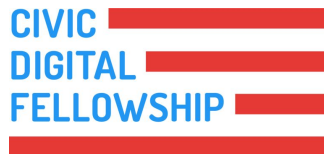


# Summer Fellowship Presentation on InnovationX Design Standards and Data Interoperability Sprints for CancerX

HHS, Office of Science and Medicine  
Supervised by Kathleen Carroll and Kristen Honey, PhD



U.S. Department of  
**Health and Human Services**  
Enhancing the health and well-being of all Americans

**Ryan Manthy**  
Illinois Institute of Technology  
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# **Part I: Developing a New Framework for InnovationX Portfolio Sites**

# My Process for Developing This Project

1

## Identifying Problems

Conducted an analysis of the InnovationX portfolio sites and identified the challenges and opportunities for better user design.

2

## Building Demo

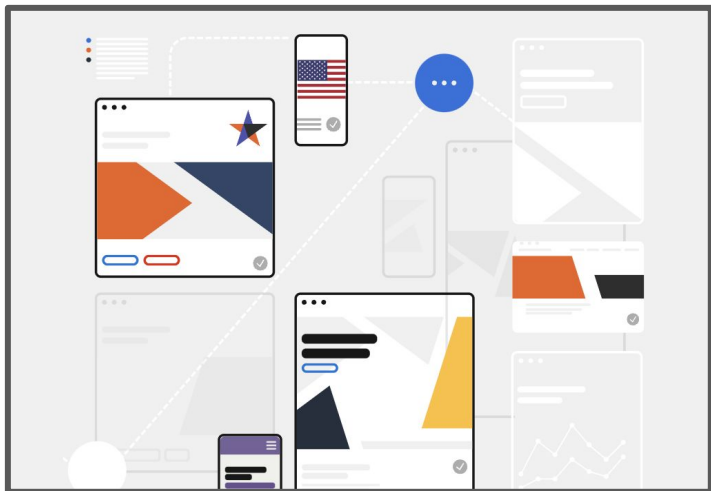
Developed new iterations of design for the KidneyX program's site copy and design layout using the USWD principles

3

## Continued Iteration

Working with KidneyX and InnovationX stakeholders to update new copy and improve usability.

