endpoints for recall and adverse reaction data.	Task	Medium	DONE	-
BEG-77	Update UI based on Feedback from Sprint 1 Demo	Story	Medium	DONE	4

[View in Issue Navigator](#)

Issues Not Completed

Key	Summary	Issue Type	Priority	Status	Story Points (46)
BEG-24	Subscribe for Email Alerts	Story	Medium	IN PROGRESS	6
BEG-31	Manage Email Subscriptions	Story	Medium	IN PROGRESS	6
BEG-33	Set Up Automated Testing	Task	Medium	IN PROGRESS	-
BEG-34	Set Up Auto Deploy from GitHub	Task	Medium	IN PROGRESS	-
BEG-36	Set Up Continuous Monitoring	Story	Medium	REOPENED	8
BEG-34	Set Up Auto Deploy from GitHub	Task	Medium	IN PROGRESS	-
BEG-36	Set Up Continuous Monitoring	Story	Medium	REOPENED	8
BEG-37	Set Up Continuous Integration	Story	Medium	IN PROGRESS	8
BEG-48	Provide a link in an email to allow unsubscribing	Task	Medium	IN TESTING	-
BEG-49	Create Service to Manage Subscriptions	Task	Medium	IN PROGRESS	-
BEG-50	Write Subscription Management API Endpoint Tests	Task	Medium	RESOLVED	-
BEG-51	Write API Unit Tests	Story	Medium	RESOLVED	18
BEG-52	Write Recall API Endpoint Tests	Task	Medium	RESOLVED	-
BEG-54	Storage of Alert Subscriptions	Task	Medium	RESOLVED	-
BEG-58	Write Adverse Reaction API Endpoint Tests	Task	Medium	RESOLVED	-
BEG-59	Determine the AWS Notification Options	Task	Medium	REOPENED	-
BEG-60	Set Up Dev Ops Team Email Notifications	Task	Medium	IN PROGRESS	-
BEG-75 *	Implement App Security	Story	Medium	IN PROGRESS	-

[View in Issue Navigator](#)

Figure 32. Sprint 2 Report



g.7.3.2.2. Burn-down Chart



Figure 33. Sprint 2 Burn-down Chart

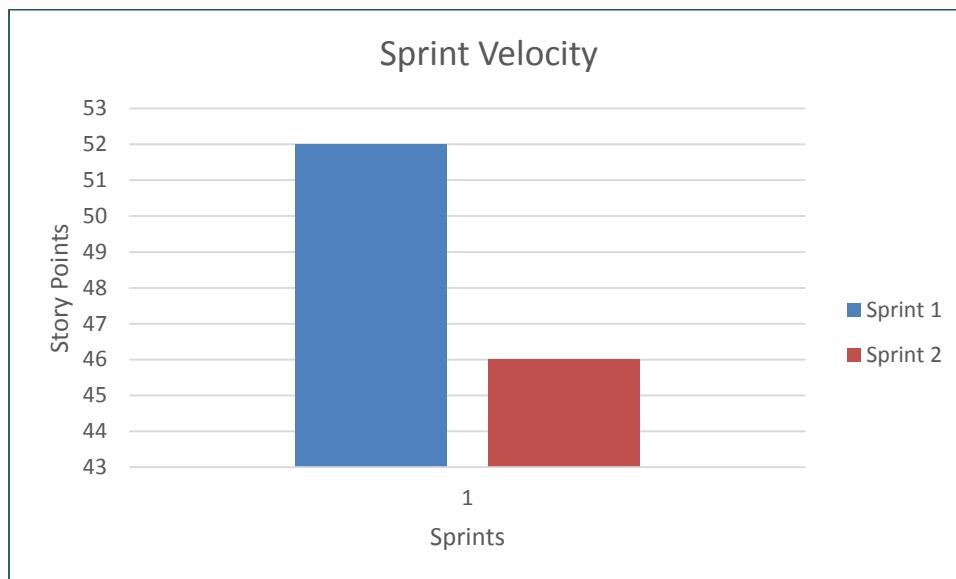


Figure 34. Sprint 2 Velocity

g.7.3.2.3. Retrospective

What Went Well	What Could Have Gone Better
4. Implemented UI updates from the Sprint #1 demo.	4. Improve User Story estimating or decomposing of tasks
5. Addressed some important routing challenges – Alternate solutioning.	5. Better prioritization of new requirements vs existing requirements.

	6. Minimize assumptions across team members, especially the development personnel.
What Would You Fix?	
	2. Minimize assumptions across team members. Better communicate during the course of the day via email or in-person communications.

Figure 35. Sprint 2 Retrospective Results

A photo of the Sprint 2 Retrospective is included below.

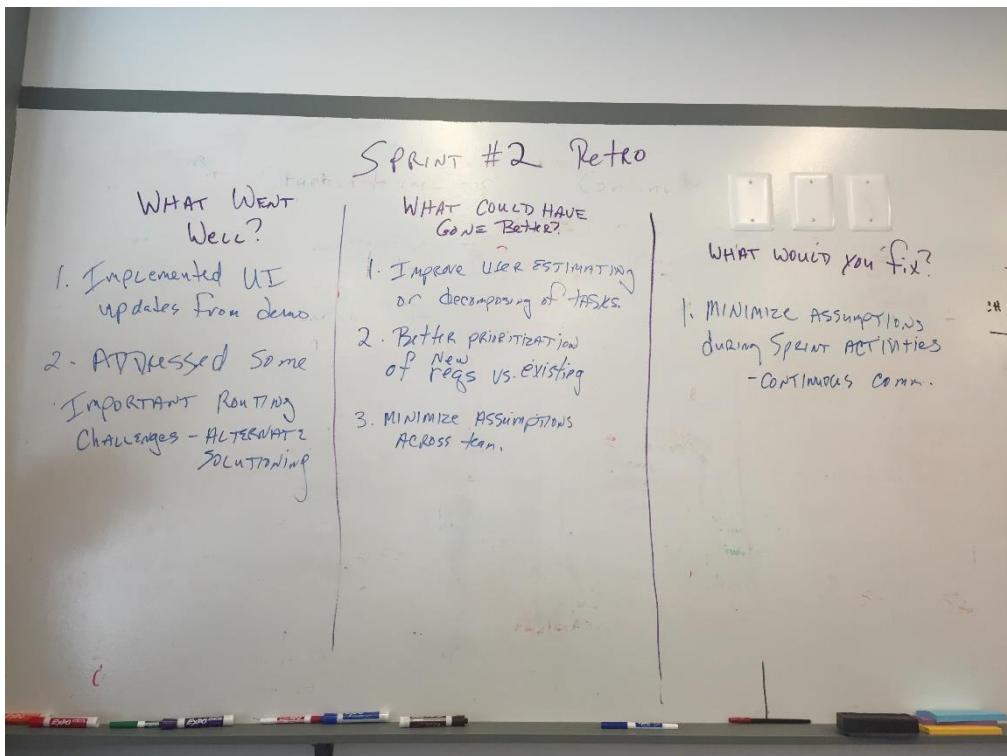


Figure 36. Sprint 2 Retrospective

g.7.3.3. Sprint 3

The following artifacts reflect the Agile Scrum development process for Sprint 3: JIRA sprint backlog, JIRA sprint report, sprint burn-down chart, sprint velocity metric, and sprint retrospective.



g.7.3.3.1. Backlog

Sprint 3 - Release 1.0							
be gsa-18I Type: All Status: All Assignee: All Contains text More Advanced							
Fix Version: 1.0 Sprint: Sprint 3 - Prototype							
1-39 of 39 G							
Key	Summary	Labels	Epic Link	Fix Version/s	Status	Resolution	Assignee
BEG-91	Do not Publish Credentials in GitHub Repo	None	Application Developer Epic	1.0	DONE	Fixed	Brandt Heisey 23/Jun/15
BEG-89	Virtually Deploy Application in a Container	None	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey 23/Jun/15
BEG-90	Configure Docker with BE Safe application dependencies	None	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey 23/Jun/15
BEG-93	Lockdown GitHub Prior to Deployment	[Deployment]	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig 23/Jun/15
BEG-99	Execute GitHub lockdown	[Deployment]	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig 24/Jun/15
BEG-98	Test publish to locked-down GitHub	[Deployment]	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig 24/Jun/15
BEG-92	Secure Prototype with HTTPS	[Frontend]	Application Developer Epic	1.0	RESOLVED	Unresolved	Brandt Heisey 23/Jun/15
BEG-97	Test Deploy App in Container to Another Machine	[Deployment]	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey 24/Jun/15
BEG-76	Conduct UAT	None	Application Developer Epic	1.0	DONE	Fixed	Lauren Turville 22/Jun/15
BEG-104	Load delays	[Usability-Test-Results]	Application Developer Epic	1.0	DONE	Fixed	Frank Hellwig 24/Jun/15
BEG-95	Responsive Design for Tablets and Mobile	[Frontend]	Application Developer Epic	1.0	DONE	Fixed	Frank Hellwig 23/Jun/15
BEG-83	Share Search Query with Social Media	[Frontend]	Consumer Interaction	1.0	DONE	Fixed	Jefferson Baker 23/Jun/15
BEG-105	Text Changes to UI labels/headers	[Frontend] [Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig 24/Jun/15
BEG-31	Manage Email Subscriptions	[Backend]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey 18/Jun/15
BEG-48	Provide a link in an email to allow unsubscribing	[Frontend]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey 18/Jun/15
BEG-49	Create Service to Manage Subscriptions	[Backend]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey 18/Jun/15
BEG-54	Storage of Alert Subscriptions	[Backend]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey 19/Jun/15
BEG-51	Write API Unit Tests	[Deployment]	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker 18/Jun/15
BEG-52	Write Recall API Endpoint Tests	[Deployment]	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker 18/Jun/15
BEG-58	Write Adverse Reaction API Endpoint Tests	[Deployment]	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker 19/Jun/15
BEG-60	Write Subscript Management API Endpoint Tests	[Deployment]	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker 18/Jun/15
BEG-33	Set Up Automated Testing	None	Application Developer Epic	1.0	DONE	Fixed	Philip Samra 18/Jun/15
BEG-75	Implement App Security	None	Application Developer Epic	1.0	DONE	Fixed	Tad Miller 22/Jun/15
BEG-86	500 Errors on Unit Test Scripts	None	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker 23/Jun/15
BEG-79	Footer not locked for Mobile view	[Frontend]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig 23/Jun/15
BEG-82	Notify FDA of Adverse Reaction	[Frontend]	Consumer Interaction	1.0	VERIFIED	Unresolved	Matthew Prezotti 23/Jun/15
BEG-103	IE displays app in desktop view as left-aligned	[Frontend] [Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig 24/Jun/15
BEG-106	Hide Adverse Reaction filters when Recalls is selected	[Frontend] [Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig 24/Jun/15
BEG-24	Subscribe for Email Alerts	[Frontend]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig 18/Jun/15
BEG-37	Set Up Continuous Integration	None	Application Developer Epic	1.0	DONE	Fixed	Philip Samra 18/Jun/15
BEG-34	Set Up Auto Deploy from GitHub	None	Application Developer Epic	1.0	DONE	Fixed	Philip Samra 18/Jun/15
BEG-36	Set Up Continuous Monitoring	None	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezotti 18/Jun/15
BEG-59	Determine the AWS Notification Options	None	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezotti 19/Jun/15
BEG-60	Set Up Dev Ops Team Email Notifications	None	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezotti 19/Jun/15
BEG-87	Update UI based on Feedback from Sprint 2 Demo	None	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig 23/Jun/15
BEG-78	Adverse Reactions options below Clear Form button on Mobile view	[Frontend]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig 23/Jun/15
BEG-94	Toggling Drug Recalls/Adverse Reactions Changes Column Header but not Data	[Frontend]		1.0	REJECTED	Unresolved	Frank Hellwig 23/Jun/15
BEG-96	Clicking Logo does not clear search	[Frontend]		1.0	DONE	Fixed	Frank Hellwig 23/Jun/15
BEG-100	Update UI to Share Column on Search Results	[Frontend]	Consumer Interaction	1.0	DONE	Fixed	Frank Hellwig 24/Jun/15

