# Medicare Provider Data Service Design Sprint (Summer 2021)

In Summer 2021, we conducted an 8-week design sprint to design a website for providers that included user feedback and testing throughout.

01. Understand
02. Ideate
03. Define
04. Prototype
05. Test
06. Refine

# Hello! I’m Annie.

## Civic Digital Fellow, UX/UI Design (she/hers)

I recently graduated from Columbia University with a B.A. in Information Science and Art History. I am passionate about designing for underserved users and taking on the hardest problems in our country.

Previously with The Marshall Project, The Metropolitan Museum of Art, The Knight Foundation.

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# Civic Digital Fellowship

The Civic Digital Fellowship is the first-of-its-kind data science and technology internship program that allows **innovative students to solve pressing problems in federal agencies**. As part of the Summer 2021 cohort, accepted with a 6% acceptance rate, I engaged with members of the civic tech community through virtual site visits, mentorship, and professional development with organizations like USDS, 18F, and more.

I joined with a passion for using human-centered **design to tackle real problems with public users** and worked as a Design Fellow with the Centers for Medicare and Medicaid Services (CMS).

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# The Centers for Medicare and Medicaid Services (CMS):

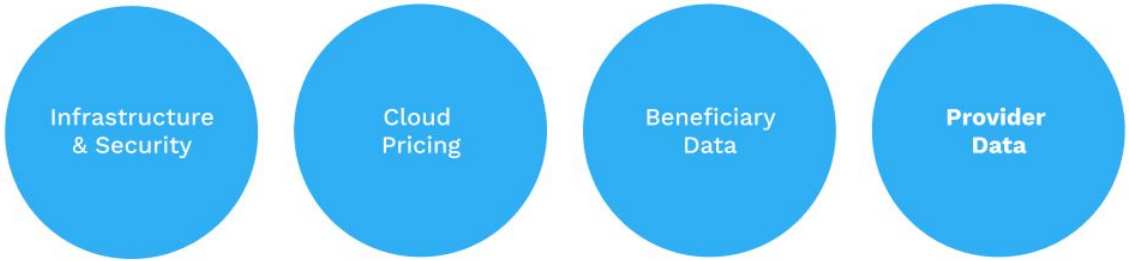
A **trillion dollar federal agency** within the US Department of Health and Human Services that **administers the Medicare program to 61 million Americans** (19% of the US population), staggeringly **in need of modernization**.

Currently, the system runs on 8 million lines of COBOL and 1.5 million lines of proprietary assembly language on 15 disparate mainframe computers. Its **age, complexity, and criticality of the technology and the healthcare system** itself presents unique and significant challenges.

The goal at large is to create a Medicare claims payment system that is no longer a monolithic black-box system on the mainframe but a **cloud-hosted system** implemented with best-in-class modern software development practices. Critically, this system will be **designed to grow and support new payment models and innovation in policy** such as value-based care to Americans the **healthcare they need to live and thrive**.

# Medicare Payment System Modernization:

Medicare Payment System Modernization (MPSM) involves 4 key product lines:

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# Medicare Payment System Modernization:

Medicare Payment System Modernization (MPSM) involves 4 key product lines:


The **Provider Specific File (PSF)** is a structured, historical dataset used to adjust Medicare's rates for inpatient care.

The **Provider Data Service (PDS)** aims to modernize the PSF as a cloud-based API accessible through a public website.

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# The Challenge + the Goal:

**The Challenge:** The Provider Specific File (PSF) is not readable by users, released on a quarterly lag, requires third parties to access it, and for this reason, error-prone.

**The Goal:** Design the **UX and UI** for the **Provider Data Service** to provide users with real-time, integrated access to all provider records in the cloud. Enhance **usability, accessibility, responsiveness, and accuracy** of provider-specific data in the Medicare pricing and payment ecosystem.

# The Design Sprint:

**Team:**

- Janie (Product/Design)
- Annie (Design)
- Alisha (Product)
- Tanner (Dev/Product)
- Rowland (Dev)

- Alpha Site, User Research
- Organize the Sprint
- **Set up Mural Boards**
- **Lead and Facilitate sessions**

**Tools:**

- Mural, Figma
- Zoom, Slack

**References:**

- *The Sprint Book* (Jake Knapp)

