The Price is Your Right: A Design Challenge

Design Brief

Please address all the following questions. Each response should not exceed 250 words.

I. Description of your team's objective.

1. Who is your target audience (e.g. age, gender, individuals with specific conditions) and why did you choose this group?

   Our initial target audience is healthcare consumers searching for radiological services; however, the model for the mobile app can easily expand to other healthcare services. Often, radiological services are shoppable services, meaning that they are expenses that consumers can plan for and schedule in advance, allowing them to shop and compare costs and quality at different facilities before receiving care. To achieve healthcare value, lower cost and higher quality care must work in tandem. Given the current industry limitations with sourcing timely quality data for several facility types (hospitals, primary care, urgent care, etc.), our team chose to focus on procedures that can be routinely performed at hospitals, allowing healthcare quality data from third-party sources to be incorporated.

   Our mobile app, CarePricePoints simplifies the decision process and points users to a recommended facility. Depending on the radiological service a user needs, the selection algorithm factors in user's preferences for cost, quality, distance, and insurance company, and generates a recommendation on where to receive care.

2. Are you designing a mobile app or website and why?

   We are designing a mobile app rather than a website to allow users to more easily access the facility search in any location: a doctor's office, while commuting, at work, or at home. CarePricePoints incorporates an optional feature to allow users to interface with the app via voice-enabled technology, such as Alexa. Upon using the voice-enabled features, a notification would pop-up on the user's phone, allowing them to open the app for additional information about the recommended facility.

3. In what situations do you think this mobile app or website would come in handy?

   The app will be particularly helpful during or after a doctor visit in which a radiological service has been ordered and a patient needs to schedule a service.

II. Description of mobile app or website.

1. What information would a user need to input (if any) to retrieve the data that is of most interest to them?

   Upon initial install, and subsequently in the mobile app settings, a user has the option to input the following parameters:
   - User Address

- Distance Preference (maximum number of miles to travel to a facility)
- Insurance Company
- Insurance Plan Type

By default, the app utilizes a preset algorithm to determine recommended facilities; however, the order of importance for these parameters can be customized in the settings.

After the initial install is complete, when a user opens the app to find a recommended facility, before receiving results, they would need to:

- Tap the area of the body they need care.
- Select the type of radiological service needed.
- Tap the map marker for the facility they are interested in.
  - If additional information is desired, users can tap the facility's name to view a profile page containing all the information for the facility.

2. What pieces of information does your mobile app or website provide to help the user decide where/when/to whom to go for care? (e.g. cost per procedure, plus ability to filter data by healthcare provider, insurance provider, plan type, location, consumer ratings, accessibility, quality ratings)

   CarePricePoints utilizes an algorithm to determine healthcare value and recommends a facility to receive radiological services at. After a user selects an area of the body and type of service needed, facilities are shown on a map; the top three are highlighted. The facility with the highest healthcare value, as deemed by the algorithm, is recommended. A user can click on the map marker for the facility's name, distance from the user's address, overall quality of care, cost of the service, a phone link to schedule an appointment, and a link to get directions.

   If a user clicks on the facility's name, they will go to a profile page that recaps the previous information and displays the facility website, the selected insurance company and plan type, average total costs for all procedures at the facility, and the facility's healthcare value for other services offered (an assessment on whether those services are lower cost and higher quality care than at other facilities). A link to Quality of Care can be tapped to view ratings for specific measures of quality: Patient-centered care, effective care, timely care and safe care.

   The default weighting ranks facilities based on the least expensive cost of a procedure within 10 miles of a user's address. Additionally, facilities with quality data are weighted higher if they performed better than other facilities with quality data. By default, only facilities with available cost information for the user's insurance company will be displayed (uninsured is also an option).

   a. List out the data fields that you'd pull in from the MA or NH cost datasets
      i. The following data fields would be pulled from the NH cost dataset: Procedure Code, Procedure Name, Median Allowed Amount, Payer, Plan Type, Provider Name, Address, City, State, Zip, Website.
   b. List out the data elements that you'd pull in from other data sources. What are some existing sources that you could retrieve this data from?

         i.   Quality data for patient-centered, timely, effective, and safe care would be sourced from:
1. The Centers for Medicare & Medicaid Services
2. Centers for Disease Control and Prevention, National Healthcare Safety Network
3. The Joint Commission

3. How does this data enable users to be better healthcare consumers?

The data enables users to be better healthcare consumers by showcasing that not all care is of the same quality and that higher costs may not mean higher quality. The calculated algorithm to determine healthcare value and recommend facilities helps alleviate the complexity of information that consumers typically need to sort through to reach a decision about where to receive care. The app also provides the ability for users to drill down for more information to use when making their decision, including ratings for quality measures.

4. Why do you think your design would appeal to your target audience?

The design takes the users' preferences into account and utilizes the respective information to recommend facilities. After the initial set-up, only three taps on a user's mobile device stand between them and information on a recommended facility: facility name, distance from user's location, quality of care, average cost for the selected procedure, phone number to schedule an appointment, and get directions. Furthermore, if the user is interested in more information about the facility, they can tap on the facility's name from the map view and be taken to the facility's profile page.

For several reasons, most healthcare transparency websites focus their data displays on the comparison of facilities, which puts the work back on the consumer to sift through the information to make decisions. Using a composite algorithm helps to simplify the interaction and point users towards a smaller subset of facilities with low cost, high quality care that also accounts for their location preferences and insurance company.

5. How would you make the language and design accessible to people with different levels of health and numerical literacy?

In our design, we limit cognitive burden by allowing users to drill-down into the level of detail they're most interested in. The user experience incorporates a graphic of the human body and icons to limit the amount of text on a screen and increase usability and understandability. Color is not the only design element used to communicate recommended facilities; the app uses text within icons to make the information accessible to individuals that are color blind. The app also utilizes voice-enabled technology and provides additional opportunities for people to interact with the available information.

III. Description of what's needed to bring your design to life.

1. How would you keep the information in your mobile app or website up-to-date?

Our recommendation is to update the underlying cost and quality data within the mobile app twice per year. Costs between facilities and insurers are negotiated annually; however, the negotiation periods occur during different time periods. A semi-annual update helps ensure the app is displaying the most current information.

2. What are the challenges of providing this information via a mobile app or website? What are some limitations associated with using your selected platform to deliver this information?

One challenge is that the concept of healthcare value is still relatively new. The design behind the app guides users in the direction of building an expectation for having information on the quality of care alongside information on cost. In sectors other than healthcare, this connection has been made over time and the transition of 'value' to healthcare services may be less of a challenge than expected.

Another challenge is that communicating this information via a mobile app requires consumers to first learn about the app and second to download it before use.

IV. Description of your marketing strategy.

1. How would you promote your mobile app or website? Discuss some strategies that may be well-suited to your target audience. Please cite sources where appropriate.

Since the mobile app concept supports rather than competes with information provided by health insurance companies, employers, doctors and facilities, we would partner with them to promote the app. The following materials would be deployed to support traffic to the app store where the mobile app could be downloaded: Graphics to embed on websites to show support and drive awareness of the app, flyers in waiting rooms, newsletter text, and social media content. Social media ads would also be produced and publicized. Additionally, since voice-enabled technology is a component of the app, ads on podcasts and audio streaming services can also be explored.