Figure 37. Sprint 3 Backlog



Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

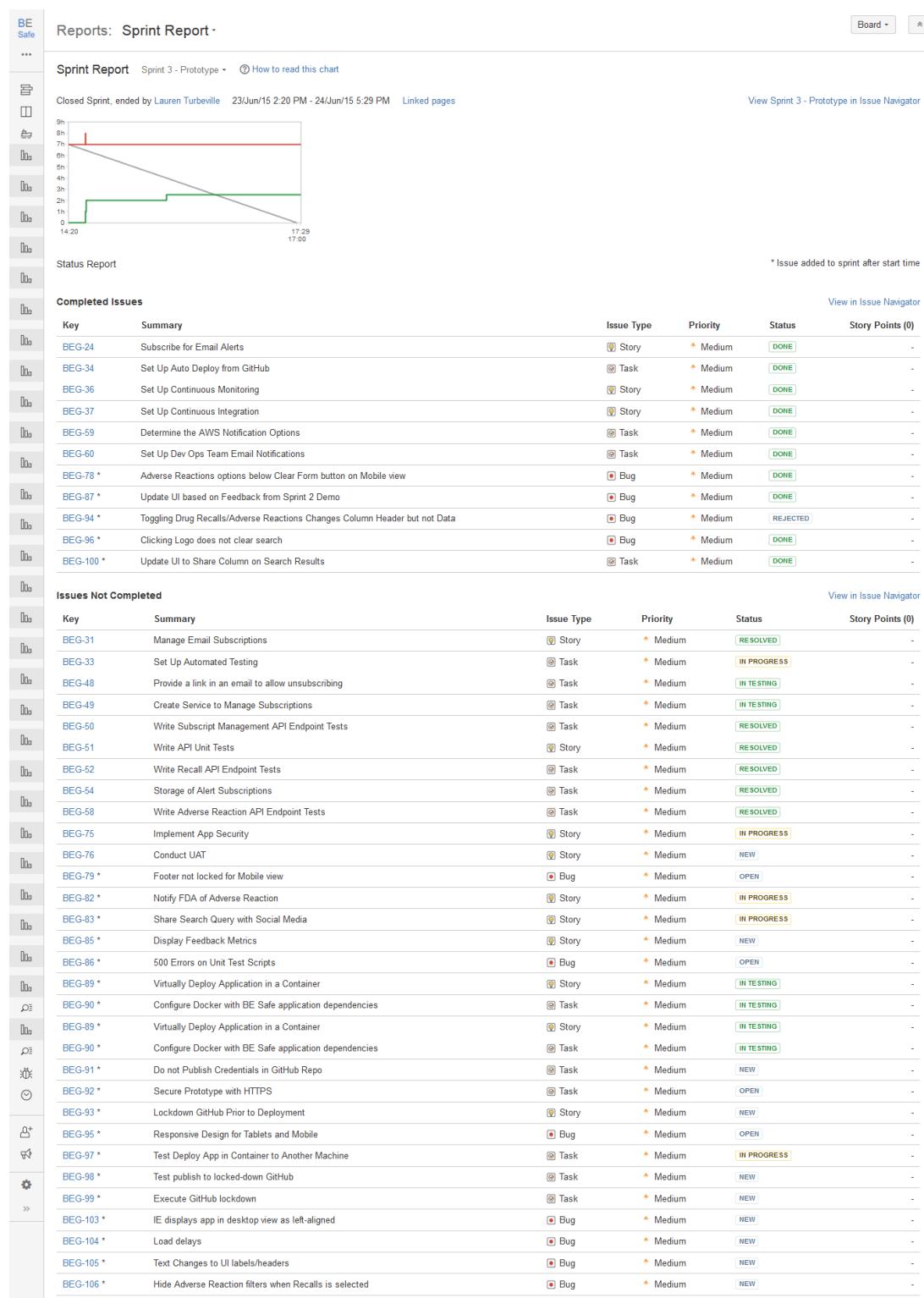


Figure 38. Sprint 3 Report



g.7.3.3.2. Burn-down Chart

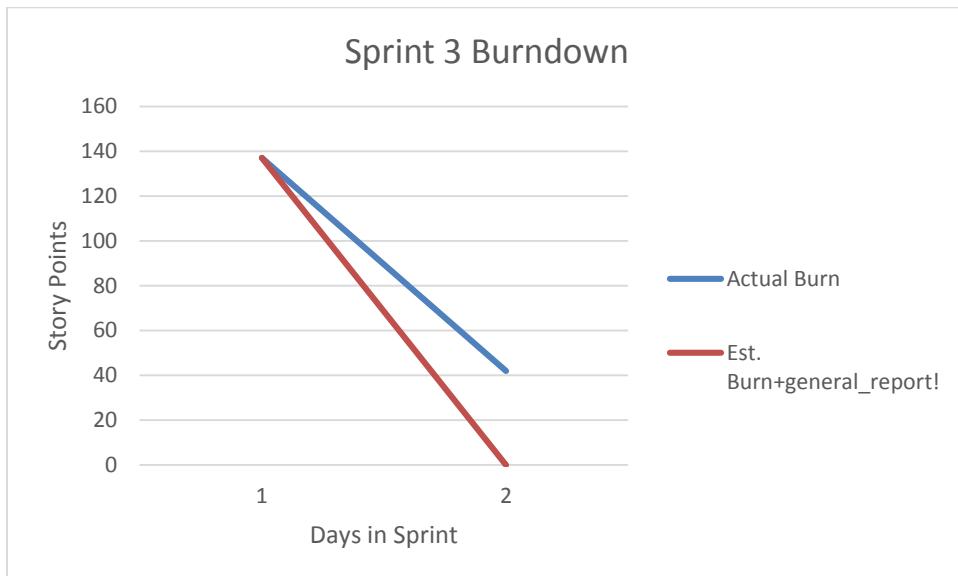


Figure 39. Sprint 3 Burn-down Chart

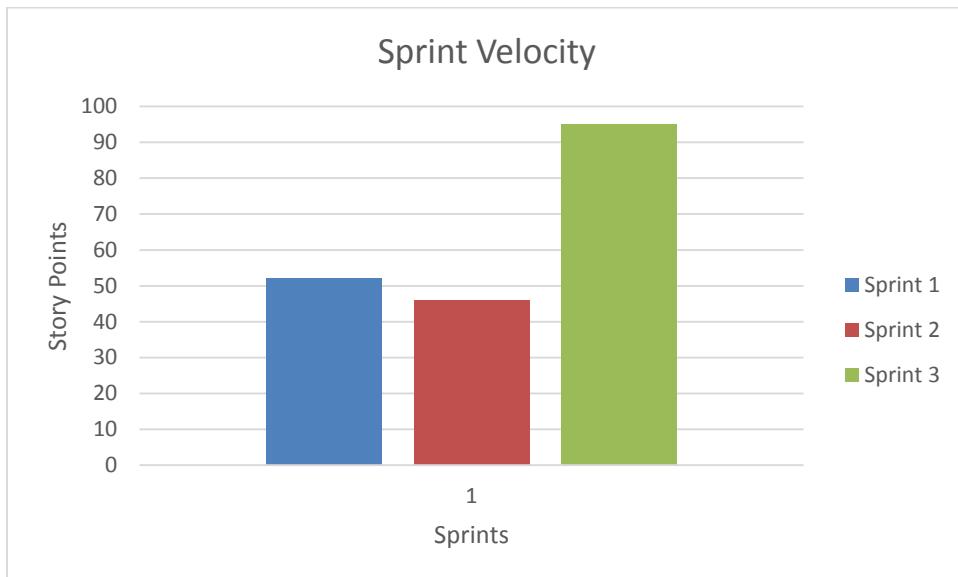


Figure 40. Sprint 3 Velocity

g.7.3.3.3. Retrospective

What Went Well	What Could Have Gone Better
1. Inter-team communication improved. 2. Visible Progression towards completing the Prototype.	1. Improve schedule for usability testing and red team 2. Reach out to Amazon earlier to demo emails earlier

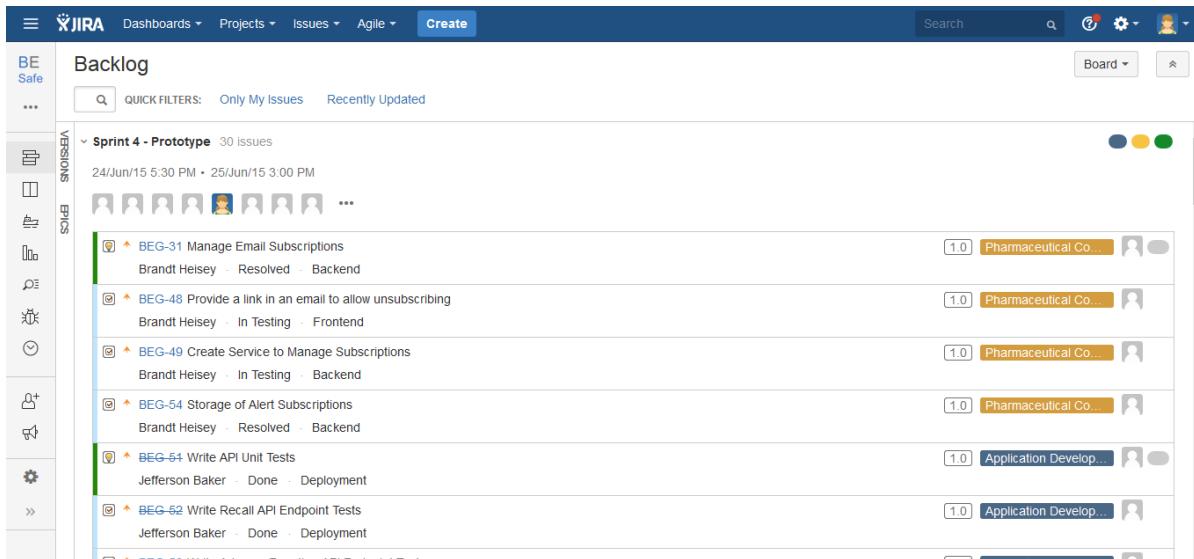
<p>3. Team Effort to complete the project.</p>	<p>3. Accessibility of remote scrum participants due to poor conference call hardware</p>
What Would You Fix?	
<p>1. Recommend in-person scrum until new hardware is available.</p>	

Figure 41. Sprint 3 Retrospective Results

g.7.3.4. Sprint 4

The following artifacts reflect the Agile Scrum development process for Sprint 4: JIRA sprint backlog (views from JIRA Agile board and JIRA issues list), JIRA Sprint 4 Kanban chart, JIRA sprint report, sprint burn-down chart, sprint velocity metric, and sprint retrospective.

g.7.3.4.1. Backlog



The screenshot shows the JIRA Agile board interface. On the left, there's a sidebar with various icons for filters, dashboards, projects, issues, and agile boards. The main area is titled "Backlog". At the top, there are filters for "QUICK FILTERS: Only My Issues" and "Recently Updated". Below that, a section for "Sprint 4 - Prototype" is shown, indicating 30 issues, with dates from 24/Jun/15 5:30 PM to 25/Jun/15 3:00 PM. A team icon shows 3 people assigned. The backlog list includes several items:

- BEG-31 Manage Email Subscriptions (Brandt Heisey, Resolved, Backend)
- BEG-48 Provide a link in an email to allow unsubscribing (Brandt Heisey, In Testing, Frontend)
- BEG-49 Create Service to Manage Subscriptions (Brandt Heisey, In Testing, Backend)
- BEG-54 Storage of Alert Subscriptions (Brandt Heisey, Resolved, Backend)
- BEG-54 Write API Unit Tests (Jefferson Baker, Done, Deployment)
- BEG-52 Write Recall API Endpoint Tests (Jefferson Baker, Done, Deployment)
- BEG-58 Write Address Decoding API Endpoint Tests

Figure 42. Sprint 4 Backlog – View from JIRA Agile Board



Request for Quotation (RFQ) 4QTFHS150004

Approach Criteria Evidence

Sprint 4 - Release 1.0										
Save as Details ★										
Export Tools										
Fix Version: 1.0 • Sprint: Sprint 4 - Prototype •										
1-34 of 34										
T	Key	Summary	Labels	Links	Epic Link	Fix Version/s	Status	Resolution	Assignee	Created
be.gsa-18f	BEG-91	Do not Publish Credentials in GitHub Repo	None		Application Developer Epic	1.0	DONE	Fixed	Brandt Heisey	23/Jun/15
be.gsa-18f	BEG-89	Virtually Deploy Application in a Container	None	BEG-90, BEG-97	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	23/Jun/15
be.gsa-18f	BEG-90	Configure Docker with BE Safe application dependencies	None	BEG-89	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	23/Jun/15
be.gsa-18f	BEG-93	Unknown GitHub Prior to Deployment	[Deployment]	RFG-4R, BEG-99	Application Developer Epic	1.0	NEW	In Progress	Frank Hellwig	23/Jun/15
be.gsa-18f	BEG-99	Execute GitHub lockdown	[Deployment]	BEG-93	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig	24/Jun/15
be.gsa-18f	BEG-98	Test publish to locked-down GitHub	[Deployment]	BEG-93	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig	24/Jun/15
be.gsa-18f	BEG-92	Secure Prototype with HTTPS	[Frontend]	BEG-75	Application Developer Epic	1.0	RESOLVED	Unresolved	Brandt Heisey	23/Jun/15
be.gsa-18f	BEG-97	Test Deploy App in Container to Another Machine	[Deployment]	BEG-89	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	24/Jun/15
be.gsa-18f	BEG-117	Subscription Initialization Emails Not Sent for Adverse Reactions	[Usability-Test-Results]		Pharmaceutical Consumer Epic	1.0	OPEN	Unresolved	Brandt Heisey	25/Jun/15
be.gsa-18f	BEG-118	Fix Text in Subscription Initialization Alert Emails	None		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	25/Jun/15
be.gsa-18f	BEG-116	Create User Guide	[Output]	BEG-157, BEG-138, BEG-439	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezziotti	25/Jun/15
be.gsa-18f	BEG-76	Conduct UAT	None		Application Developer Epic	1.0	DONE	Fixed	Lauren Turbeville	22/Jun/15
be.gsa-18f	BEG-104	Load delays	[Usability-Test-Results]		Application Developer Epic	1.0	DONE	Fixed	Frank Hellwig	24/Jun/15
be.gsa-18f	BEG-95	Responsive Design for Tablets and Mobile	[Frontend]		Application Developer Epic	1.0	DONE	Fixed	Frank Hellwig	23/Jun/15
be.gsa-18f	BEG-73	Share Search Results with Social Media	None		Consumer Interaction	1.0	DONE	Fixed	Jefferson Baker	22/Jun/15
be.gsa-18f	BEG-119	Identify drug name in email alerts	None			1.0	REJECTED	Unresolved	Brandt Heisey	25/Jun/15
be.gsa-18f	BEG-83	Share Search Query with Social Media	[Frontend]	BEG-427	Consumer Interaction	1.0	DONE	Fixed	Jefferson Baker	23/Jun/15
be.gsa-18f	BEG-105	Text Changes to UI labels/headers	[Frontend]	[Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	24/Jun/15
be.gsa-18f	BEG-31	Manage Email Subscriptions	[Backend]	BEG-49, BEG-64	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
be.gsa-18f	BEG-48	Provide a link in an email to allow unsubscribing	[Frontend]	BEG-24	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
be.gsa-18f	BEG-49	Create Service to Manage Subscriptions	[Backend]	BEG-34	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	18/Jun/15
be.gsa-18f	BEG-54	Storage of Alert Subscriptions	[Backend]	BEG-34	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	19/Jun/15
be.gsa-18f	BEG-51	Write API Unit Tests	[Deployment]	BEG-50, BEG-52, BEG-68	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	18/Jun/15
be.gsa-18f	BEG-52	Write Recall API Endpoint Tests	[Deployment]	BEG-54	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	18/Jun/15
be.gsa-18f	BEG-58	Write Adverse Reaction API Endpoint Tests	[Deployment]	BEG-54	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	19/Jun/15
be.gsa-18f	BEG-50	Write Subscript Management API Endpoint Tests	[Deployment]	BEG-54	Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	18/Jun/15
be.gsa-18f	BEG-33	Set Up Automated Testing	None	BEG-37	Application Developer Epic	1.0	DONE	Fixed	Philip Samra	18/Jun/15
be.gsa-18f	BEG-75	Implement App Security	None	BEG-92	Application Developer Epic	1.0	DONE	Fixed	Tad Miller	22/Jun/15
be.gsa-18f	BEG-96	500 Errors on Unit Test Scripts	None		Application Developer Epic	1.0	DONE	Fixed	Jefferson Baker	23/Jun/15
be.gsa-18f	BEG-79	Footer not locked for Mobile view	[Frontend]		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	23/Jun/15
be.gsa-18f	BEG-82	Notify FDA of Adverse Reaction	[Frontend]	BEG-100, BEG-102	Consumer Interaction	1.0	VERIFIED	Unresolved	Matthew Prezziotti	23/Jun/15
be.gsa-18f	BEG-103	IE displays app in desktop view as left-aligned	[Frontend]	[Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	24/Jun/15
be.gsa-18f	BEG-106	Hide Adverse Reaction filters when Recalls is selected	[Frontend]	[Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	24/Jun/15
be.gsa-18f	BEG-123	AdverseReaction does not pull data for all genders/ages	[Usability-Test-Results]		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	25/Jun/15