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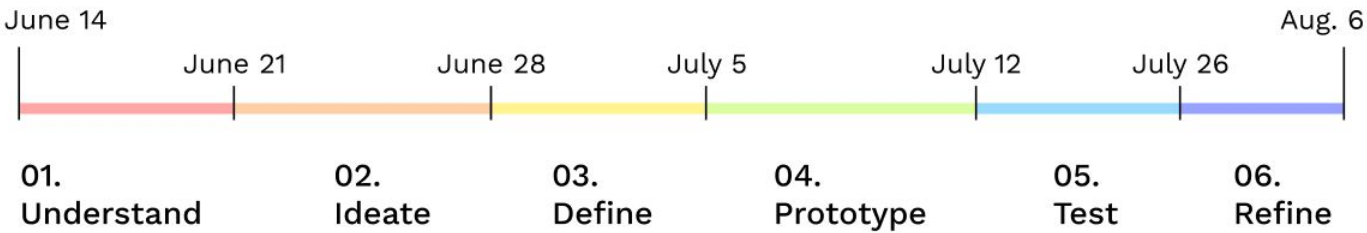
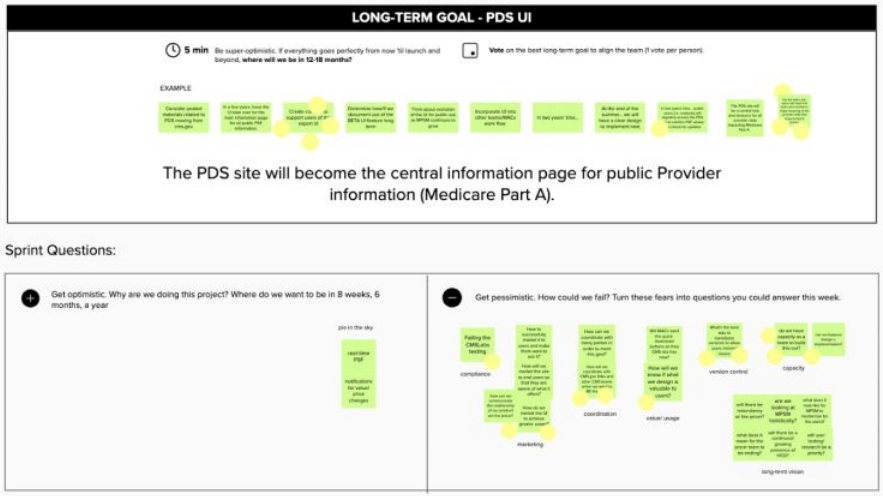
# The Design Sprint:

**Timeline:** 8 weeks

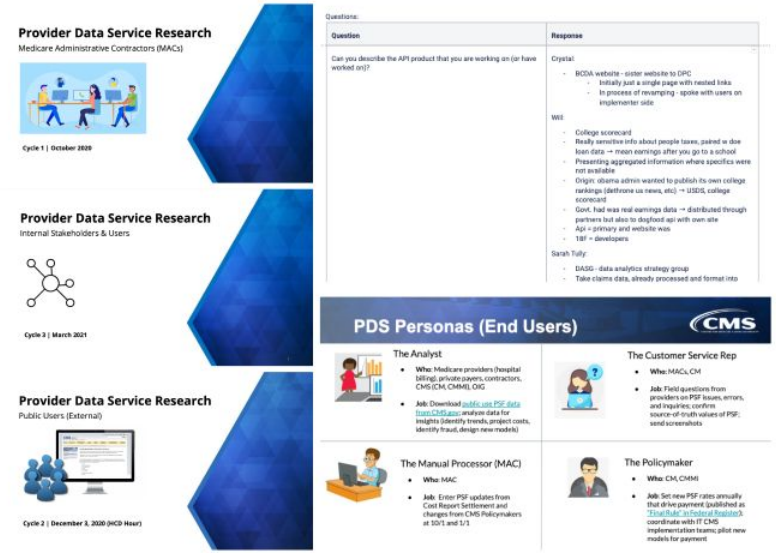


# Understand

In this phase, the team worked to understand the problem landscape and choose a problem using methods like How Might We statements, Subject Matter Expert interviews, Affinity Mapping, and User Journey-Mapping.

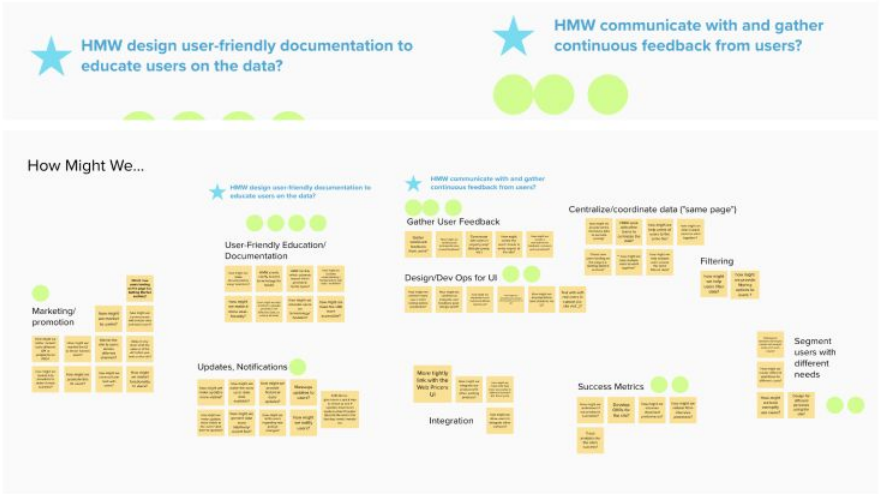



We began by aligning around a long-term goal and asked, “How could we fail?”