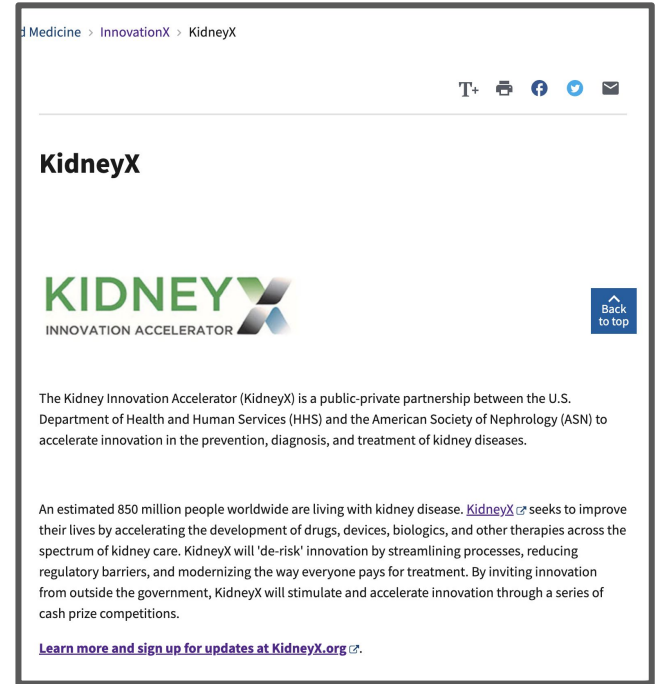
# Compliance with New Design Elements



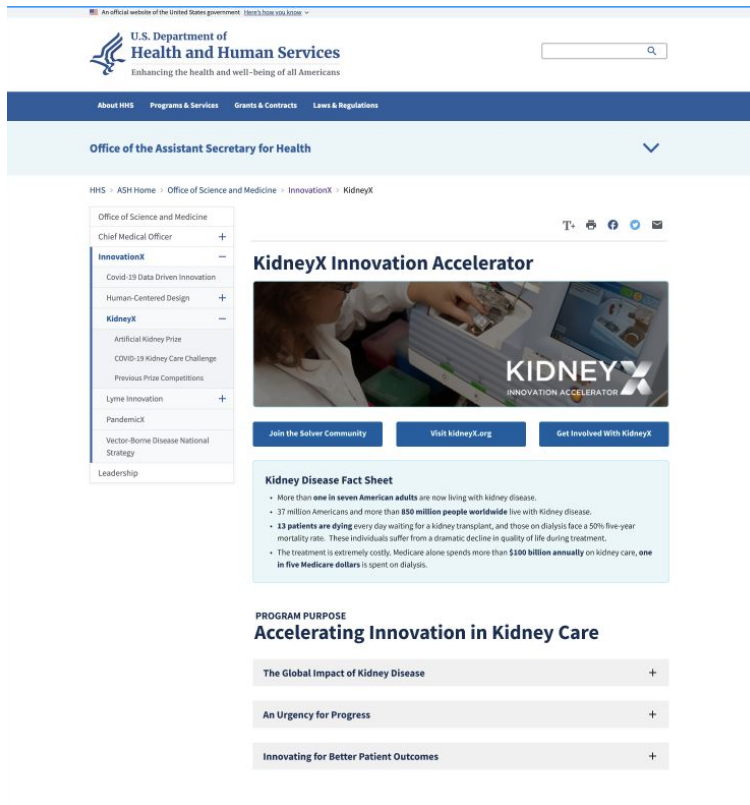
- U.S Web Design Systems (USWDS)
  - Created under the **21st Century Integrated Digital Experience Act**
  - Aligns with Section 508 and ADA accessibility requirements, ensuring digital content is accessible to people with disabilities.
  - Designed to work seamlessly with modern web technologies, enhancing compatibility and integration across platforms.
- Design Principles
  - Starting With User Needs
  - Earning Trust
  - Embracing Accessibility
  - Promoting Continuity

# Problem Statement

- Challenges
  - Unintuitive user experience due to walls of text and unclear description of KidneyX's key purpose
  - Copy is outdated and doesn't reflect the current advances of Kidney
- Opportunities
  - Introduce U.S Web Design Systems (USWDS) standards to the site
  - Improve copy to “start with purpose” and



# First Iteration Figma



## KEY PARTNERS Collaborating Institutions and Organizations



## CURRENT & RECENT INITIATIVES KidneyX Innovation Challenges



# Feedback from Review Done To-Date

- InnovationX Internal Team (Preliminary Review Conducted by Kristen and Ghelatia)
  - Revise the structure to introduce the “Mission” of KidneyX before contextualizing the problem and going into detail about key work.
  - Update the site copy to ensure consistent language between [KidneyX.org](https://www.kidneyx.org) and the KidneyX page on HHS site.
- OASH Comms
  - All components from USWDS should be already translated to the HHS site, so the UX layout will be okay
  - Cannot use generic photos because they don't perform well. If photos are added to cards at the bottom they will need to be from KidneyX or other non-generic source

# Key Updates to Site Copy and Layout

## Site Copy Changes

- Avoiding the use of “Fact Sheet” language
- Updating language to be consistent with ASN and [kidneyX.org](https://www.kidneyx.org) (e.g “people living with kidney disease”)
- Revising “how it works” section to focus more on tangible deliverables including AKP and other prize challenges
- New language to describe American Society of Nephrology
- Updated copy for Prize Challenge descriptions and prize amounts

## Layout Updates

- Moving “Kidney Disease by the Numbers” below “Program Purpose” to ensure that the mission is front and center
- Including “Join the Solver Community” as one of the call-to-action buttons on the top

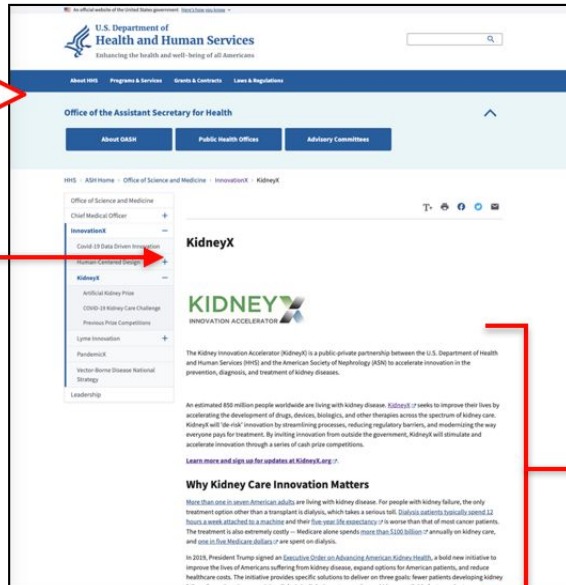


# New Vs. Old Landing

"Web users spend 80% of their time looking at information above the page fold. Although users do scroll, they allocate only 20% of their attention to below the fold." (Nielsen)