Figure 43. Sprint 4 Backlog - View from JIRA Issues Board

Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

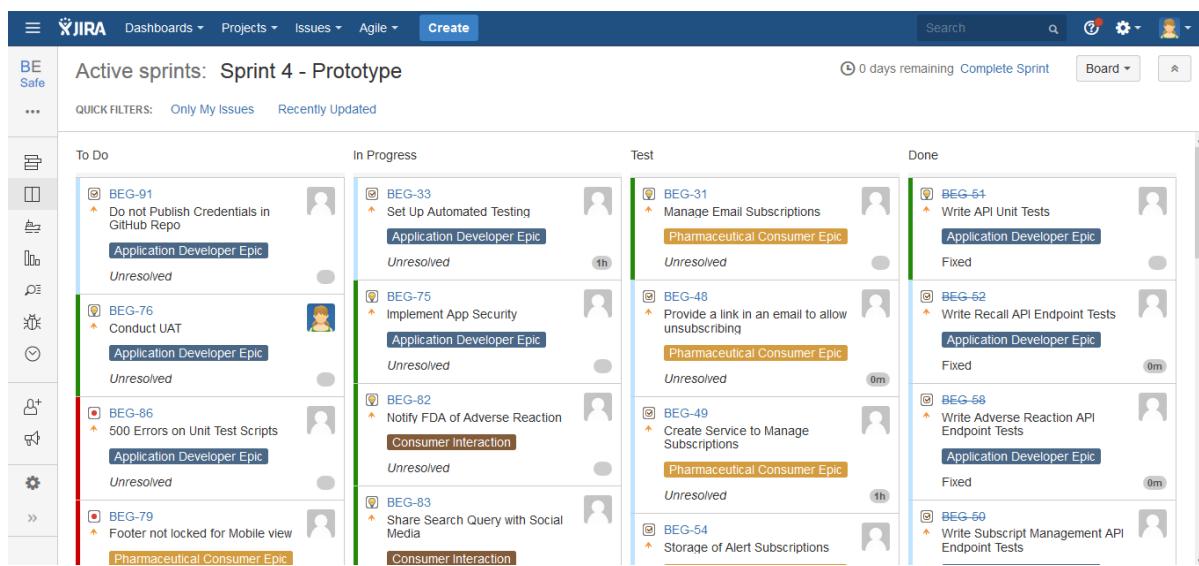


Figure 44. Sprint 4 Backlog - Kanban Chart



Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

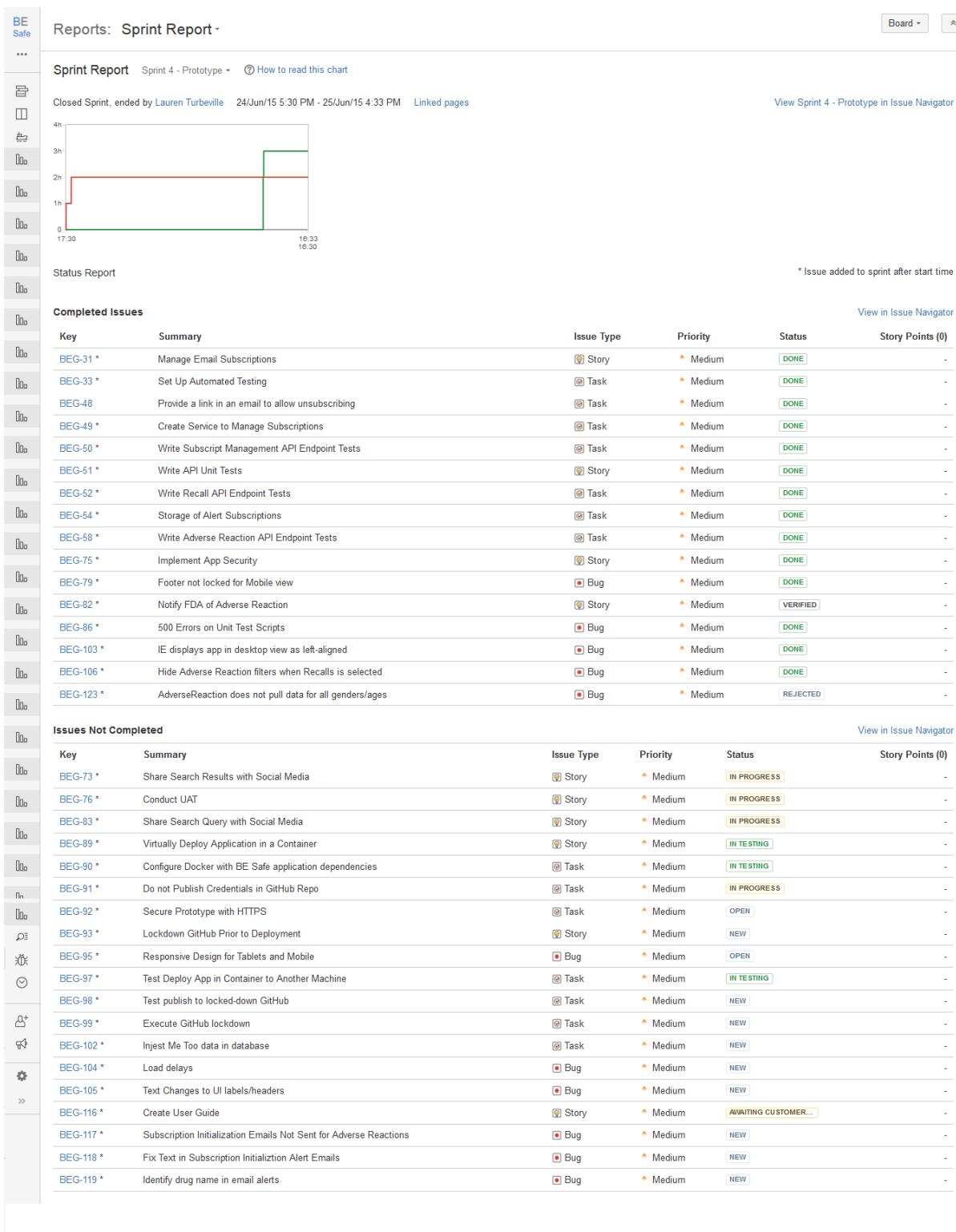


Figure 45. Sprint 4 Report



g.7.3.4.2. Burn-down Chart

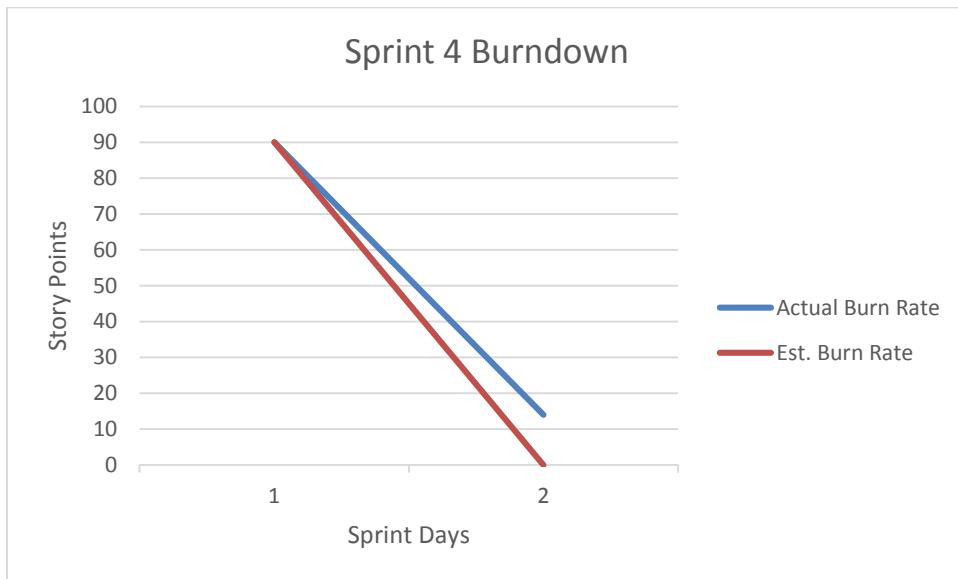


Figure 46. Sprint 4 Burn-down Chart

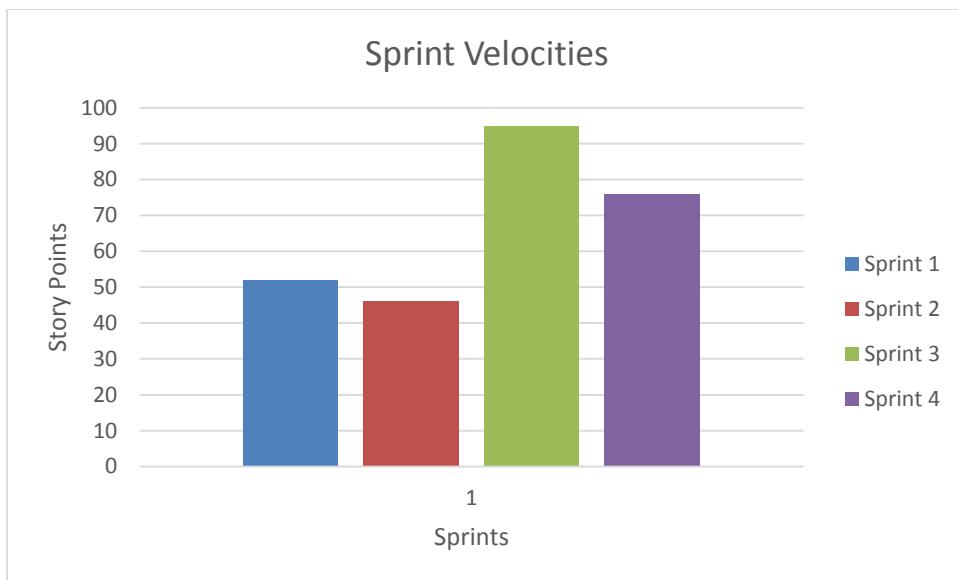


Figure 47. Sprint 4 Velocity

g.7.3.4.3. Retrospective

What Went Well	What Could Have Gone Better
1. Completed Prototype. 2. Everything works from beginning to end in the build and deployment process	1. Accessibility of remote scrum participants due to poor conference call hardware 2. Lack of knowing a new deliverable date kept us from adding more stories to the Sprint.



3. Team effort to complete the project within the original timeframe.	3.
What Would You Fix?	
1. Recommend in-person scrum until new hardware is available.	

Figure 48. Sprint 4 Retrospective Results

g.7.3.5. Sprint 5

The following artifacts reflect the Agile Scrum development process for Sprint 5: JIRA sprint backlog, JIRA sprint report, sprint burn-down chart, sprint velocity metric, and sprint retrospective.



g.7.3.5.1. Backlog

Sprint 5 - Release 1.0										
be-gsa-18f - Type: All - Status: All - Assignee: All - Contains text More Advanced										
Fix Version: 1.0 - Sprint: Sprint 5 - Prototype -										
1-30 of 30 ↗										
Columns ▾										
T	Key	Summary	Labels	Links	Epic Link	Fix Version/s	Status	Resolution	Assignee	Created
	BEG-91	Do not Publish Credentials in GitHub Repo	None		Application Developer Epic	1.0	DONE	Fixed	Brandt Heisey	23/Jun/15 ***
	BEG-89	Virtually Deploy Application in a Container	None	BEG-90, BEG-97	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	23/Jun/15
	BEG-90	Configure Docker with BE Safe application dependencies	None	BEG-89	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	23/Jun/15
	BEG-93	Lockdown GitHub Prior to Deployment	[Deployment]	BEG-98, BEG-99	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig	23/Jun/15
	BEG-99	Execute GitHub lockdown	[Deployment]	BEG-93	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig	24/Jun/15
	BEG-98	Test publish to locked-down GitHub	[Deployment]	BEG-93	Application Developer Epic	1.0	NEW	Unresolved	Frank Hellwig	24/Jun/15
	BEG-92	Secure Prototype with HTTPS	[Frontend]	BEG-75	Application Developer Epic	1.0	RESOLVED	Unresolved	Brandt Heisey	23/Jun/15
	BEG-97	Test Deploy App in Container to Another Machine	[Deployment]	BEG-89	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	24/Jun/15
	BEG-117	Subscription Initialization Emails Not Sent for Adverse Reactions	[Usability-Test-Results]		Pharmaceutical Consumer Epic	1.0	OPEN	Unresolved	Brandt Heisey	25/Jun/15
	BEG-118	Fix Text in Subscription Initialization Alert Emails	None		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	25/Jun/15
	BEG-116	Create User Guide	[Output]	BEG-157, BEG-139, BEG-139	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezziotti	25/Jun/15
	BEG-76	Conduct UAT	None		Application Developer Epic	1.0	DONE	Fixed	Lauren Turbeville	22/Jun/15
	BEG-104	Load delays	[Usability-Test-Results]		Application Developer Epic	1.0	DONE	Fixed	Frank Hellwig	24/Jun/15
	BEG-95	Responsive Design for Tablets and Mobile	[Frontend]		Application Developer Epic	1.0	DONE	Fixed	Frank Hellwig	23/Jun/15
	BEG-73	Share Search Results with Social Media	None		Consumer Interaction	1.0	DONE	Fixed	Jefferson Baker	22/Jun/15
	BEG-119	Identify drug name in email alerts	None			1.0	REJECTED	Unresolved	Brandt Heisey	25/Jun/15
	BEG-108	No Validation on Email Address in Subscription pop-up	[Usability-Test-Results]		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	25/Jun/15
	BEG-88	Add pagination to search results	None		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	23/Jun/15
	BEG-134	GitHub link generates 404 error for IE, Chrome and Safari	None		Pharmaceutical Consumer Epic	1.0	REJECTED	Unresolved	Frank Hellwig	25/Jun/15
	BEG-135	Contact link requires user to select from Program with Chrome	None		Application Developer Epic	1.0	REJECTED	Unresolved	Frank Hellwig	25/Jun/15
	BEG-139	Create link on UI for User Guide	[Frontend]	BEG-116	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	26/Jun/15
	BEG-142	Email Address Validation on Adverse Reactions	None			1.0	VERIFIED	Unresolved	Frank Hellwig	26/Jun/15
	BEG-105	Text Changes to UI labels/headers	[Frontend]	[Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	24/Jun/15
	BEG-112	Update date range field	[Frontend]	[Usability-Test-Results]	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	25/Jun/15
	BEG-127	Reduce the size of the social media icons	[Frontend]	BEG-93	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Jefferson Baker	25/Jun/15
	BEG-129	Gateway Error on email subscription	[Usability-Test-Results]		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	25/Jun/15
	BEG-136	Bad Gateway error occurs after clicking Me Too icon and executing a new search	None		Consumer Interaction	1.0	DONE	Fixed	Frank Hellwig	25/Jun/15
	BEG-137	Adverse Reactions pop-up appears for Recalls Me Too button	None			1.0	DONE	Fixed	Frank Hellwig	25/Jun/15
	BEG-138	Create HTML page for User Guide	None	BEG-116	Application Developer Epic	1.0	DONE	Fixed	Matthew Prezziotti	26/Jun/15
	BEG-141	Switch Complaint and Email address fields on Me Too for Adverse Reactions	None			1.0	DONE	Fixed	Frank Hellwig	26/Jun/15