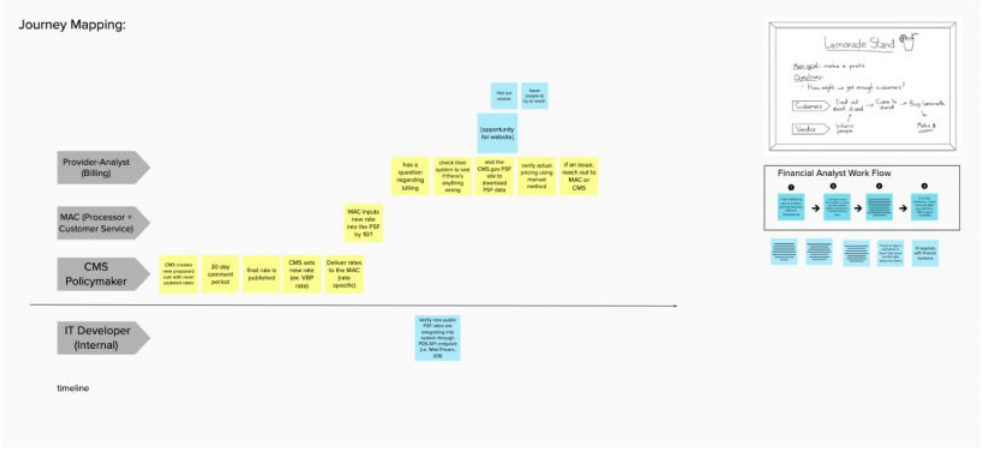



We then reviewed Janie's User Research from earlier cycles, as well as Subject Matter Expert interviews which we conducted eariler in the week.


And synthesized the User Research to identify How Might We (HMW) statements.



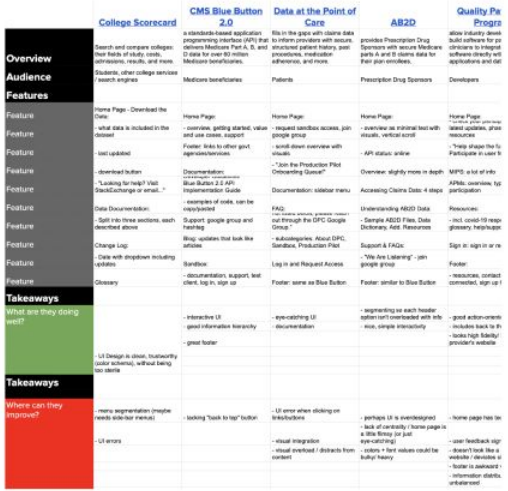

We Affinity Diagrammed the HMW statements to extract the key goals.



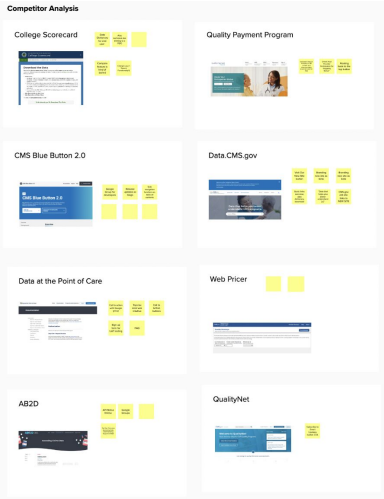

And mapped the User's Journey.

# Ideate

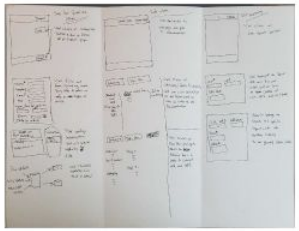
Also known as ‘Diverge’ phase, the team generated multiple ideas by conducting Competitor Analysis, reloading notes and ideas, and sketching. This phase ended with a large number of ideas (Crazy 8s) and preliminary Solution Sketches.

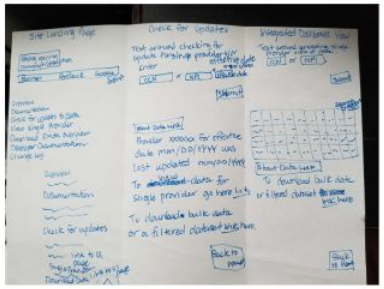


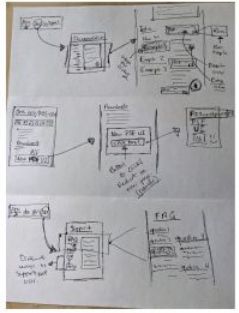
| | College Scorecard | CMS Blue Button 2.0 | Data at the Point of Care | AB2D | Quality Pa Progra |
|---|---|---|---|---|---|
| **Overview** | Search and compare colleges: their fields of study, costs, admissions, results, and more. | a standards-based application programming interface (API) that delivers Medicare Part A, B, and D data for over 60 million Medicare beneficiaries. | fills in the gaps with claims data to inform providers with secure, structured patient history, past procedures, medication adherence, and more. | provides Prescription Drug Sponsors with secure Medicare parts A and B claims data for their plan enrollees. | allow industry-devel build software for pa clinicians to integrat software directly wit applications and dat |
| **Audience** | Students, other college services / search engines | Medicare beneficiaries | Patients | Prescription Drug Sponsors | Developers |
| **Features** | | | | | |
| Feature | Home Page - Download the Data: | Home Page: | Home Page: | Home Page: | Home Page: |
| Feature | - what data is included in the dataset | - overview, getting started, value and use cases, support | - request sandbox access, join google group | - overview as minimal text with visuals, vertical scroll | latest updates, phas resources |
| Feature | - last updated | Footer: links to other govt. agencies/services | - scroll-down overview with visuals | - API status: online | - "Help shape the fu Participate in user t |
| Feature | - download button | Documentation: | - "Join the Production Pilot Onboarding Queue!" | Overview: slightly more in depth | MIPS: a lot of info |
| Feature | - "Looking for help? Visit StackExchange or email..." | Blue Button 2.0 API Implementation Guide | Documentation: sidebar menu | Accessing Claims Data: 4 steps | APMs: overview, typ participation |
| Feature | Data Documentation: | - examples of code, can be copy/pasted | FAQ: | Understanding AB2D Data: | Resources: |
| Feature | - Split into three sections, each described above | Support: google group and hashtag | out through the DPC Google Group." | - Sample AB2D Files, Data Dictionary, Add. Resources | - incl. covid-19 resp glossary, help/suppo |
| Feature | Change Log: | Blog: updates that look like articles | - subcategories: About DPC, Sandbox, Production Pilot | Support & FAQs: | Sign in: sign in or re |
| Feature | - Date with dropdown including updates | Sandbox: | Log in and Request Access | - "We Are Listening" - join google group | Footer: |
| Feature | Glossary | - documentation, support, test client, log in, sign up | Footer: same as Blue Button | Footer: similar to Blue Button | - resources, contact connected, sign up f |
| **Takeaways** | | | | | |
| What are they doing well? | | - interactive UI<br>- good information hierarchy<br>- great footer | - eye-catching UI<br>- documentation | - segmenting so each header button isn't overloaded with info<br>- nice, simple interactivity | - good action-orient<br>- includes back to th<br>- looks high fidelity/ provider's website |
| | - UI Design is clean, trustworthy (color scheme), without being too sterile | | | | |
| **Takeaways** | | | | | |
| Where can they improve? | - menu segmentation (maybe needs side-bar menus) | - locking "back to top" button | - UI error when clicking on links/buttons | - perhaps UI is overdesigned<br>- lack of curiosity / home page is a little flimsy (or just eye-catching) | - home page has to |
| | - UI errors | | - visual integration<br>- visual overload / distracts from content | - colors + font values could be bulky/ heavy | - user feedback sig<br>- doesn't look like a website / deviates a<br>- footer is awkward<br>- information statistics unbalanced |