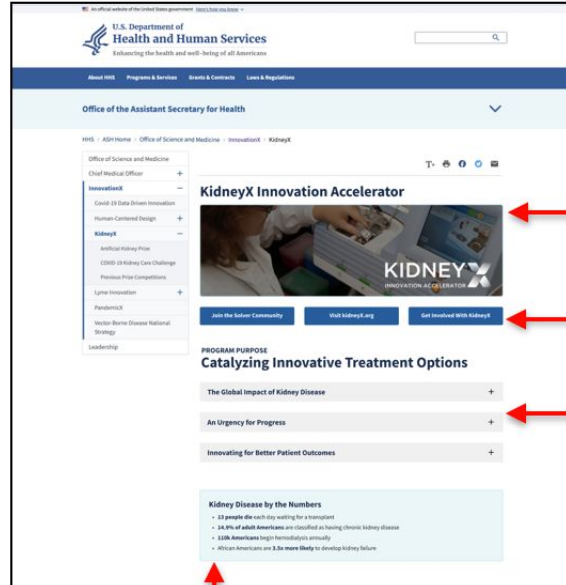
The current header is un-engaging and follows more of the format of a blog given the lack of customized imagery, buttons, etc. An update to revise this header could drive users to engage with KidneyX.org, which is the ultimate goal of the site.

## Current Site



A landing page with walls of text can dissuade the user from going forward down the page. Transitioning to a more organized and less cluttered structure could lead to improved Average Engagement Time.

## Updated Proposal



Use of relevant imagery to build a sense of trust with the user

Call-to-action (CTAs) will drive users in the desired direction

Using accordion menus allows for large amounts of information to be displayed without cluttering the page.

The "by the Numbers" section reformats the opening information regarding "Why Kidney Care Innovation Matters" through addressing a couple of key statistics that will motivate a user to care about the cause.

# An Example of Site Copy Updates

## Current Site

**The KidneyX Approach** - Building off the success of similar public-private accelerators, KidneyX is engaging a community of researchers, innovators, and investors to bring breakthrough therapies to patients through:

**Development** - Driving patient access to disruptive technologies via competitive, merit-based prize funding for innovators.

**Coordination** - Providing a clearer and less expensive path for bringing products to patients and their families.

**Urgency** - Creating a sense of urgency by spotlighting the immediate needs of patients and their families.

## Updated Proposal

**Subheader:** How it Works

**Header:** Fueling Breakthroughs Through Partnerships

**Part 1:** Analyzing the Kidney Care Landscape and Identifying Opportunities for Innovation

**Further Context:** The Kidney Innovation Accelerator (KidneyX) is a public-private partnership between the US Department of Health and Human Services (HHS) and the American Society of Nephrology (ASN). Launched in 2018, with a \$25 million commitment from ASN, KidneyX was established to support and accelerate innovation in the field of nephrology. KidneyX identifies opportunities to revolutionize prevention, diagnosis, and treatment, driving advancements that go beyond existing Kidney treatments and care strategies.

**Part 2:** Catalyzing Innovation Through Competition

**Further Context:** As of August 2023, 75 teams have been awarded for their participation in

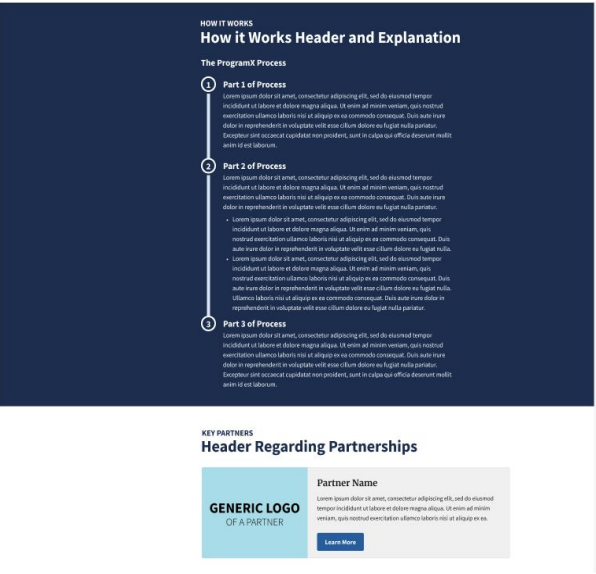
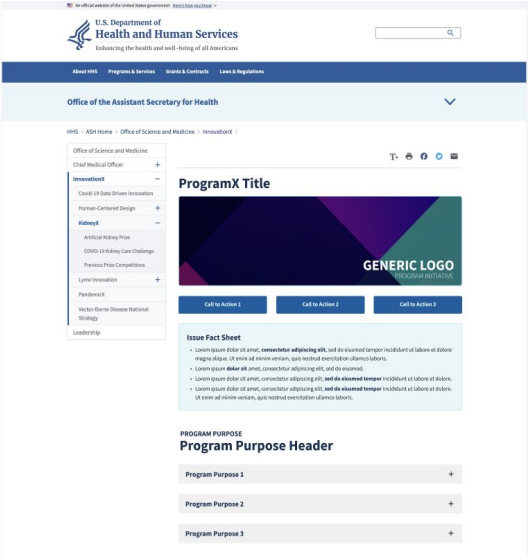
KidneyX challenges. KidneyX has launched 6 prize challenges to-date, including the \$13.1 million Artificial Kidney Prize (AKP) launched in 2020. These innovations have included novel strategies for chimera organ transplantation, utilizing production techniques from semiconductor manufacturing for kidney cell encapsulation, and developing systems to enable autonomous blood purification implants.

