

# UI / UX Proposal for the Montgomery County Department of Health and Human Services

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## **Contents**

Introduction

The Project

The Process

Limitations

Deliverables

## **Introduction**

Montgomery County's Department of Human Health and Services (DHHS) is the county's largest government agency and is responsible for public health and human services that help address the needs of the community's most vulnerable children, adults, and seniors. DHHS delivers services at more than 20 locations in Montgomery County and has over 130 direct service programs.

Any organization of this size would face difficulty in managing its performance metrics, especially without using updated technology. Montgomery County DHHS faces this exact dilemma as it collects metrics from over 700 providers across 130 service programs without any central or standardized management system. Metrics are currently reported to their respective directors and administrators via mail; an outdated method that makes organizing difficult, especially for a director overseeing a large program with many different metrics to assess.

Noune Sekhpossian is a program manager within the DHHS Planning, Accountability, and Customer Service (PACS) whose responsibilities include "developing and refining DHHS program and system measures, consulting and capacity building on appropriate performance metrics for service areas, programs, grants, etc., and leveraging advanced integrated technology, data systems and innovative analytical tools." She represented the DHHS as our client and was our primary contact while we developed the interface.

## **The Project**

The overall goal of this project is to develop a standardized management system that will serve as the nucleus of all data and metrics reported to DHHS. To complete this large project in a single semester, it was divided into three parts. The first was the Metrics Management Plan group, who consulted with the client about cloud-based data backbones for the overall system's storage component. The second part was the Management System Architecture group, who were responsible for building the structure of the overall system's back-end operations. The final group was the UI/UX group, who focused on the system's front end.

The goal of the UI/UX group was to design the simplest and most usable interface possible, regardless of a user's technical proficiency. (This was a feature heavily emphasized by the client.) Furthermore, we also aimed for a visually attractive and non-intimidating interface to invite the users in to report their metrics. We understood that the array of service areas within DHHS would mean that the technical capabilities of the administrators and directors varies, so we also had a strong focus on customizing the interface to each user's needs and preferences.

## **The Process**

We established a concrete schedule early in the semester to accomplish each goal. From prior academic knowledge and course experience with user-centered design, we believed that the product design life cycle would be an ideal model to abide by throughout the development of the interface.

The first stage was analysis. To understand the UX problem, we worked with Noune learn who would be using this application and how they intend to use it. That is, what are the application's goals and what problems exist currently? By communicating with Noune numerous times through different platforms, but most importantly a detailed Skype chat which we relied on heavily throughout the design process, we started to draw boundaries for what we needed to accomplish, and then through many group meetings and deliberations, we worked creatively within those boundaries.

The second stage was design. Often simultaneously with brainstorming sessions, we had design sessions. Early sketches staged a lot of the ideas for future work. The early sketches highlighted various problems we hadn't thought about, allowing us to come up with intuitive solutions to those problems. Simple storyboarding also helped to define the context of our application. Although the storyboarding results didn't translate directly to the design, the exercises put us in the right mindset to see the problem through the users' eyes.

The third stage was prototyping. This is where we took our earlier design ideas and implemented them into an interactive interface. We considered a few wireframing/prototyping applications to facilitate this implementation, and after some deliberation, we settled on Marvel. Other design applications, such as Sketch, came with a hefty price tag or were otherwise unwieldy for our use. Using Marvel for the design process was an iterative one as UX design often is. We learned, we discussed, and we re-implemented when we discovered a better approach.

## **Limitations**

There were some roadblocks and limitations during this project. Ideally a UX design cycle would include a testing phase, after which we could take in the new information and apply the changes deemed fit. However, deadline constraints and a lack of user-participants, meant testing didn't fit into our design process. Instead, as designers, the team made changes while interacting with the interface as the design was being implemented. This alternative approach wasn't ideal, but still proved fruitful.