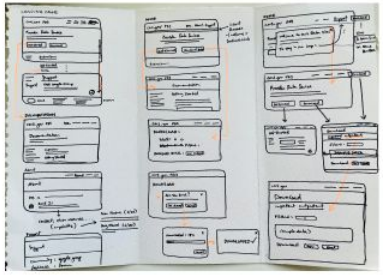



I conducted Competitor Analysis to assess the strengths and weaknesses of similar services and pulled out key insights with the team.





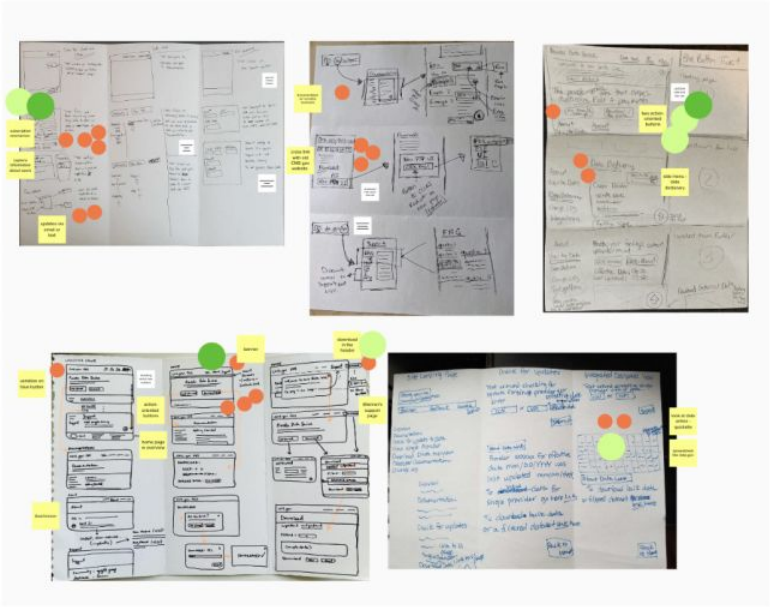




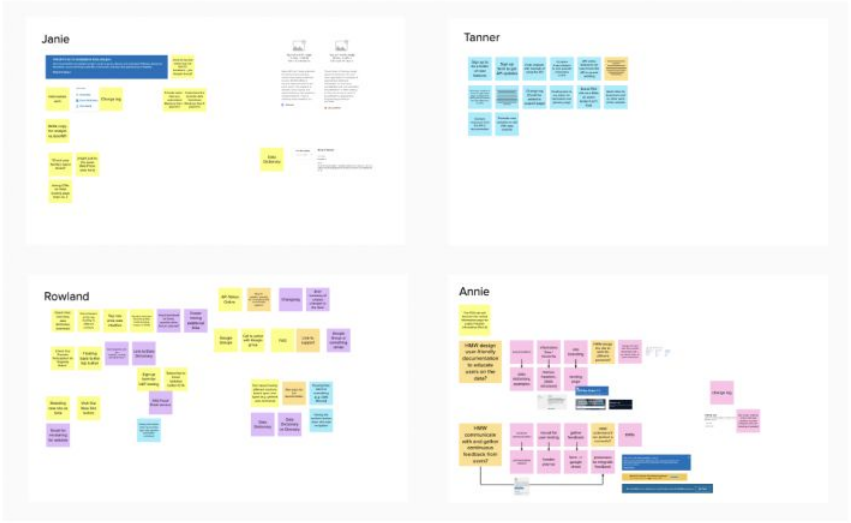
We began with Crazy 8s - 1 min per sketch, 8 sketches - and then spent 30 minutes on 3 more developed, thoughful sketches.