Figure 49. Sprint 5 Backlog



Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

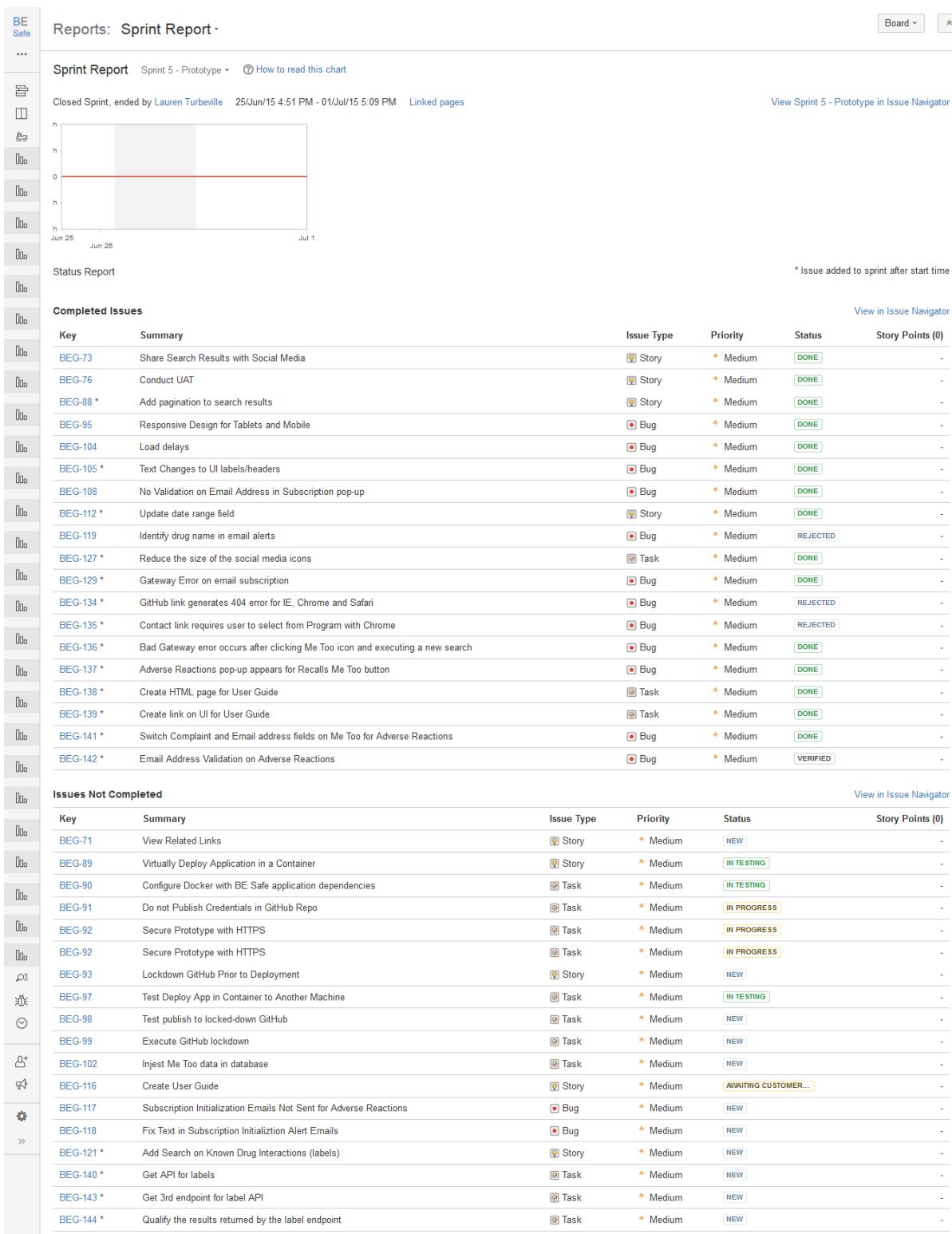


Figure 50. Sprint 5 Report

g.7.3.5.2. Burn-down Chart

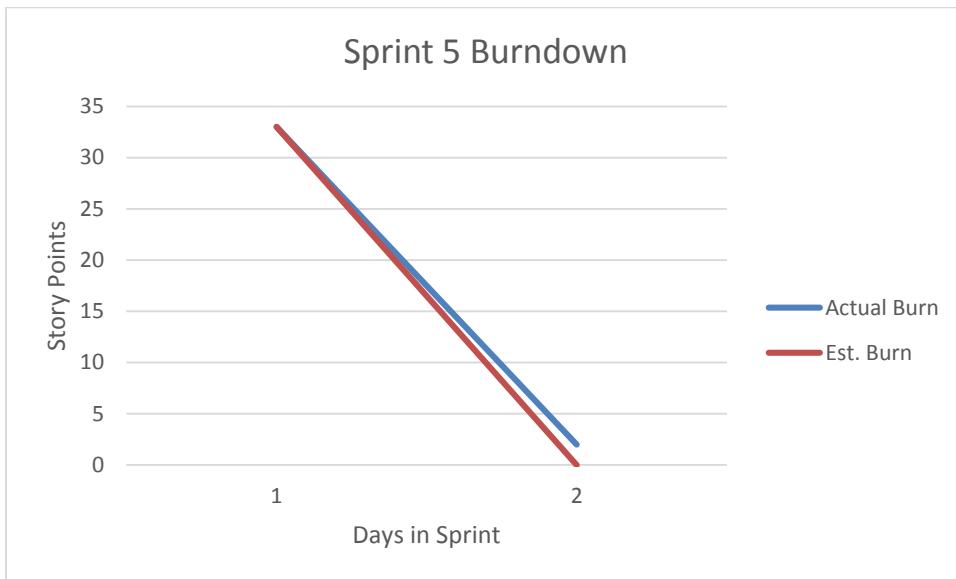


Figure 51. Sprint 5 Burn-down Chart

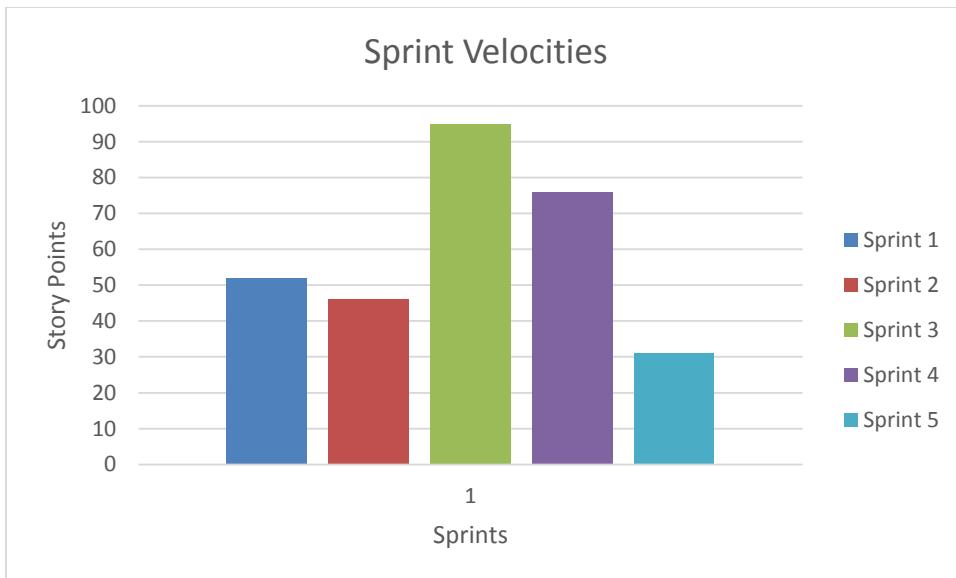


Figure 52. Sprint 5 Velocity

g.7.3.5.3. Retrospective

What Went Well	What Could Have Gone Better
<ol style="list-style-type: none"> Exploration of adding search on labels as new feature based on feedback from users Closing out bugs and small fixes identified during testing 	<ol style="list-style-type: none"> Not enough time to complete the label functionality. Late delivery of Government response to Q&A

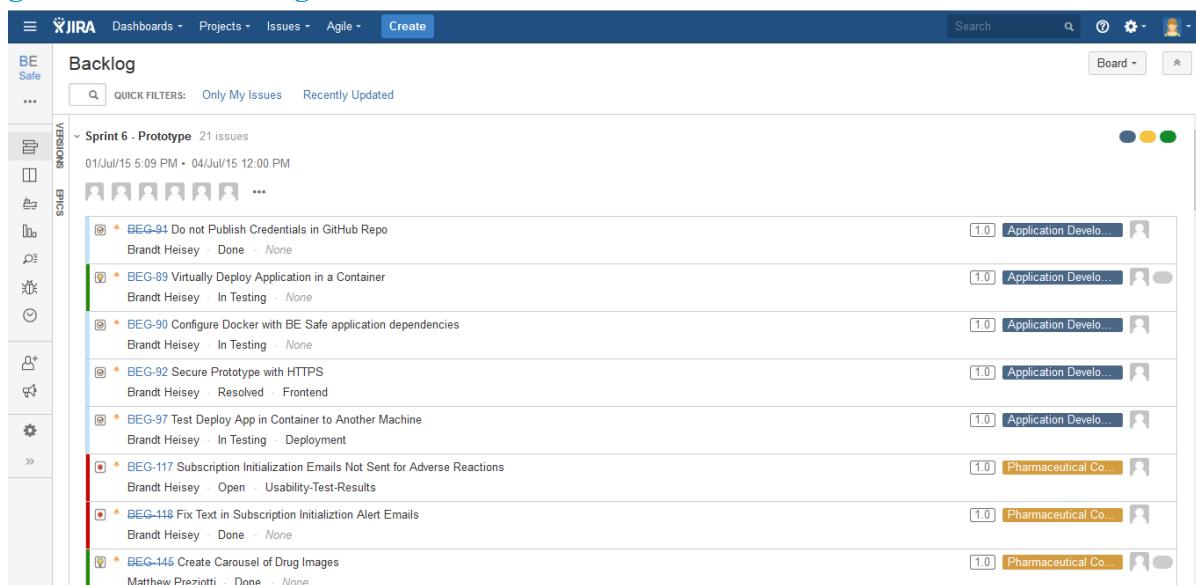
3. Generation of user guide	3. Build out schedule to include sprint 6-9 for delays in government due date
What Would You Fix?	
1. Build out schedule to include sprint 6-9 for delays in government due dates	

Figure 53. Sprint 5 Retrospective Results

g.7.3.6. Sprint 6

The following artifacts reflect the Agile Scrum development process for Sprint 6: JIRA sprint backlog (views from JIRA Agile board and JIRA issues list), JIRA Sprint 4 Kanban chart, JIRA sprint report, sprint burn-down chart, sprint velocity metric, and sprint retrospective.

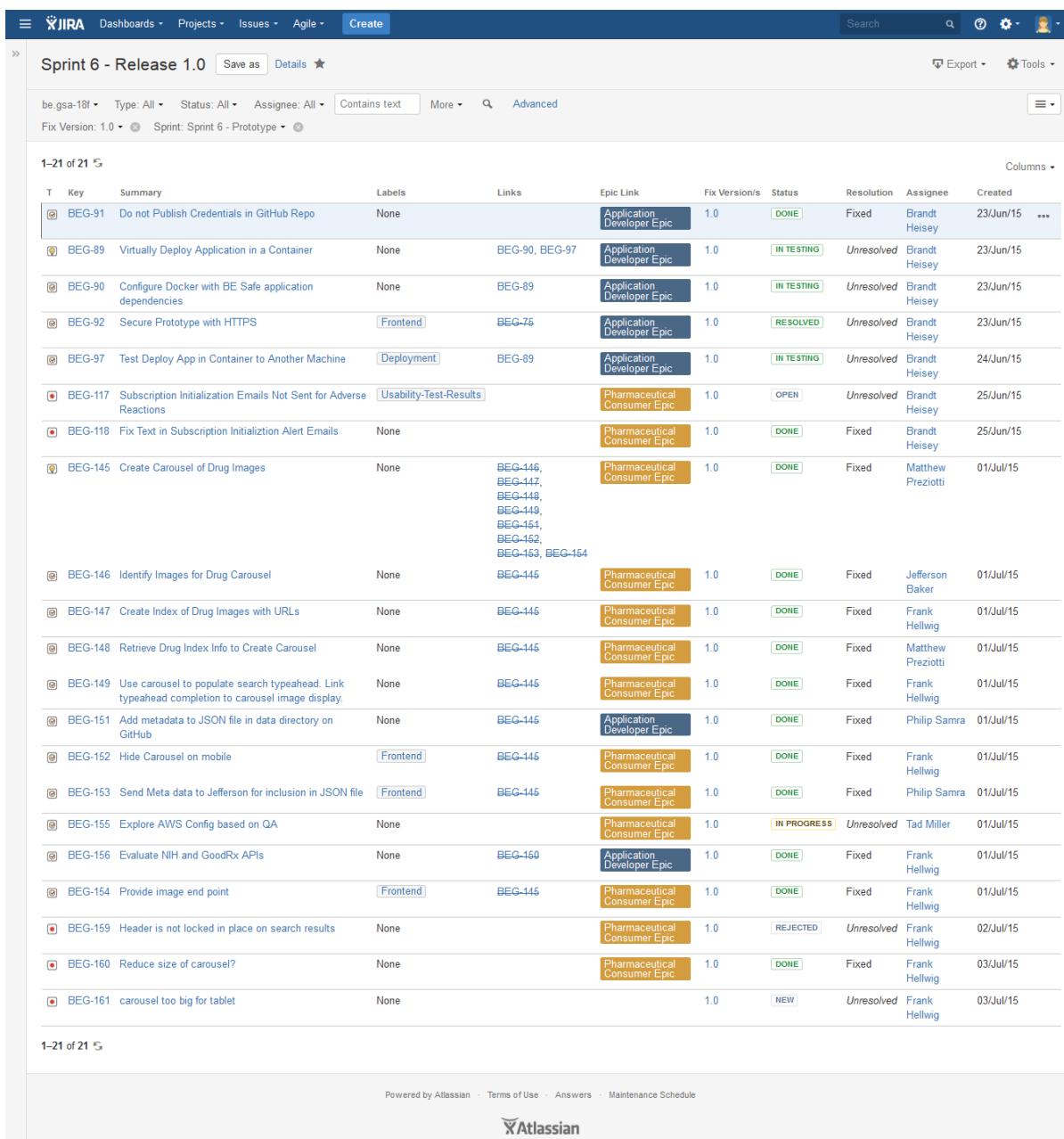
g.7.3.6.1. Backlog



Sprint	Status	Type	Title	Description	Labels
Sprint 6 - Prototype	Done	Application Development	BEG-81 Do not Publish Credentials in GitHub Repo	Bradt Heisey · Done · None	1.0
Sprint 6 - Prototype	In Testing	Application Development	BEG-89 Virtually Deploy Application in a Container	Bradt Heisey · In Testing · None	1.0
Sprint 6 - Prototype	In Testing	Application Development	BEG-90 Configure Docker with BE Safe application dependencies	Bradt Heisey · In Testing · None	1.0
Sprint 6 - Prototype	Resolved	Application Development	BEG-92 Secure Prototype with HTTPS	Bradt Heisey · Resolved · Frontend	1.0
Sprint 6 - Prototype	In Testing	Application Development	BEG-97 Test Deploy App in Container to Another Machine	Bradt Heisey · In Testing · Deployment	1.0
Sprint 6 - Prototype	Open	Pharmaceutical Company	BEG-117 Subscription Initialization Emails Not Sent for Adverse Reactions	Bradt Heisey · Open · Usability-Test-Results	1.0
Sprint 6 - Prototype	Done	Pharmaceutical Company	BEG-118 Fix Text in Subscription Initialization Alert Emails	Bradt Heisey · Done · None	1.0
Sprint 6 - Prototype	Done	Pharmaceutical Company	BEG-145 Create Carousel of Drug Images	Matthew Prezotti · Done · None	1.0

Figure 54. Sprint 6 Backlog – View from JIRA Agile Board

Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence



The screenshot shows the JIRA Issues Board interface for Sprint 6 - Release 1.0. The board displays a list of 21 issues, each with a key, summary, labels, links, epic link, fix version, status, resolution, assignee, and creation date. The issues are categorized by epic link (Application Developer Epic, Pharmaceutical Consumer Epic), fix version (1.0), and status (Done, In Progress, Rejected). The board includes filters for type, status, assignee, and contains text, along with export and tools options.