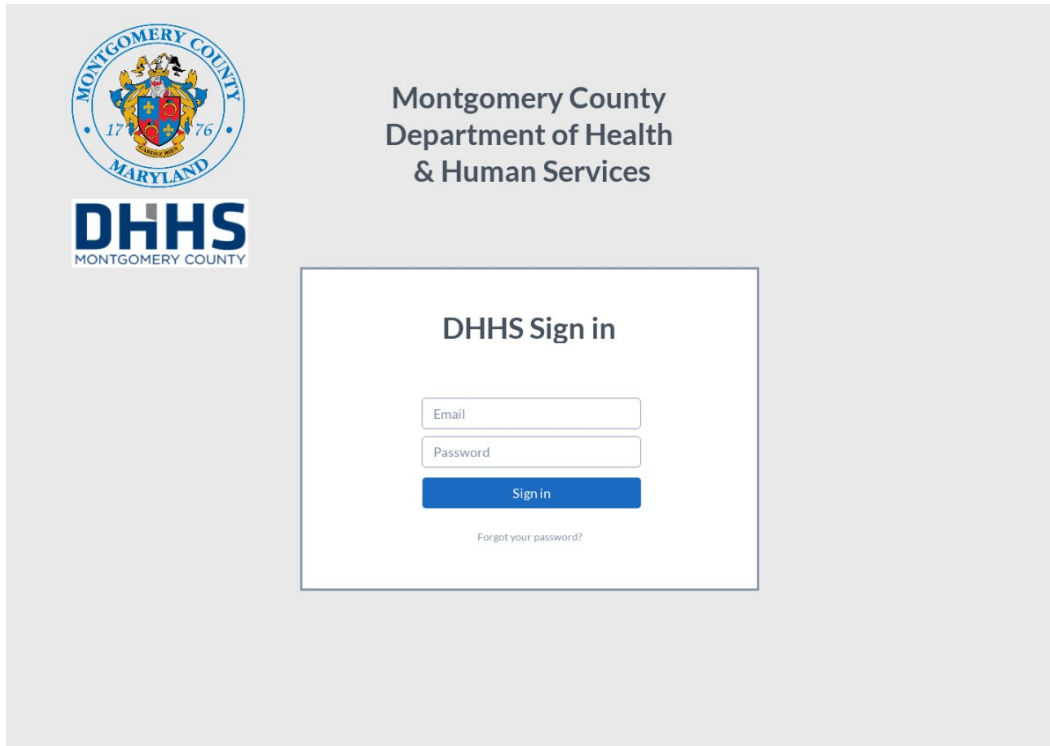
The other roadblock was that, due to time and scheduling conflicts, we never conducted a field visit. Even though data is sent in from different sites (which we couldn't see that in a single field visit), field study might have provided some additional, valuable information.

Nonetheless, as an alternative design process, collective brainstorming and storyboarding

allowed us to picture ourselves in the users' positions.

## Deliverables

For this project, deliverables are a set of wireframes and an interactive demonstration of the intended design of the DHHS website.



When DHHS users visit the site, they will be greeted with a login page that requires email/login and password to access their system. The 'create new account' function prevents unauthorized users from manipulating any data. If the user forgets their login/password, they can click "Forgot my password..." to retrieve their login information.

The homepages of regular staff and administrators are different. Below are the homepages for Rob Smith (staff) and Liz Johnson (administrator). Rob's interface is limited so he can only input the metrics for his designated department. Rob and other staff members will be directed to a page resembling an Excel sheet where he can input metrics for three given categories: number of patients, number of encounters, and the year-to-date number of patients. Each cell is categorized by month.

< 2018 >

Number of encounters for the month												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Number of p	4,621	4,233	4,618	4,595								
Number of e	5,424	4,973	5,414	5,367	3,564							
YTD patient	15,088	16,576	15,281	19,680								

Yellow highlighted cells will indicate to the staff member there is a note regarding that metric. Once a yellow cell is clicked, the comments recorded will appear in the bottom left corner shown below. Because the page auto-saves, there is no need for the user to click a save button. The user can log out any time after their metrics or comments have been entered.

< 2018 >

Number of encounters for the month												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Number of p	4,621	4,233	4,618	4,595								
Number of e	5,424	4,973	5,414	5,367	3,564							
YTD patient	15,088	16,576	15,281	19,680								

Add Comment Here: Decline in number of encounters in May decreased due to ...



These screenshots provide a brief overview of our work. A more comprehensive look at the wireframes can be found in the interactive demonstration below. These wireframes and the interactive demonstration meet the project goals by creating a foundation for the DHHS website.

We wanted to lay the groundwork for creating an interface that allows DHHS administrators and staff members to input metric data intuitively and efficiently. Transitioning to an online system from a paper system is a challenge, but we hoped to create a solid baseline model that envisions what the DHHS website can eventually become.

With so many different clients and reports, it is difficult to gauge how each employee would use the webpage, but we hope that this system can be easily translated to any kind of application. The next steps to migrate these wireframes to a website would be to begin software development. This could be done by future capstone students, students in the master's program, or any team up for the task. They would be in charge of creating the HTML, CSS, PHP, and Javascript, and SQL involved in bringing our design to life. While there may be many tweaks going from wireframes to a live website, we hope that our designs can inspire future developers to make a website that is a simple, intuitive system and promotes productivity across DHHS. We are confident this interface will help DHHS staff organize and maintain their metrics without requiring much technical skill. Digitizing their materials will eliminate the hassle of searching through numerous paper reports, or worse, losing them.

As we hand off our wireframes to MIM students, it's important for them to verify and receive feedback directly from our client. We still have unanswered questions about the walkthrough of our wireframes and whether they accurately reflect what the staff and administrators' goals, including "will users be assigned their specific login, or will they be able to create a new account with a company password," "should staff be given more power to edit and contribute to other sections of their page," "is Nouna satisfied with the current capabilities of her admin login," and "how can report visualization be improved." For MIM students to move forward, they will need to answer these questions and more.

This report includes a walkthrough guiding users through the interface, but the goal is a self-explanatory system. The final wireframes for staff and administrative users are linked below.

Staff Interface Wireframes (Rob Smith): <https://marvelapp.com/2i130ia/screen/42000611>

Administrator Interface (Liz Johnson): <https://marvelapp.com/2i130ia/screen/42440300>

If County staff or MIM students have any questions, they can reach us at the following emails:

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