# Define

Also known as ‘Converge’ phase, the team worked together to select the best ideas from the wall. Methods like Dot Voting help to create idea heat maps. These ideas were then translated into a story board where the team defined the user’s interaction with the solution.

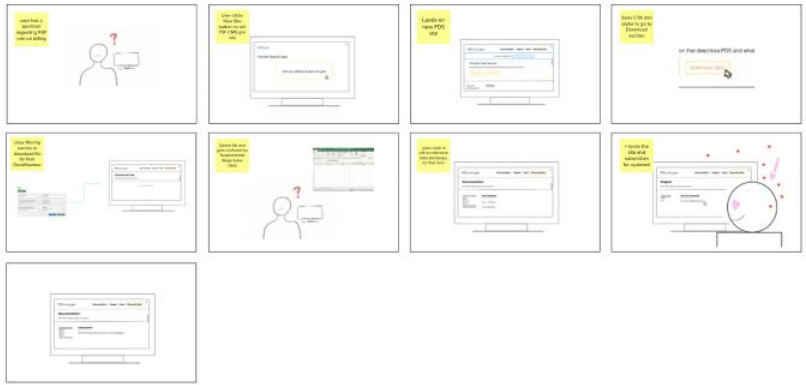


We shared our sketches in an anonymous Art Museum and dot voted to identify our (4) favorite ideas and (1) favorite solution.




We refreshed our notes from Phase 01: Understand and sticky noted ideas for sketching.

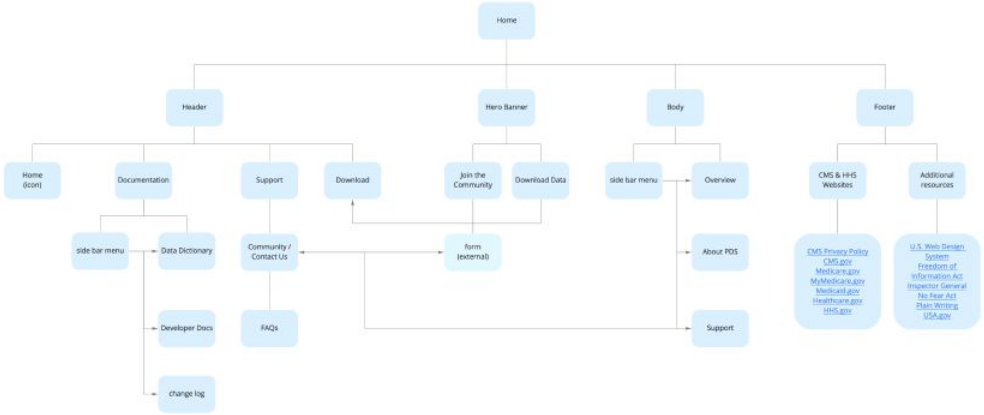

Storyboard: solution mapping space



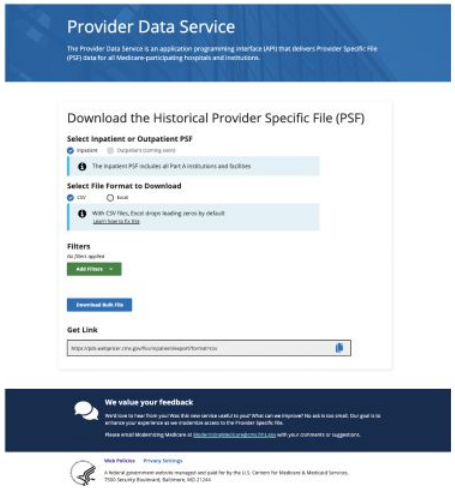
After we independently identified users' action steps, the team came together to create a Storyboard, complete with words and illustrations.

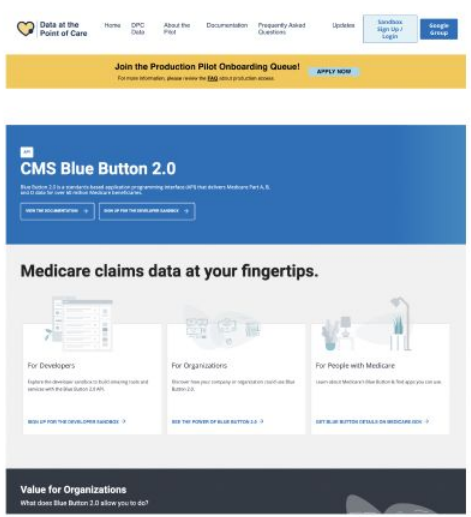
# Prototype

In this phase, we used the chosen ideas and storyboard to create a prototype in Figma, beginning by creating a site map and then the prototype populated with UX Writing and made clickable with interactive components.



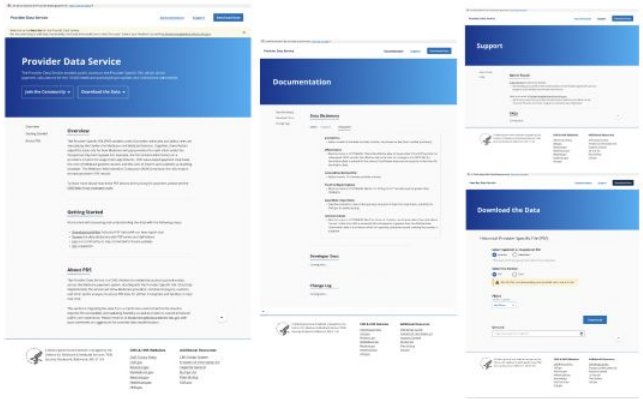

I designed a Site Map to define the website's functionality and as preparation for the prototype.