T	Key	Summary	Labels	Links	Epic Link	Fix Version/s	Status	Resolution	Assignee	Created
	BEG-91	Do not Publish Credentials in GitHub Repo	None		Application Developer Epic	1.0	DONE	Fixed	Brandt Heisey	23/Jun/15
	BEG-89	Virtually Deploy Application in a Container	None	BEG-90, BEG-97	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	23/Jun/15
	BEG-90	Configure Docker with BE Safe application dependencies	None	BEG-89	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	23/Jun/15
	BEG-92	Secure Prototype with HTTPS	Frontend	BEG-75	Application Developer Epic	1.0	RESOLVED	Unresolved	Brandt Heisey	23/Jun/15
	BEG-97	Test Deploy App in Container to Another Machine	Deployment	BEG-89	Application Developer Epic	1.0	IN TESTING	Unresolved	Brandt Heisey	24/Jun/15
	BEG-117	Subscription Initialization Emails Not Sent for Adverse Reactions	Usability-Test-Results		Pharmaceutical Consumer Epic	1.0	OPEN	Unresolved	Brandt Heisey	25/Jun/15
	BEG-118	Fix Text in Subscription Initialzition Alert Emails	None		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Brandt Heisey	25/Jun/15
	BEG-145	Create Carousel of Drug Images	None	BEG-146, BEG-147, BEG-148, BEG-149, BEG-151, BEG-152, BEG-153, BEG-154	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Matthew Preziotti	01/Jul/15
	BEG-146	Identify Images for Drug Carousel	None	BEG-146	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Jefferson Baker	01/Jul/15
	BEG-147	Create Index of Drug Images with URLs	None	BEG-146	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	01/Jul/15
	BEG-148	Retrieve Drug Index Info to Create Carousel	None	BEG-146	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Matthew Preziotti	01/Jul/15
	BEG-149	Use carousel to populate search typeahead. Link typeahead completion to carousel image display.	None	BEG-146	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	01/Jul/15
	BEG-151	Add metadata to JSON file in data directory on GitHub	None	BEG-146	Application Developer Epic	1.0	DONE	Fixed	Philip Samra	01/Jul/15
	BEG-152	Hide Carousel on mobile	Frontend	BEG-146	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	01/Jul/15
	BEG-153	Send Meta data to Jefferson for inclusion in JSON file	Frontend	BEG-146	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Philip Samra	01/Jul/15
	BEG-155	Explore AWS Config based on QA	None		Pharmaceutical Consumer Epic	1.0	IN PROGRESS	Unresolved	Tad Miller	01/Jul/15
	BEG-156	Evaluate NIH and GoodRx APIs	None	BEG-150	Application Developer Epic	1.0	DONE	Fixed	Frank Hellwig	01/Jul/15
	BEG-154	Provide image end point	Frontend	BEG-146	Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	01/Jul/15
	BEG-159	Header is not locked in place on search results	None		Pharmaceutical Consumer Epic	1.0	REJECTED	Unresolved	Frank Hellwig	02/Jul/15
	BEG-160	Reduce size of carousel?	None		Pharmaceutical Consumer Epic	1.0	DONE	Fixed	Frank Hellwig	03/Jul/15
	BEG-161	carousel too big for tablet	None			1.0	NEW	Unresolved	Frank Hellwig	03/Jul/15

Figure 55. Sprint 6 Backlog - View from JIRA Issues Board



Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

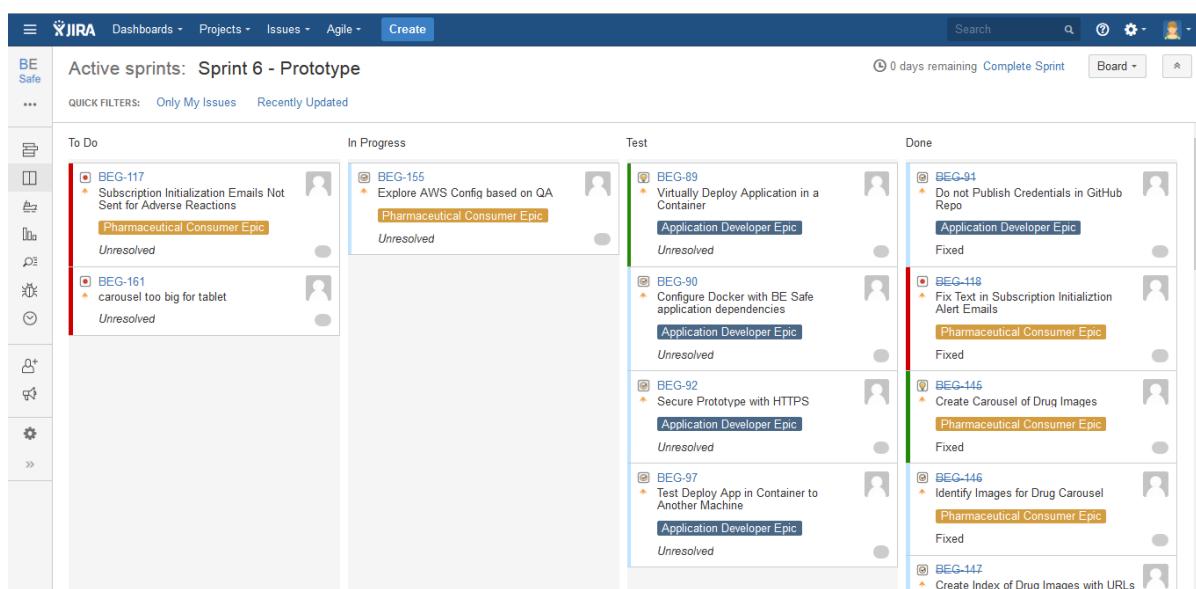


Figure 56. Sprint 6 Backlog - Kanban Chart



Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

Reports: Sprint Report -

Sprint Report Sprint 6 - Prototype [How to read this chart](#)

Active Sprint 01/Jul/15 5:09 PM - 04/Jul/15 12:00 PM [Linked pages](#) [View Sprint 6 - Prototype in Issue Navigator](#)

Status Report * Issue added to sprint after start time

[View in Issue Navigator](#)

Completed Issues

Key	Summary	Issue Type	Priority	Status	Story Points (0)
BEG-91 *	Do not Publish Credentials in GitHub Repo	Task	Medium	DONE	-
BEG-118 *	Fix Text in Subscription Initialization Alert Emails	Bug	Medium	DONE	-
BEG-145	Create Carousel of Drug Images	Story	Medium	DONE	-
BEG-146	Identify Images for Drug Carousel	Task	Medium	DONE	-
BEG-147	Create Index of Drug Images with URLs	Task	Medium	DONE	-
BEG-148	Retrieve Drug Index Info to Create Carousel	Task	Medium	DONE	-
BEG-149	Use carousel to populate search typeahead. Link typeahead completion to carousel image display.	Task	Medium	DONE	-
BEG-151 *	Add metadata to JSON file in data directory on GitHub	Task	Medium	DONE	-
BEG-152 *	Hide Carousel on mobile	Task	Medium	DONE	-
BEG-153 *	Send Meta data to Jefferson for inclusion in JSON file	Task	Medium	DONE	-
BEG-154 *	Provide image end point	Task	Medium	DONE	-
BEG-156 *	Evaluate NIH and GoodRx APIs	Task	Medium	DONE	-
BEG-159 *	Header is not locked in place on search results	Bug	Medium	REJECTED	-
BEG-160 *	Reduce size of carousel?	Bug	Medium	DONE	-

[View in Issue Navigator](#)

Issues Not Completed

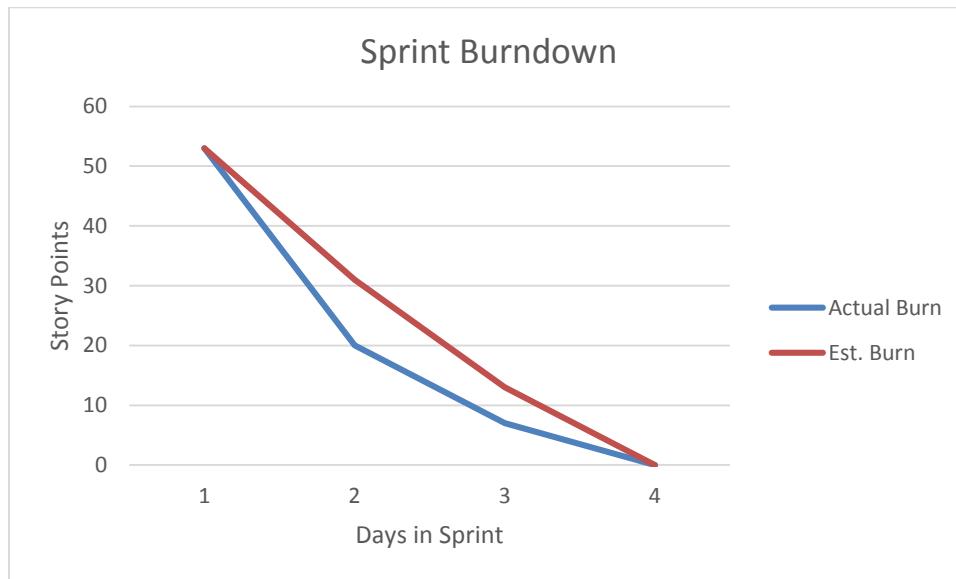
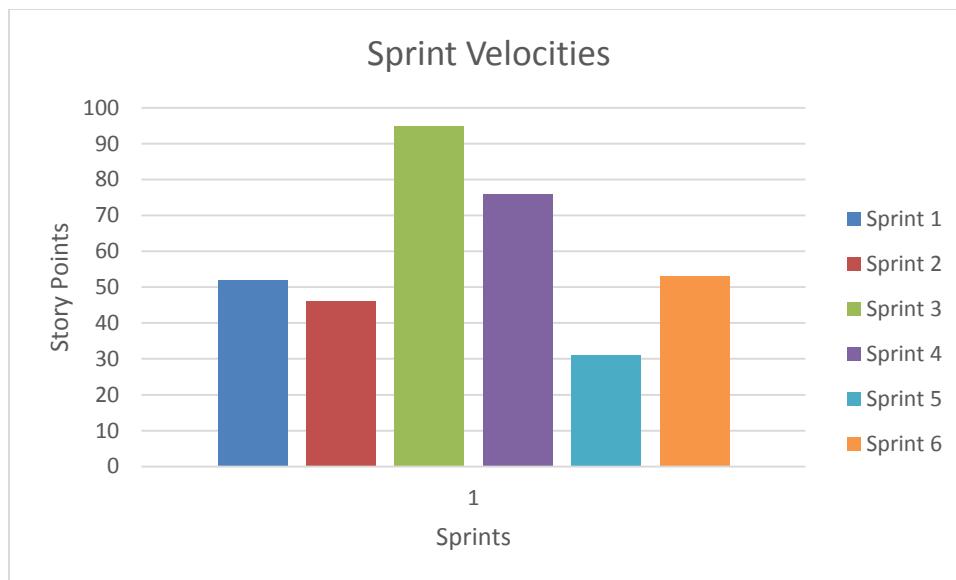
Key	Summary	Issue Type	Priority	Status	Story Points (0)
BEG-89 *	Virtually Deploy Application in a Container	Story	Medium	IN TESTING	-
BEG-90 *	Configure Docker with BE Safe application dependencies	Task	Medium	IN TESTING	-
BEG-92 *	Secure Prototype with HTTPS	Task	Medium	RESOLVED	-
BEG-97 *	Test Deploy App in Container to Another Machine	Task	Medium	IN TESTING	-
BEG-117 *	Subscription Initialization Emails Not Sent for Adverse Reactions	Bug	Medium	OPEN	-
BEG-155 *	Explore AWS Config based on QA	Task	Medium	IN PROGRESS	-
BEG-161 *	carousel too big for tablet	Bug	Medium	NEW	-

[View in Issue Navigator](#)

Issues Removed From Sprint

Key	Summary	Issue Type	Priority	Status	Story Points (0)
BEG-71 *	View Related Links	Story	Medium	NEW	-
BEG-93 *	Lockdown GitHub Prior to Deployment	Story	Medium	NEW	-
BEG-98 *	Test publish to locked-down GitHub	Task	Medium	NEW	-
BEG-99 *	Execute GitHub lockdown	Task	Medium	NEW	-
BEG-102 *	Ingest Me Too data in database	Task	Medium	DEFERRED	-
BEG-109 *	Search a drug for both Recalls and Adverse Reactions in 1 search query	Story	Medium	REOPENED	-
BEG-116 *	Create User Guide	Story	Medium	DONE	-
BEG-121 *	Add Search on Known Drug Interactions (labels)	Story	Medium	DEFERRED	-
BEG-140 *	Get API for labels	Task	Medium	DEFERRED	-
BEG-143 *	Get 3rd endpoint for label API	Task	Medium	DEFERRED	-
BEG-144 *	Qualify the results returned by the label endpoint	Task	Medium	DEFERRED	-
BEG-150	Evaluate Non-OpenFDA APIs	Story	Medium	DEFERRED	-
BEG-157 *	Update User Guide with Carousel Information	Task	Medium	IN PROGRESS	-

Figure 57. Sprint 6 Report

g.7.3.6.2. Burndown Chart**Figure 58. Sprint 6 Burn-down chart****Figure 59. Sprint 6 Velocity****g.7.3.6.3. Retrospective**

What Went Well	What Could Have Gone Better
1. Coordination amongst developers on adding carousel feature went well.	1. Expand carousel images to extend beyond 100 'most prescribed' to include over the counter drugs.
2. Cleaning carousel images	2. Limitations of add-ons for JIRA cloud with regard to exporting evidence in

	report friendly formats (team is familiar add-ons for JIRA server).
3. Execution of carousel concept	
What Would You Fix?	
1. If there is another extension - Expand carousel images to extend beyond 100 'most prescribed' to include over the counter drugs.	

Figure 60. Sprint 6 Retrospective Results

g.8. Phase 5: Test

In addition to unit testing, integration testing, system testing and regression testing, BE used a three-tier approach to testing the BE Safe website:

- Custom Agile Workflow in JIRA for system
 - Usability Testing
 - User Acceptance Testing

g.8.1. Agile Workflow in JIRA

BE used a custom Agile workflow in JIRA for BE Safe to ensure that each user story was tested and verified before it met the definition of “Done.”

