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Interaction Design

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Milestone 1: An Intuitive EMR for the 21st Century

Background and Target Users

The origins of Electronic Health Records (EHRs) can be traced back to the development of Problem-Oriented Medical Records (POMRs) by Dr. Lawrence Weed in 1968. Over the decades, the rapid evolution of both medicine and technology rendered some facets of Wood's POMRs obsolete, and new types of EHRs arose to address the need for more dynamic software, particularly ones capable of managing a large number of diverse patients at a time. Despite several decades of innovation, many 21st century healthcare professionals have criticized modern EHRs for their inefficiency and unintuitiveness (Morrison). Our project seeks to solve the following common design-related issues with modern EMRs: busy displays which causes some users to feel "overloaded" with information, difficult-to-navigate layouts, and a lack of customizability for specific hospitals and clinics (Gawande, Tscholl). We hope that by making the interfaces that healthcare workers interact with on a daily basis more efficient to use, we can decrease the amount of time that our users spend on their computer, which could potentially lead to decreased rates of depression among clinicians (Imison).

Our project is an inward-facing system, and thus the target users are clinicians and other healthcare workers. At this time, we will not be implementing a patient portal, but the functionality of our application could potentially be extended to involve patients in the future. Our EHR is being designed with small clinics in mind, particularly those that serve

underrepresented communities, because these clinics tend not to be able to afford or effectively use expensive, large-scale EHRs like Epic. However, our potential users encompass clinics and hospitals of all sizes. While our system is designed for healthcare facilities with a small to moderate number of regular patients, it is our goal to integrate easy-to-use features which could be repurposed in EHRs of different scales.

Our users are seeking a platform that allows them to easily and efficiently access and track patient data. Therefore, when using our platform, users should be able to query, modify, and add to patient information. This information will include name and contact info, medication, notes, and appointments. We are keeping these ideas in mind as we design our system and will ensure to include the functionality of tracking and updating patient information. Our system will have a well designed backend as well as an intuitive and efficient frontend. We will emphasize efficiency and ease of use, especially when it comes to looking up a user. Our platform will come equipped with a space for practitioners to add notes about their patients and will allow users to adjust font size.

Task Analysis

Our system will be a web application, and users are therefore likely to use a desktop or laptop. Our web application is not intended for mobile use. We anticipate that the EHR we build will also be used in private areas because our users will be dealing with sensitive, private information in regards to patient data. Therefore, we will be adding security measures so that patient data is protected from the public eye. Currently, our web application is intended for communities in the United States due to the language barrier. Our ideal communities are low income areas where clinics do not have the income to purchase expensive software to manage records and perhaps even currently manage their records by hand. Using our software will

ideally enable them to manage the records of a greater number of people and allow them to help more people living in these low-income areas.

Hierarchical Task Analysis:

1. Log In
    a. Enter Username
    b. Enter Password
    c. Click to Log In
2. Look up Patient
    a. Type in patient name
    b. Select on correct patient
3. View Information
    a. Find desired type of information (symptoms, diagnosis, medications, appointments etc.)
4. Enter Information
    a. Select desired field
    b. Enter/Update information
    c. Save changes

In addition to the features previously described for our MVP, a long term goal for this project is to incorporate support for multiple languages, which will allow our product to better serve our diverse user-base.

Differentiation from Other Products

Our product will be created specifically for doctors and clinicians as opposed to administrative staff. It will be easier to use than existing software which currently is not very

intuitive and inefficient. The interface design will be much more user friendly. Unlike existing systems, We also want to make it customizable towards a particular hospital or clinics' needs so that the users do not have an overload of information they do not want.

Works Cited

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