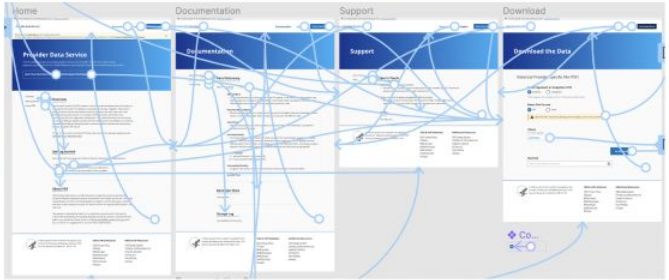



Alpha prototype (from previous design cycles)

I used the Alpha prototype (developed and launched in previous design cycles) as a basis for functionality for the Beta prototype and drew on successful elements identified in Competitor Analysis. I used UX Writing from Janie to populate it with content.




Beta prototype

01. Understand

02. Ideate

03. Define

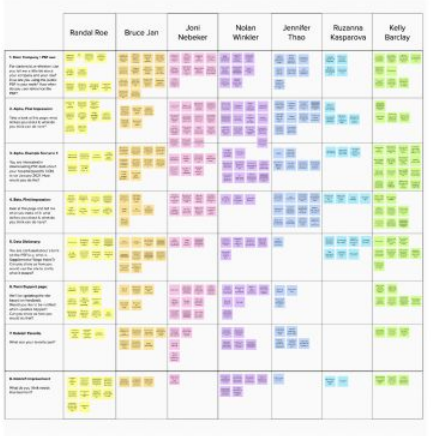
**04. Prototype**

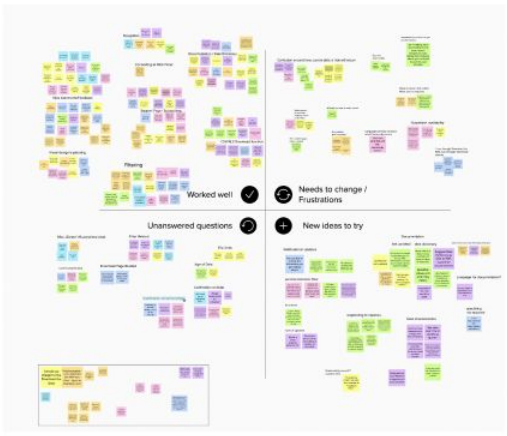
05. Test

06. Refine

# Test

For this phase, we recruited 8 users to test our clickable-prototype. We tested the functionality of the live Alpha site and the visual design and usability of the Beta site. We captured feedback and synthesized it into learnings before returning to the prototype to refine it.

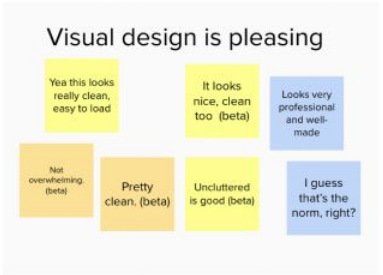



We conducted 8, 30 minute interviews using a script written by Janie. We captured their responses in Mural and conducted Affinity Diagrammming with the team to identify common themes.

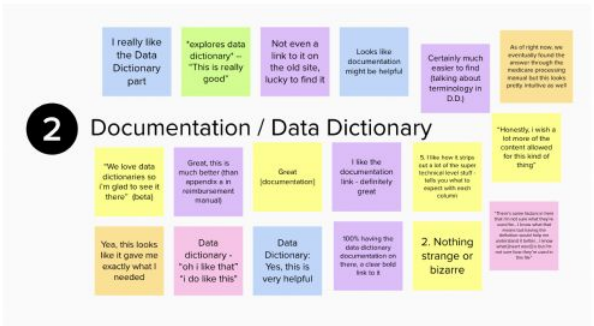
We heard from users that:

1. **The site is intuitive and user-friendly.**


We heard from users that:

**2. Documentation / Data Dictionary, Support, and filtering are helpful.**

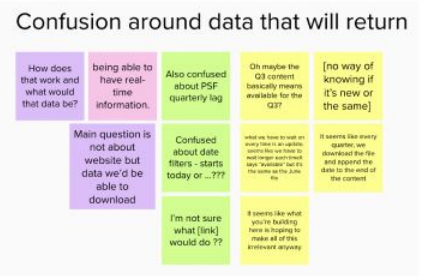


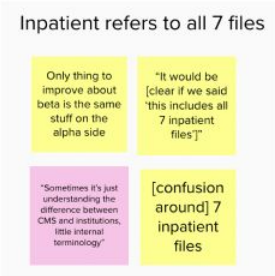


We heard from users that:

**3. The data has been historically - and continues to be - confusing.**





We heard from users that:

**4. They are confused about filters and whether they are required.**

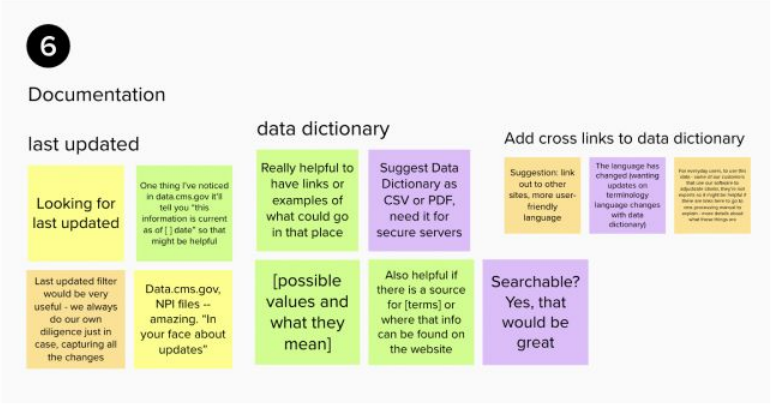

We heard from users that:

**5. There is ambiguity around ‘Join the Community’ and subscribing to updates.**



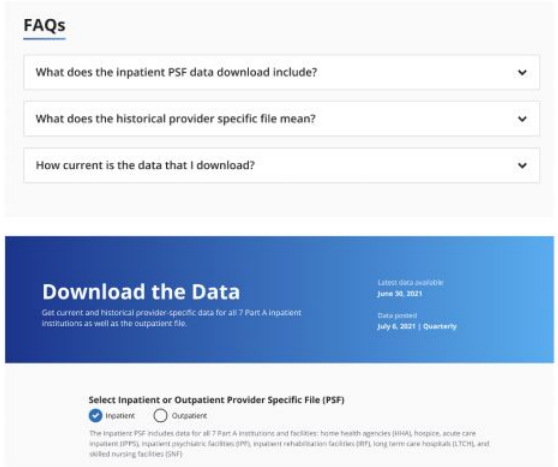
We heard from users that:

**6. There is an opportunity to strengthen documentation.**



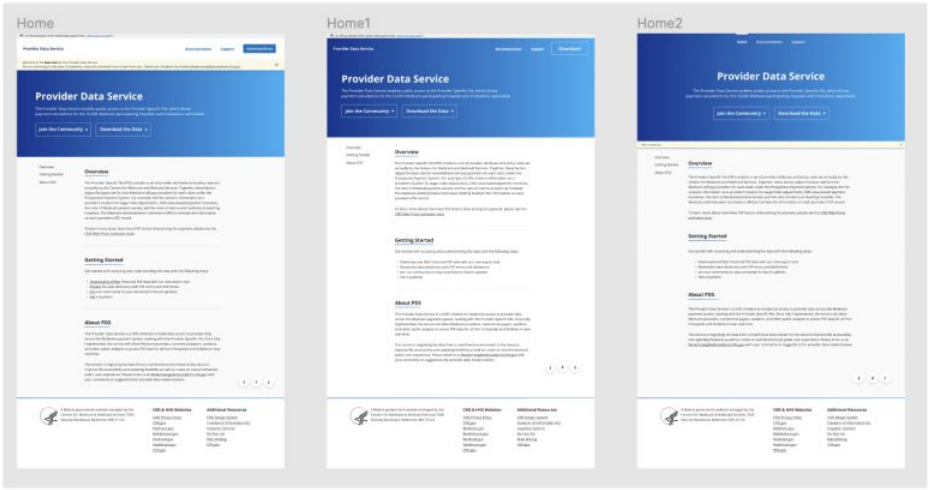
# Refine

In the final phase, we took the insights from User Testing and implemented changes to our prototype. I mocked-up variations, and made final decisions with the team.