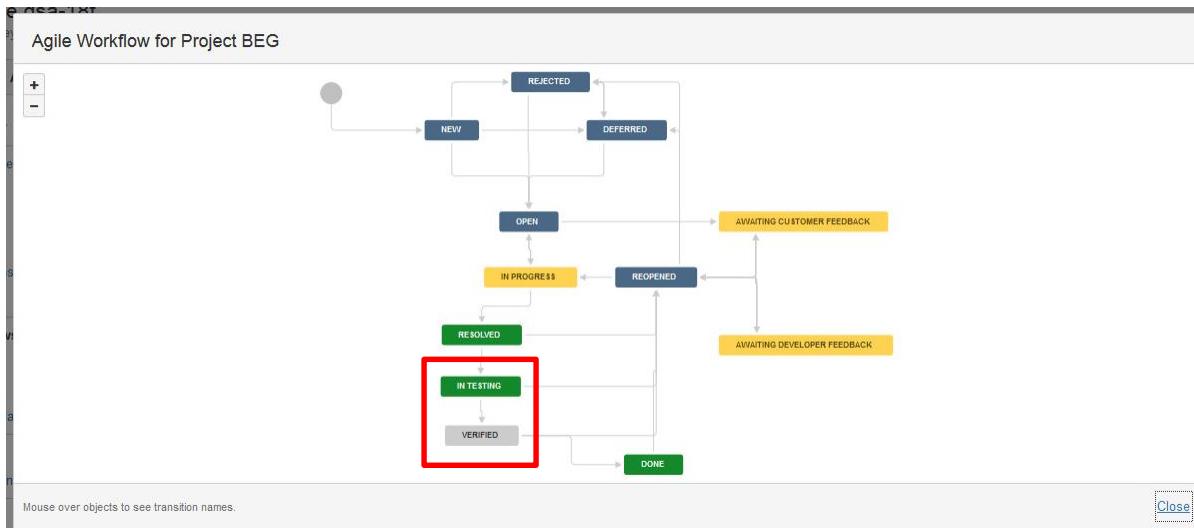
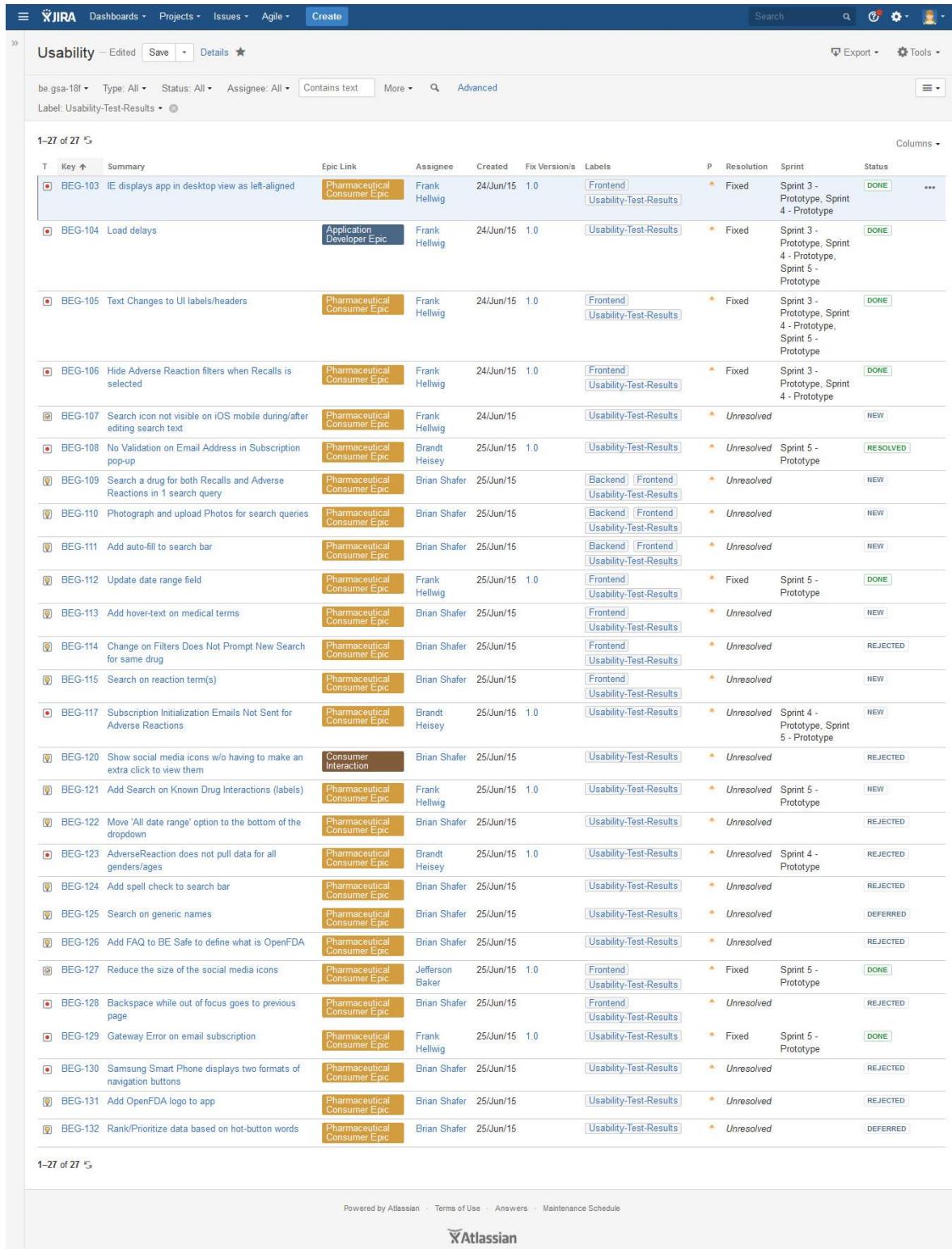


Figure 61. JIRA Agile Workflow for BE Safe

g.8.2. Usability Testing

BE conducted Usability Testing with end users unaffiliated with the BE Safe project. Usability Testing occurred during Sprint 3 and Sprint 6. Results of Usability Tests were logged in the Product Backlog in JIRA for prioritization and selection for the upcoming sprint. See details of Usability Testing in Evidence Approach F.

g.8.2.1. Sprint 3 Usability Testing Results



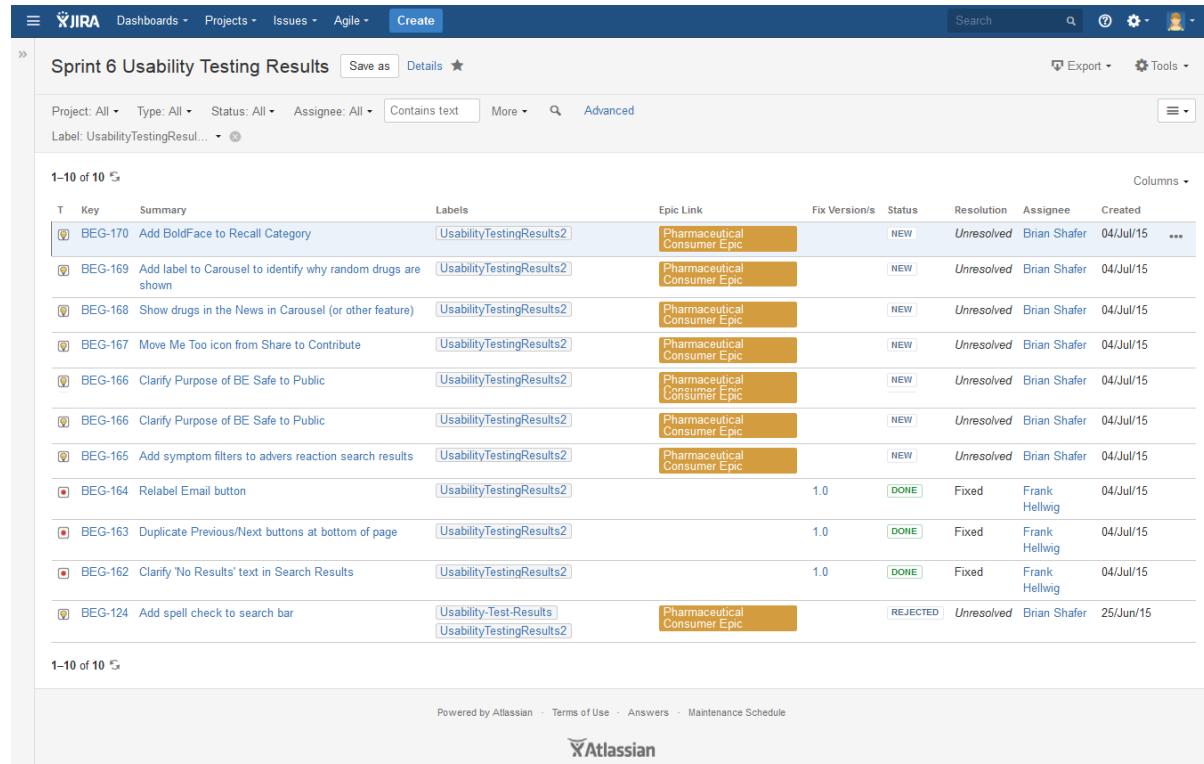
The screenshot shows a JIRA issue list titled "Usability" with 27 items. The columns include Key, Summary, Epic Link, Assignee, Created, Fix Version/s, Labels, P, Resolution, Sprint, and Status. The issues are categorized by Sprint (3-Prototype, 4-Prototype, 5-Prototype) and Status (Done, Unresolved, Rejected, Deferred). Many issues are labeled with "Usability-Test-Results".

T	Key	Summary	Epic Link	Assignee	Created	Fix Version/s	Labels	P	Resolution	Sprint	Status
1	BEG-103	IE displays app in desktop view as left-aligned	Pharmaceutical Consumer Epic	Frank Hellwig	24/Jun/15	1.0	Frontend Usability-Test-Results	▲	Fixed	Sprint 3 - Prototype, Sprint 4 - Prototype	DONE ***
2	BEG-104	Load delays	Application Developer Epic	Frank Hellwig	24/Jun/15	1.0	Usability-Test-Results	▲	Fixed	Sprint 3 - Prototype, Sprint 4 - Prototype, Sprint 5 - Prototype	DONE
3	BEG-105	Text Changes to UI labels/headers	Pharmaceutical Consumer Epic	Frank Hellwig	24/Jun/15	1.0	Frontend Usability-Test-Results	▲	Fixed	Sprint 3 - Prototype, Sprint 4 - Prototype, Sprint 5 - Prototype	DONE
4	BEG-106	Hide Adverse Reaction filters when Recalls is selected	Pharmaceutical Consumer Epic	Frank Hellwig	24/Jun/15	1.0	Frontend Usability-Test-Results	▲	Fixed	Sprint 3 - Prototype, Sprint 4 - Prototype	DONE
5	BEG-107	Search icon not visible on iOS mobile during/after editing search text	Pharmaceutical Consumer Epic	Frank Hellwig	24/Jun/15		Usability-Test-Results	▲	Unresolved		NEW
6	BEG-108	No Validation on Email Address in Subscription pop-up	Pharmaceutical Consumer Epic	Brandt Heisey	25/Jun/15	1.0	Usability-Test-Results	▲	Unresolved	Sprint 5 - Prototype	RESOLVED
7	BEG-109	Search a drug for both Recalls and Adverse Reactions in 1 search query	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Backend Frontend Usability-Test-Results	▲	Unresolved		NEW
8	BEG-110	Photograph and upload Photos for search queries	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Backend Frontend Usability-Test-Results	▲	Unresolved		NEW
9	BEG-111	Add auto-fill to search bar	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Backend Frontend Usability-Test-Results	▲	Unresolved		NEW
10	BEG-112	Update date range field	Pharmaceutical Consumer Epic	Frank Hellwig	25/Jun/15	1.0	Frontend Usability-Test-Results	▲	Fixed	Sprint 5 - Prototype	DONE
11	BEG-113	Add hover-text on medical terms	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Frontend Usability-Test-Results	▲	Unresolved		NEW
12	BEG-114	Change on Filters Does Not Prompt New Search for same drug	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Frontend Usability-Test-Results	▲	Unresolved		REJECTED
13	BEG-115	Search on reaction term(s)	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Frontend Usability-Test-Results	▲	Unresolved		NEW
14	BEG-117	Subscription Initialization Emails Not Sent for Adverse Reactions	Pharmaceutical Consumer Epic	Brandt Heisey	25/Jun/15	1.0	Usability-Test-Results	▲	Unresolved	Sprint 4 - Prototype, Sprint 5 - Prototype	NEW
15	BEG-120	Show social media icons w/o having to make an extra click to view them	Consumer Interaction	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		REJECTED
16	BEG-121	Add Search on Known Drug Interactions (labels)	Pharmaceutical Consumer Epic	Frank Hellwig	25/Jun/15	1.0	Usability-Test-Results	▲	Unresolved	Sprint 5 - Prototype	NEW
17	BEG-122	Move 'All date range' option to the bottom of the dropdown	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		REJECTED
18	BEG-123	AdverseReaction does not pull data for all genders/ages	Pharmaceutical Consumer Epic	Brandt Heisey	25/Jun/15	1.0	Usability-Test-Results	▲	Unresolved	Sprint 4 - Prototype	REJECTED
19	BEG-124	Add spell check to search bar	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		REJECTED
20	BEG-125	Search on generic names	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		DEFERRED
21	BEG-126	Add FAQ to BE Safe to define what is OpenFDA	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		REJECTED
22	BEG-127	Reduce the size of the social media icons	Pharmaceutical Consumer Epic	Jefferson Baker	25/Jun/15	1.0	Frontend Usability-Test-Results	▲	Fixed	Sprint 5 - Prototype	DONE
23	BEG-128	Backspace while out of focus goes to previous page	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Frontend Usability-Test-Results	▲	Unresolved		REJECTED
24	BEG-129	Gateway Error on email subscription	Pharmaceutical Consumer Epic	Frank Hellwig	25/Jun/15	1.0	Usability-Test-Results	▲	Fixed	Sprint 5 - Prototype	DONE
25	BEG-130	Samsung Smart Phone displays two formats of navigation buttons	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		REJECTED
26	BEG-131	Add OpenFDA logo to app	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		REJECTED
27	BEG-132	Rank/Prioritize data based on hot-button words	Pharmaceutical Consumer Epic	Brian Shafer	25/Jun/15		Usability-Test-Results	▲	Unresolved		DEFERRED

Figure 62. JIRA Issue List of based on Sprint 3 Usability Testing Results

See Appendix E for Sprint 3 usability testing minutes.

g.8.2.2. Sprint 6 Usability Testing Results



T	Key	Summary	Labels	Epic Link	Fix Version/s	Status	Resolution	Assignee	Created
1	BEG-170	Add BoldFace to Recall Category	[UsabilityTestingResults2]	Pharmaceutical Consumer Epic		NEW	Unresolved	Brian Shafer	04/Jul/15
2	BEG-169	Add label to Carousel to identify why random drugs are shown	[UsabilityTestingResults2]	Pharmaceutical Consumer Epic		NEW	Unresolved	Brian Shafer	04/Jul/15
3	BEG-168	Show drugs in the News in Carousel (or other feature)	[UsabilityTestingResults2]	Pharmaceutical Consumer Epic		NEW	Unresolved	Brian Shafer	04/Jul/15
4	BEG-167	Move Me Too icon from Share to Contribute	[UsabilityTestingResults2]	Pharmaceutical Consumer Epic		NEW	Unresolved	Brian Shafer	04/Jul/15
5	BEG-166	Clarify Purpose of BE Safe to Public	[UsabilityTestingResults2]	Pharmaceutical Consumer Epic		NEW	Unresolved	Brian Shafer	04/Jul/15
6	BEG-166	Clarify Purpose of BE Safe to Public	[UsabilityTestingResults2]	Pharmaceutical Consumer Epic		NEW	Unresolved	Brian Shafer	04/Jul/15
7	BEG-165	Add symptom filters to adverse reaction search results	[UsabilityTestingResults2]	Pharmaceutical Consumer Epic		NEW	Unresolved	Brian Shafer	04/Jul/15
8	BEG-164	Relabel Email button	[UsabilityTestingResults2]		1.0	DONE	Fixed	Frank Hellwig	04/Jul/15
9	BEG-163	Duplicate Previous/Next buttons at bottom of page	[UsabilityTestingResults2]		1.0	DONE	Fixed	Frank Hellwig	04/Jul/15
10	BEG-162	Clarify 'No Results' text in Search Results	[UsabilityTestingResults2]		1.0	DONE	Fixed	Frank Hellwig	04/Jul/15
11	BEG-124	Add spell check to search bar	[Usability-Test-Results] [UsabilityTestingResults2]	Pharmaceutical Consumer Epic		REJECTED	Unresolved	Brian Shafer	25/Jun/15

Figure 63. JIRA Issue List of based on Sprint 6 Usability Testing Results

See Appendix F for Sprint 6 usability testing minutes.

g.8.3. User Acceptance Testing

BE conducted Usability Testing with end users unaffiliated with the BE Safe project. Usability Testing occurred during Sprint 4 and after Sprint 6. Bugs identified during User Acceptance Testing were logged in the Product Backlog in JIRA for prioritization and selection for the upcoming sprint. See details of User Acceptance Testing in Evidence Approach C.

g.9. Release Plans

The BE Team worked with the Product Owner to define the high-level features that would go into each Release. Details of release versions 1.0 – 4.0 are detailed below.

Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

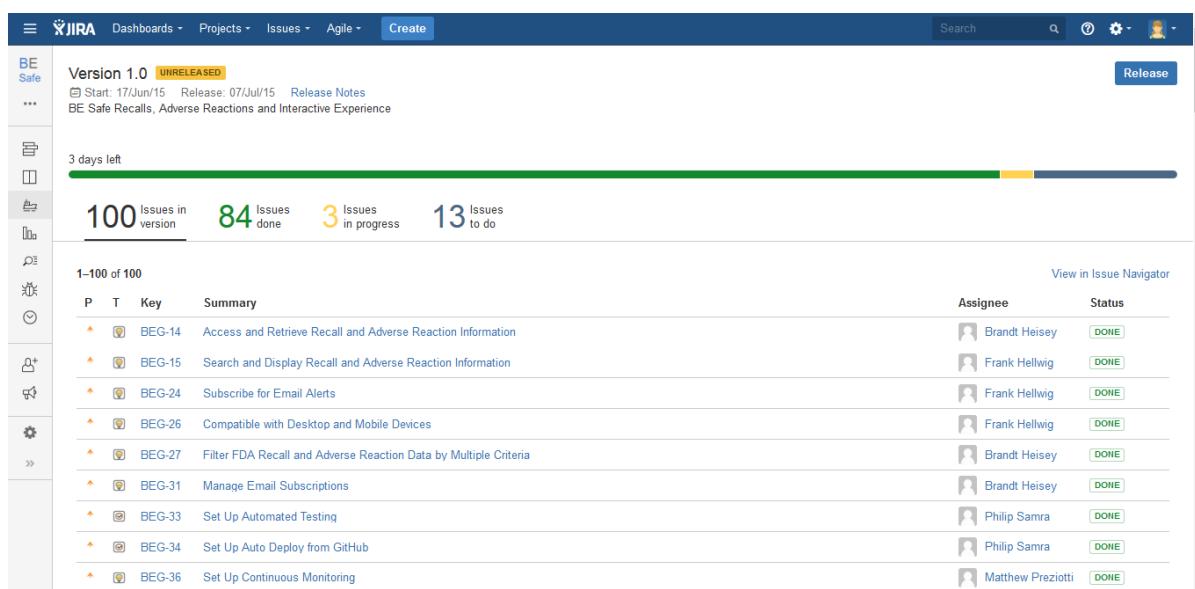


Figure 64. BE Safe Release Plan for Version 1.0

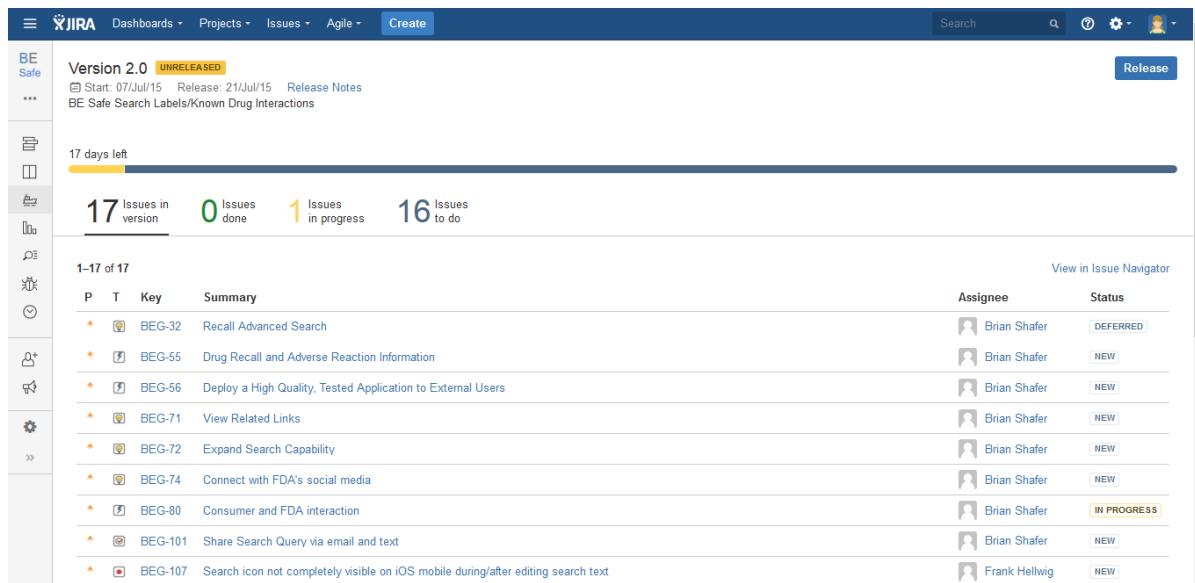


Figure 65. BE Safe Release Plan: Planned User Stories for Release 2.0

Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

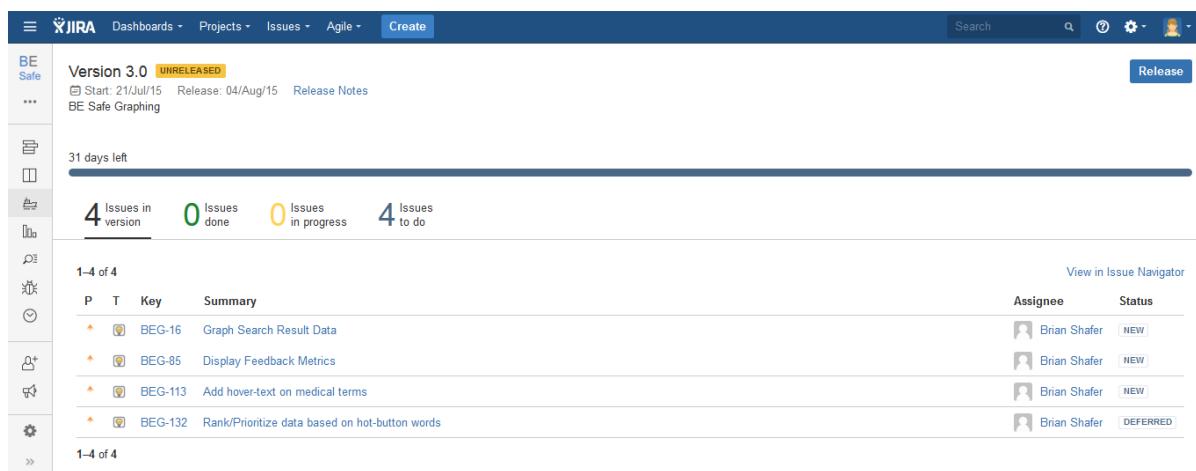


Figure 66. BE Safe Release Plan: Planned User Stories for Release 3.0

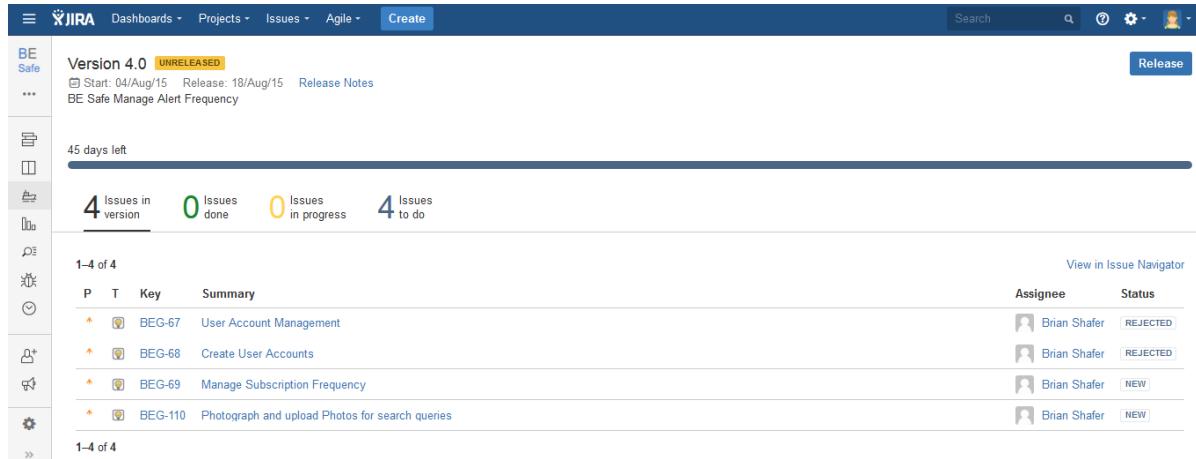


Figure 67. BE Safe Release Plan: Planned User Stories for Release 4.0

Appendix A. Citizen and Healthcare Consumer Personas and Interview Results:

John Q. Public is a 54 year-old male and Marine Corp veteran who lives in Wichita, KS with his wife and three kids. He works at the USPS making \$58,000 a year to support his family. His wife is a stay at home mom. He takes a cocktail of asthma medications and worries that he may not be aware of all recalls on the market. He is an advocate for privacy and does not discuss his health with anyone but his wife and doctor.

- As a citizen and healthcare consumer, I take multiple medications for asthma. I want to be alerted if there are any recalls of the medications I am currently taking. I want to be able to be alerted if there is a dramatic change in adverse events related to my medications. Ideally, I want to be able to set my sensitivity level to such adverse events based on the volume of mortality and/or severity of reactions. I want to be anonymous-----I don't care if my searched/watched medications profile (sans identifying information) is stored to enable such warnings and alerts so long as nobody knows who I am or can track that data back to me.

Kate A. Citizen is a 20 year-old undergrad student at Clemson University with an interest in supply chain management and healthcare. She is in a work-study program with the women's tennis team. Her dream is to work at the Centers for Disease Control someday and plans to write her thesis on the supply chain and response to drug recalls. She does not want to be affiliated personally with the subjects or content that she researches in a professional context.

- As a citizen and healthcare consumer, I want to be able to see if there are any recalls of a specific medication or warnings of the combination of one or more medications. I want to be able to see recalls of a specific medication graphically along with the history of adverse events over time. I don't want any information stored about me or what medications I research.

Conner S. Consumer is a 78 year-old retired salesman in Philadelphia, PA who enjoys reading the local paper daily and writing letters to the editor. He is an early adopter of all things technology and often has the latest gadgets on the market. When online shopping, he takes the time to read and write reviews on sites like Amazon.com. He enjoys sharing his most recent health woes when asked, "How are you doing?" He recently mixed the wrong dosage of medication and had an adverse reaction that sent him to the hospital for 4 days.

- As a consumer of Pharmaceuticals I have had adverse reactions to medications. I would like to know if other people have experienced the same thing. I would also like to let the FDA know that I have experienced the same thing as someone else. I may or may not want the FDA to have my personal information and contact me.

Sherri M. Caretaker is a 39 year-old single mother of two whose son has been diagnosed with Leukemia. She balances her work as an Office Manager with hospital visits with trying to make a normal life for her kids. She is glued to her mobile devices, often working remotely while tending to her children's busy schedules. She uses Facebook and Twitter to stay up to date with friends and family as well as local and national support groups and to keep tabs on current events. She frequently posts her experiences and new articles to Facebook and Twitter.



- As a caretaker for a family member on a complex medication regimen, I want to be able to share relevant drug recalls and adverse reactions with my network that I find interesting or informative.

Appendix B. Clinical Physician Interview Results:

Source: Dr. Frederick Williams, M.D., FACP (Board certified Internal Medicine)

- As a clinical physician caring for patients, the only time I would use the OpenFDA adverse event data would be in rare cases where a patient is suspected to be having a drug interaction that is not published through the normal tools. I could perhaps envision searching such data to see if one or more drugs were related to an adverse event similar to my patient's. Such a search might be in addition to or instead of a PubMed search to look at case history reports. However, this would happen rarely and clinicians such as myself rely on the data and tools that reflect the latest published findings on a drug. Also, I would not rely on it given the FDAs warning that it should not be used for clinical purposes. Applications such as Epocrates and others provide me with drug interactions, dosaging, side effects and other data that I currently rely on.
- As a physician, I look for possible drug interactions (included in structured product labeling?) when seeing a patient/reviewing their list of medications and before prescribing a new medication. I also look for common and serious side effects to advise the patient on what they might experience. I want to see the most common side effects first as reported via the published data, not every adverse event which might be of use to a researcher. I also want to see the most serious side effects. I must translate those side effects into a language laypeople can understand. To use the OpenFDA data, I would need to trust it for clinical use.
- As a physician, it would be an added feature if drug recall data could be compared to my Electronic Medical Records (EMR) for my patients to alert me to any recalls impacting my patients.

Answers to Discovery Questions

- *How would you use this type of information?* Possible use cases are listed above. What makes the usage limited for me includes the following: not for clinical use, don't have time to pour over lists of possible adverse events when the published literature and tools (mobile apps, etc.) can zero in on what is important. The structured product labeling appears to have the information (e.g. drug interactions, side effects) that I most use today, although I get it from existing commercial products and apps such as Epocrates. Recall data is certainly important, but not if I have to pour through the EMR every time a recall comes out.
- *What about this information is interesting in your line of work?* If the information can be prioritized and presented to me in an easily consumable way. If the information could be translated from medical jargon to something a layperson understood, it might be interesting to a non-medical person.
- *Is this most valuable to people in a specific industry or with specific skills and experience or does it also have value to the general public?* The data is probably useful to researchers. If the adverse events and drugs are described with both medical jargon and terms, then it is less useful to the general public. They would need their physician to translate.



1700 N Moore Street, Suite 2110
Arlington, VA 22209

Request for Quotation (RFQ) 4QTFHS150004
Approach Criteria Evidence

Appendix C. Initial Planning Meeting Agenda/Notes

Meeting Description: BE 18F Initial Planning Meeting to conduct initial RFQ Planning activities following the Google Venture's 5-Day Design Model approach. Reference Materials: GSA RFQ files			
Date: 6/18/2015	Time: 9:00 am	Location:	BE Corporate Office

Participants				
1	Brian Shafer	*	7	Phil Samra
2	Mike Holt	*	8	Matt Prezotti
3	Frank Hellwig	*	9	Kelsey Mason
4	Brandt Heisey	*	10	Theodore (Tad) Miller
5	Lauren Turbeville	*		
6	Jefferson Baker	*		

Agenda		Presented By	
1	Scope of Work and Delivery		Brian Shafer & Mike Holt
2	Google Venture 5-Day Design Model <ul style="list-style-type: none">• Unpack<ul style="list-style-type: none">○ Define Problem Set○ Review SME feedback○ Search similar products○ Layout initial design○ Scope out activities for week• Sketch<ul style="list-style-type: none">○ Draw ideas for prototype design○ Select Best Design• Decide	Mike Holt	

- | | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> ○ Storyboard site ○ Decompose into user stories ● Discuss Topics for Tomorrow | | |
|--|---|--|--|

Minutes

- | | |
|--|--|
| | <ol style="list-style-type: none"> 1 BE Team reviews and discusses RFQ for development and delivery requirements. 2 Mike steers group to goal of getting to Day 4 of 5 of the Google Venture 5-Day Design Model into 1 day |
|--|--|

"Day 1:" Unpacking – BE Team...