- The Artificial Kidney Prize Phase is a multiphase competition that is accelerating the development of artificial kidneys toward human clinical trials. Artificial kidneys may be wearable, implantable, bioengineered, developed as a xenotransplant or chimera organ, or other approaches not yet conceived.
- Earlier prize challenges included the Redesign Dialysis Phase 1 and 2 Challenge (\$4.125 million awarded), the Patient Innovator Challenge (\$70 thousand awarded), and the KidneyX COVID-19 Care Challenge (\$300k awarded).

**Part 3:** Accelerating Adoption and Commercialization

**Further Context:** In the quest towards enhancing quality of life for people living with kidney diseases, KidneyX brings stakeholders from backgrounds as researchers, patients, clinicians, and policymakers to collaborate in the development of novel prize challenges. The innovations proposed are designed to have a transformative impact on the way people with kidney diseases live.

# Generalizing KidneyX Learnings to Other Portfolios



## CURRENT & RECENT INITIATIVES PartnerX Projects

### Initiative 1



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[Learn More](#)

### Initiative 2



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[Learn More](#)

### Initiative 3



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[Learn More](#)

### Initiative 4



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[Learn More](#)

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Content created by Assistant Secretary for Health (ASH)  
Content last reviewed November 6, 2020

# **Part II: Proposing TopX Innovation Sprints for CancerX**

# What is CancerX and TopX?

- CancerX is a public-private partnership announced by The White House as a national accelerator to boost innovation in the fight against cancer as part of the reignited Cancer Moonshot.
- The TOPx Toolkit enables federal agencies to catalyze projects that transform open data into solutions to key national challenges at the heart of their missions.
  - Similar model to the “TED Talk” series



# Open Data Focus Areas

- Combatting the fragmented and inaccessible state of oncology data through community-driven solutions.
- Building a Central & Open Source of Cancer Datasets
  - Develop an open-source central database for cancer-related datasets, streamlining data curation, cataloging, and governance.
- Executing Innovation Sprints On Cancer Data
  - Execute innovation sprints to solicit feedback and insights from the broader community of innovators in the Cancer data space.
- Engaging the CancerX Community on Open Data
  - Promote the principles of open and accessible data to the CancerX community and support community members in opening their data.

## Developing a Sprint Problem Statement

Address the current gaps in cancer data model standards through identifying solutions that unify current approaches under a regulated FHIR-based model and find strategies to implement real-world testing of such a model.

# Sprint Overview

In generating the problem statement, TopX identifies the big picture by problem, opportunity, and outcomes.

## THE PROBLEM Non-Standard Data Reporting

- CMMI is offering to support a FHIR-based reporting standard for clinical data elements building off HL7's mCODE standard
- Payers are using alternative standards and are interested in streamlining under the EOM standard

## THE OPPORTUNITY Improving Interoperability

- Solicit perspectives and innovations from the broader community to improve adoption and implementation of CMMI data standards
- Provide real-world testing opportunities for EOM data standards

## TARGET OUTCOMES New Tech & Policy Solutions

- Facilitate a conversation between SMEs and CMMI around implementation of an innovation sprint
- Engage payers, EHR providers, and other technologists in healthcare around the adoption of EOM data elements

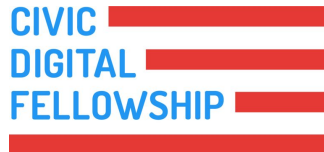


# Outcomes

- Figma wireframes I developed have been handed off to supervisors for review and implementation
- Site copy for KidneyX will be updated based off suggestions
- The Enhancing Oncology Model sprint proposal delivered to CMMI leadership and conversations began on future partnership between InnovationX and CMMI
- CMMI partnership began over this summer period and will continue going into the Fall
- Example template developed for evaluating and presenting open oncology datasets for the CancerX project

# Contact With Any Questions

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