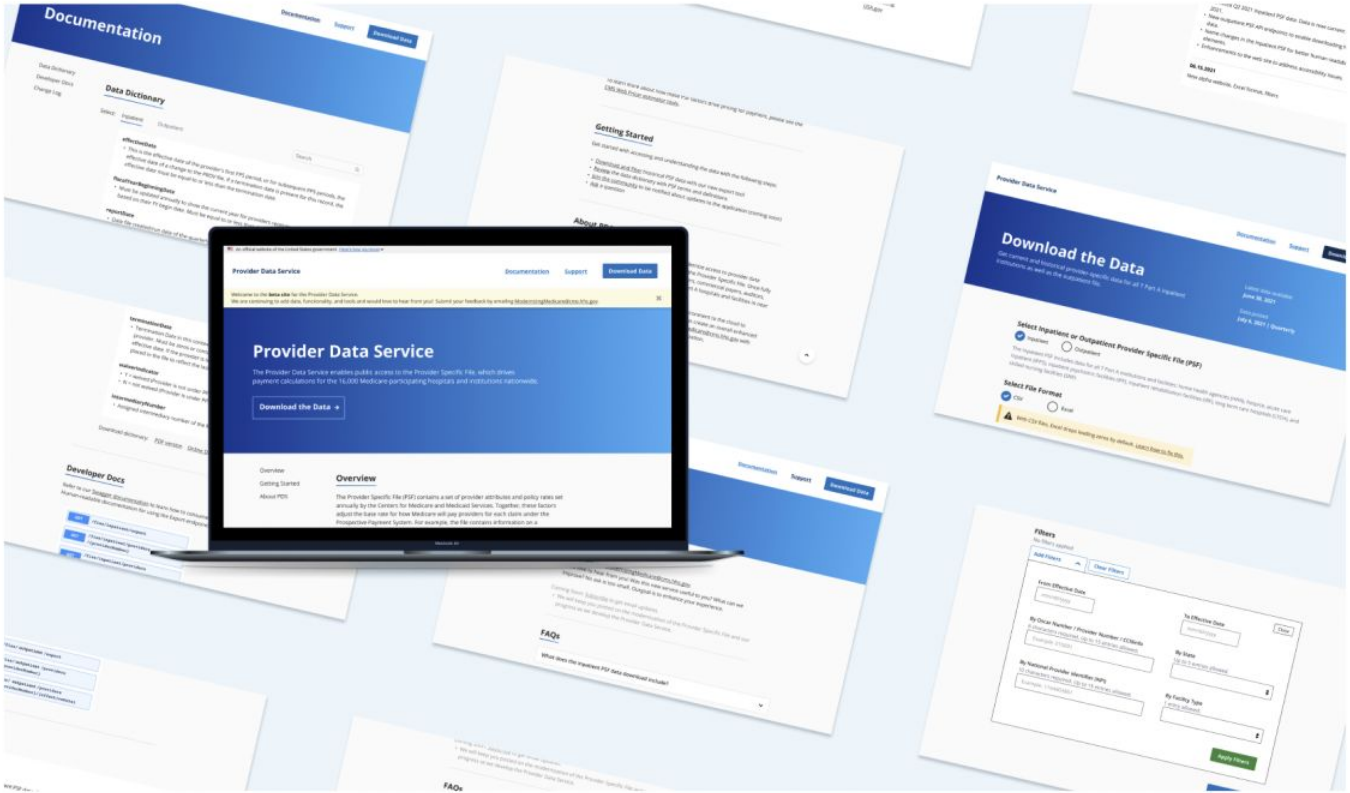

Changes include:

- Stronger documentation via Developer docs, a Change Log, and FAQs
- Added data recency and availability
- Clearer language throughout




I mocked-up a couple variations, although we decided to stick with the first design.

# The Final Product:



# Future Steps:

- Implement mechanisms for continued user feedback
- Develop more comprehensive FAQs, Developer Documentation, and Change Log
- Connect the PDS website with the constellation of CMS websites
- Expand Human Centered Design work beyond this sprint

# Learnings:

01. Human Centered Design in Government
02. Human Centered Design in Practice
03. Design Justice

01. **There is an opportunity to use Human Centered Design to create a government that works better for the people it seeks to serve.**

**User Research and User Experience Design** use methods such as User Interviews, Journey Mapping, Affinity Diagramming, and Personas, as well as User Testing to **design solutions** that aim to and evaluate success based on how well they **serve the needs of users**.

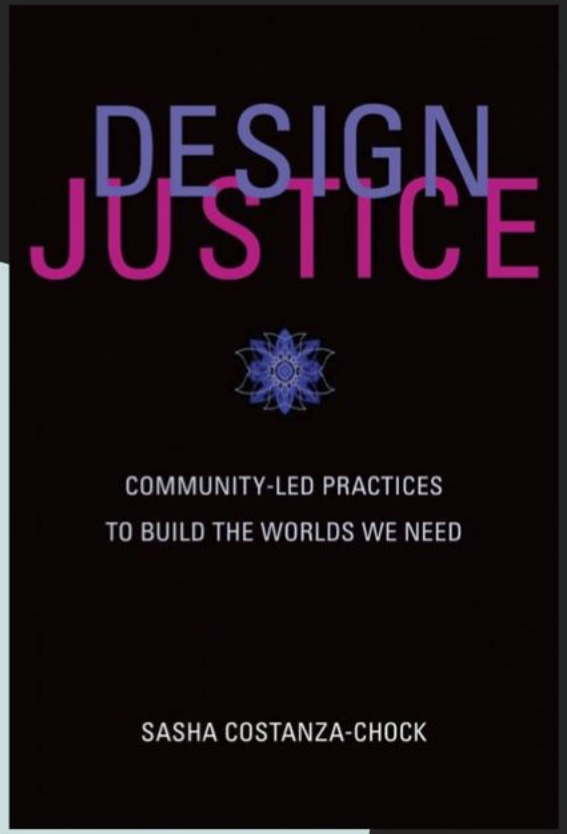
In this design sprint, we used user feedback as the basis for defining the problem, designing the solution, and testing the design, and developed mechanisms to continue to receive and integrate user insights.

## 02. **Human Centered Design in practice requires designers to organize, lead, and facilitate design sprints and teach methodology.**

**Design is both a set of skills and a community of practice.** To grow a community, designers must be **hired and compensated** for not just the work that uses their **design skill set** but also the **educational work** of teaching design methodology to non-designers. This is essential for **human-centered design to become a part of systems and processes**, as opposed to isolated sprints or workshops.

## 03. **Design Justice clarifies that Human Centered Design is neither complete nor enough.**

Design justice is a **framework for analysis of how design distributes benefits and burdens between various groups of people**. Design Justice focuses explicitly on **the ways that design reproduces and/or challenges the matrix of domination** (white supremacy, heteropatriarchy, capitalism, ableism, settler colonialism, and other forms of structural inequality). Design justice is also a **growing community of practice** that aims to ensure a more **equitable distribution** of design's benefits and burdens; **meaningful participation** in design decisions; and **recognition of community-based, Indigenous, and diasporic design traditions, knowledge, and practices**.




**“This book is about the relationship between design and power.**

It’s about the growing community of designers, developers, technologists, scholars, educators, community organizers, and many others who are working to **examine and transform design values, practices, narratives, sites, and pedagogies so that they don’t continue to reinforce interlocking systems of structural inequality**…

**Most of all it is an invitation to build a better world.”**

# Thank you!

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