- | | |
|--|--|
| | <ul style="list-style-type: none"> ● Defines the problem set based on everyone's understanding of the RFQ: need a prototype by 6/26 to 'consume, modify, remix, or display the OpenFDA dataset provided for its functionality.' ● Evaluates interview information with John Q. Public, et al personas and Dr. Williams. <ul style="list-style-type: none"> ○ Since Dr. Williams sees little value with OpenFDA data, BE Team decides to create prototype with John Q. Public in mind. ● Looks at similar products (Epocrates.com, VisualizeFDA) ● Identifies a draft product vision and high-level user story for ability to search on (1) alerts on recalls, (2) adverse events related to my medications, and (3) ability to subscribe/unsubscribe to email alerts <ul style="list-style-type: none"> ○ BE Team raises concerns about HIPAA violations for collecting personally identifiable information (PII) and decides to treat the email addresses the same as a password. ○ BE Team discusses displaying graphic representations of the search results, but decides against it with VisualizeFDA site in mind (recognizing it's not a prototype) ○ BE Team determines datasets are not pretty, so presenting the search results in a user-friendly, consumable display will be important ● Creates a high-level site design (layout) on the whiteboard. ● Creates a schedule for the week |
|--|--|

"Day 2:" Sketching

- | | |
|--|---|
| | <ol style="list-style-type: none"> 4 ● Each BE Team member sketches his/her own design concepts and presents to the BE Team. <ul style="list-style-type: none"> ○ Team discussed what we liked/didn't like for each design ○ Our "Best" design was easy since most designs were along the same lines. |
|--|---|

	<ul style="list-style-type: none">• BE Team agrees to a 'Best' design concept from alternatives:<ul style="list-style-type: none">◦ Headers, footer, logo◦ Search bar similar to Google and radio buttons to toggle between recalls and adverse reactions. Advanced search criteria of date range is available to both; age range options are only available to adverse reaction searches.◦ Search results page will display rows of data by date and recall/adverse reaction information◦ Ability to subscribe to search query available
5	"Day 3:" Decide / Sprint Planning Meeting – BE Team <ul style="list-style-type: none">• Storyboards user scenarios<ul style="list-style-type: none">◦ Spends several hours decomposing the requirements into user stories• Defines 2 epics: Pharmaceutical Consumer (UI, email, query data) & Application Developer (continuous integration, continuous monitoring, deployment prep, security)<ul style="list-style-type: none">◦ User stories are entered into JIRA• Defines a number of user stories based on the interviews with John Q. Public<ul style="list-style-type: none">◦ User stories are entered into JIRA and assigns story points/estimation• Defines tasks for each user story<ul style="list-style-type: none">◦ Tasks are entered into JIRA, and assigned to team members
6	"Day 4:" Prototype BE Team ready to start coding first thing on Friday, 6/19.
7	Mike addresses plans for Tomorrow (Friday, June 19) <ul style="list-style-type: none">• We will conduct an initial user story analysis, refactor as needed.• Conduct a Sprint #1 planning session Kick off Sprint #1



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Approach Criteria Evidence

Action Items	Owner	Status	Due Date	Completion Date
1 See JIRA for action items in task format	all	Open	6/22	6/22

Appendix D. Sprint 6 Status Meeting

Meeting Description: Status of Sprint 6 work and planning for completion				
Date: 7/2/2015	Time: 9:00 am	Location:	BE Corporate Office	

Participants					* in attendance, # absent, + substitute, % via phone
1 Brian Shafer	*	7	Phil Samra		*
2 Mike Holt	*	8	Matt Preziotti		*
3 Frank Hellwig	*	9	Theodore (Tad) Miller		*
4 Brandt Heisey	*	10	Kelsey Mason		
5 Lauren Turbeville	*	11			
6 Jefferson Baker	*				

Agenda			Presented By
1 Introduction			Brian Shafer
2 Work Still to do to complete all Prototype work			Brian Shafer
Schedule of activities			Brian Shafer

Minutes	
1	<p>Finish infrastructure updates - Brandt</p> <ul style="list-style-type: none"> • CI - switched from Travis to Jenkins (hosted did not allow plugins) to Circle CI (building, running tests) • Docker - • SSL issue - • Beanstalk deployment - <p>CloudWatch - Tad (Continuous monitoring) (Brandt to contact Tad when ready to test)</p>

	<p>Explore AWS Config for more config mgmt story - Tad</p> <p>Update documentation - Team</p> <p>Implement Carousel – Frank, Matt, Phil and Jefferson</p> <ul style="list-style-type: none"> • UI - Matt & Phil (Hide Carousel on mobile) • Get Images for top 100 and update JSON - Jefferson <p>Assess NIH APIs - Frank (Kelsey - look at cross referencing NVC #'s; what can we do with it)</p>			
2	<p>Finish all dev and infrastructure work COB today</p> <ul style="list-style-type: none"> • Testing - use Azure until AWS updates are ready • Update Docs: <ul style="list-style-type: none"> ○ Evidence for #7 (schedule, Sprint retrospective, scrum metrics graphics, user stories in Jira, new Jira images, kickoff artifacts, vision, roadmap) – Brian, Mike and Lauren ○ Continuous Integration – Brian w/Brandt ○ Containers – Brian w/ Brandt ○ Continuous monitoring – Brian w/Tad • Readme - update to 1500 words (Brian and Frank) 			
Action Items	Owner	Status	Due Date	Completion Date
1 Finish Infrastructure Updates	Brandt	Open	7/2	
Contact Tad when ready to test for Continuous Monitoring	Brandt	Open	7/2	
Implement Carousel	Frank, Matt, Phil, Jefferson	Open	7/2	
Assess NIH APIs	Frank and Kelsey	Open	7/2	
Update Documentation (see details above)	Team	Open	7/3	

Appendix E. Sprint 3 Usability Testing Minutes

Meeting Description: BE 18F Usability Testing –Sprint 3		
Date: 6/24/2015	Time: 1:00 pm	Location: BE Corporate Office

Participants		* in attendance, # absent, + substitute, % via phone		
1	Lauren Turbeville	*	7	
2	Sarah Joseph	*	8	
3	Ben Ness	*	9	
4	Laura Gross	*	10	
5			11	
6				

Agenda		Presented By	
1	Identify usability testing objectives		Lauren Turbeville
2	Identify known usability issues and roadblocks to efficiency, effectiveness, satisfaction		Lauren Turbeville
3	Define the new features in development and planned for development		Lauren Turbeville
4	Ask pre-test questions and address tester questions		Lauren Turbeville
	Provide URL and execute test		Lauren Turbeville
	Ask test questions and address tester questions		Lauren Turbeville

Minutes

	Lauren introduced concept of usability testing to testers, all of whom are uninvolvled with design and development of BE Safe
1	Objective: To find out whether users could easily search for drug recalls or adverse reactions; filter search criteria based on the available advanced search options (time period, sex, age); and subscribe to a drug recall or adverse reaction email notifications in BE Safe.
	Lauren asked the group to vocalize their thoughts throughout the duration of the test, including what elements could be introduced for a better user experience.
2	Lauren described the BE Safe features currently in development to solicit feedback: sending email notifications, ability to unsubscribe from a specific email notification; and share searches via social media (Facebook and Twitter) based on the search results.
	Lauren asked group, 'What do you think about the new feature(s) we are developing?
	Laura, Sarah and Ben acknowledged and agreed it sounded consistent with a subscription feature.
3	Lauren described the BE Safe features currently in design to solicit feedback: following an adverse reaction search, users have the opportunity to say, 'I had that reaction too' – a 'Me Too' button, if you will that will generate a pop-up for the user to submit feedback. Due to HIPAA concerns, BE Safe would not ask for any personally identifiable information. All information collected is voluntary, including email addresses and consent to contact the user via email.
	Lauren asked group, 'What do you think about the new feature(s) we plan to develop?
	Laura, Sarah and Ben really liked the concept, Laura would consider using that functionality and acknowledges there are a lot of complainers on social media who would make use of something like this.

Lauren collected Device information:

Category	Device	Operating System & Version	Browser	Browser Version
4	Laptop	Windows 8	Internet Explorer	11.0.9600.17842
			Chrome	43.0.2357.130m
			Firefox	38.0.5
	Laptop	Windows 8	Internet Explorer	11.0.9600.17842
			Chrome	43.0.2357.130m
			Firefox	38.0.5
	Laptop	OSX 10.9	Safari	7.0.6 (9537.78.2)
			Firefox	38.0.5
	Tablet	Windows 8	Internet Explorer	11.0.9600.17842
			Chrome	43.0.2357.130m
	Tablet	iOS 8.3	Safari	8.3 [per OS]
	Tablet	Android 5.1.1	Chrome	5.1.1 [per OS]
	Smartphone	iOS 8.3	Safari	8.3 [per OS]

	Smartphone	Apple iPhone6	iOS 8.3	Safari	8.3 [per OS]	
	Smartphone	Samsung Galaxy S5	Android 5.0	Chrome	5.0 [per OS]	
5	Lauren asked group for expectations of a search page. Their responses are below.					
	<ul style="list-style-type: none"> • Sarah: bar with area to type in, magnifying glass • Laura: auto-fill • Ben: drop-down that guesses what you're typing, advanced options/filtering 					
6	Lauren asked group for thoughts on landing page. Their responses are below.					
	<ul style="list-style-type: none"> • Sarah: loading delay; website is left-aligned in IE, ignored instruction text • Laura: instructions not where expected not intuitive as to which drug name to enter (drug name v. drug brand name), more interested in tagline than subheader, tagline in aqua looks like a broken link. All links should be the same color • Ben: simple layout makes sense, didn't notice instructions 					
7	Questions that resulted:					
	<ul style="list-style-type: none"> • Can you do a search of both drugs and recalls at same time for same drug? • Can you search for generic drug names? • Can you take a picture of a medication using smartphone to conduct search? 					
	Group consensus:					
	<ul style="list-style-type: none"> • Adverse reactions advanced options should only display if adverse reactions is selected. Otherwise, confusing • Too much blue on page with blue and white cloud wallpaper and subheader 					
7	Lauren asked group for expectations of a search results page, subscribe button and clear form button. Their responses are below.					

Group consensus:

- Search results page: list of results with short summary under header, Google-like view that takes you to a new view of the page
- Subscribe button: populate email address and click submit
- Clear form button: clears search

Lauren asked to execute searches on both recalls and adverse reactions, using filters and subscribe to alerts for both recalls and adverse reactions

Lauren asked group for thoughts on search results page. Their responses are below.

- 8
- Sarah: should capitalize headers on search table, recall details have boldface on text I'm not interested in – should be reversed; probably wouldn't use the clear feature; Samsung phone has 2 sets of navigation buttons
 - Laura: no auto-correct for misspelled medical terms – add, 'Do you mean...' spellcheck; include hover text to define medical terms; search on 'pataday' does not show males for 'both' filter, but they exist under 'male' filter; same with ages – not all inclusive; add search on reactions (coughing); hitting backspace while out of focus takes user to previous page in browser; taglines should not be blue; no change on subscribe pop-up if email address is incomplete; gateway error occurs; expect email confirming subscription initialized with option to unsubscribe; helpful for site to have FDA logo to show authority
 - Ben: does not associate share icon with share concept – thought share icon would take him to related articles; replace share icon with 3 social icons to reduce number of clicks; move 'all date range' to bottom of drop-down field and list most recent first; wants to see more options in the date range drop-down; would like to be able to change the filters on an adverse reaction search without having to hit search icon again - not clear that the user needs to clear the search –; can't see search button on iPhone after search term entered

Questions that resulted:

- Does 'no results' message mean I spelled it wrong? Or there are no results?
- Does 'date' mean date posted, date reported or date occurred?
- What is OpenFDA?



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Action Items	Owner	Status	Due Date	Completion Date
1 Lauren to take feedback to team for analysis and prioritization. See JIRA for action items in task format	all	Open	6/24	6/25

Appendix F. Sprint 6 Usability Testing Minutes

Meeting Description: BE 18F Usability Testing – Sprint 6		
Date: 7/3/2015	Time: 3:00 pm	Location: Meridian Hill Park, Washington DC

Participants		* in attendance, # absent, + substitute, % via phone	
1	Lauren Turbeville	*	
2	Christina Patterson	*	
3	Robert Adams	*	

Agenda		Presented By	
1	Identify usability testing objectives		Lauren Turbeville
2	Identify known usability issues and roadblocks to efficiency, effectiveness, satisfaction		Lauren Turbeville
3	Define the new features planned for development		Lauren Turbeville
4	Ask pre-test questions and address tester questions		Lauren Turbeville
	Provide URL and execute test		Lauren Turbeville
	Ask test questions and address tester questions		Lauren Turbeville

Minutes	
	Lauren introduced concept of usability testing to testers, all of whom are uninvolved with design and development of BE Safe
1	Objective: To find out whether users could easily search for drug recalls or adverse reactions; filter search criteria based on the available advanced search options (time period, sex, age); and subscribe to a drug recall or adverse reaction email notifications in BE Safe and share BE Safe with others.

	Lauren asked the group to vocalize their thoughts throughout the duration of the test, including what elements could be introduced for a better user experience.				
2	Lauren described the BE Safe features planned for development to solicit feedback: search for known drug interactions; graph search results; share search results via email and text message; search a drug for both Recalls and Adverse Reactions in 1 search query				
	Lauren asked group, 'What do you think about the new feature(s) we plan to develop? Christina and Robert said the new features sound good.				
3	Lauren collected Device information:				
Category	Device	Operating System & Version	Browser	Browser Version	
	Laptop	ASUS SonicMaster	Windows 8	Internet Explorer	11.0.9600.17842
				Chrome	43.0.2357.130m
				Firefox	38.0.5
	Laptop	Apple MacBook Pro	OSX 10.9	Safari	7.0.6 (9537.78.2)
				Firefox	38.0.5
	Tablet	Nexus 7	Android 5.1.1	Chrome	5.1.1 [per OS]
	Smartphone	Apple iPhone6 Plus	iOS 8.3	Safari	8.3 [per OS]
	Smartphone	Apple iPhone6	iOS 8.3	Safari	8.3 [per OS]

4	<p>Lauren asked group for expectations of BE Safe Website. Their responses are below.</p> <ul style="list-style-type: none"> • Christina: expects to feel safer about drugs prescribed • Robert: expects to be able to find drug information he needs;
5	<p>Lauren asked group for thoughts on landing page. Their responses are below.</p> <ul style="list-style-type: none"> • Christina: Looks good. • Robert: Not enough information about the site's purpose. If I know why I'm using BE Safe, it's straight to the point
6	<p>Questions that resulted:</p> <ul style="list-style-type: none"> • What is the purpose of this site?
7	<p>Lauren asked group for expectations of a search results page. Their responses are below.</p> <ul style="list-style-type: none"> • Christina: find information on the drug I search • Robert: The drug I search for will be in here
7	<p>Lauren asked group to execute searches on both recalls and adverse reactions, using filters and subscribe to alerts for both recalls and adverse reactions. Their responses are below:</p> <ul style="list-style-type: none"> • Christina: 'No Results for Search' – assume either (1) there are no recalls or (2) drug isn't in database (3) maybe I spelled it wrong -- Suggestion: "No recalls/adverse reactions for [drug] in [time period searched]; Medications are hard to spell. Add auto-correct in addition to auto-fill • Robert: Previous and Next buttons should be duplicated at bottom of 10 results b/c that's when user decides to move to next page; Typographic hierarchy would be nice on Recalls. Example. Search on 'aspirin' for recalls and get "Subpotent Drug: ..." or "Incorrect/Undeclared Excipients:..." etc.; Email button leads me to believe I can email these search results to myself/others. Would not think "Email" = subscribe. Consider relabeling button to 'Subscribe' or 'Alert Me'; Searching for adverse reactions to 'aspirin' with filters on Male & Adult 26-39, I get

2500+ results. I don't want to page through results 10 at a time. Would be nice if I could sort the search results on symptoms for specific drug I've searched on. Example. I have had issues with dizziness for other asthma medications I've taken. Has anyone in search criteria reported 'dizziness'?

Questions that resulted:

- What am I subscribing to: alerts to recalls or adverse reactions (or both) of the drug? or alert me with updates on drug? Need to read instructions before I understand what I'm subscribing to.

Lauren asked group to share their searches and provide feedback for both recalls and adverse reactions. Their responses are below:

8 Group consensus:

- Do not expect to see Me Too button under Share icon. Think of Me Too as more of a 'contribute feature.'

Questions that resulted:

- Move Me Too icon under separate 'Contribute' section?

Lauren asked group to execute a search using the carousel and then modify those search results. Their responses are below:

- Christina: Agreed with Robert's assessment
- Robert: Carousel acts as I would expect (taking me to more information on the drug), but it's not intuitive as to why these random drugs are being showcased. Suggest adding a label to indicate they are the top 100 prescribed; 100 seems like a lot of drugs to feature; Would more interested in seeing drugs that are in the news in the carousel (i.e. major recalls instead of random drugs)

1 Lauren asked group to share their final thoughts on BE Safe, suggestions and thoughts on features in development/planned for development. Their responses are below:
0

- Christina: Liked the graphing feature
- Robert: Site is fast, results come up quickly. Suggestions peppered throughout.

Action Items	Owner	Status	Due Date	Completion Date
1 Lauren to take feedback to team for analysis and prioritization. See JIRA for action items in task format	Lauren	Open	7/3	7/3