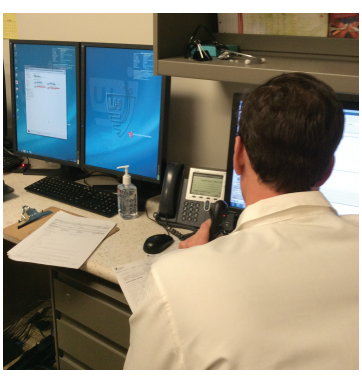
dbMotion Patient View Case Study

Redesigning a Full Patient Picture

Vision Workshop

Client Shadowing



THE GOAL

As part of the technology uplift for dbMotion's Clinical Viewer and Clinical Viewer Agent applications the team also wanted to improve the user interface experience. They partnered with the Allscripts User Experience (UX) team to better understand and support their users' needs, wants, and pain points. Here is our journey...

THE BEGINNING

The full team got together for a workshop to understand the current state of the products and discuss the vision for the future. From there we gathered our internal research questions and prepared for client site visits. We visited 3 client sites and observed real-time usage of the dbMotion products and interviewed multiple end-users. We wanted to explore the following:

- Who are our users? What are their frustrations? What does success look like?
- How is the product used and in what scenarios is it most/least helpful?
- How can the product better support our end-users?

At the conclusion of the site visits we compiled our findings and discovered 2 major user types:

- **Hunter/gatherer** – look for specific information within the system and leaves once it is found
- **Explorer** – seek more information about the patient to get a fuller clinical picture. Generally use the document's domain to guide their search

One of the major learnings and guiding design principles from our research was that dbMotion is a supplemental tool and must be designed in a way that makes it a "helper" for our clients and supports getting them important clinical information in the most direct way possible.

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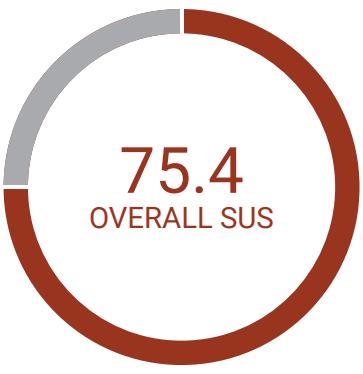
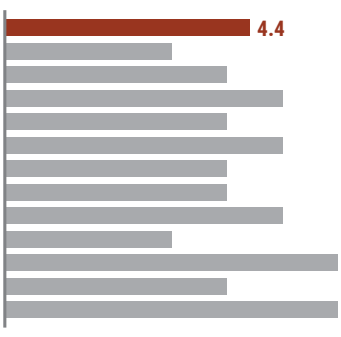
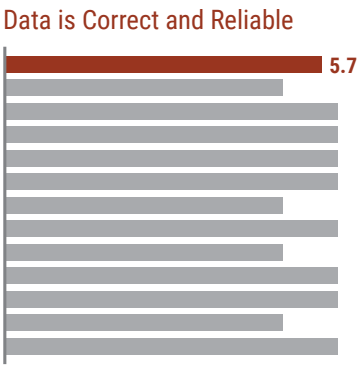


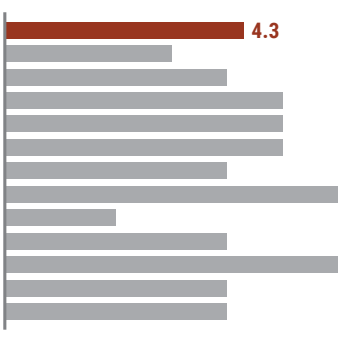
Terminology Easy to Understand



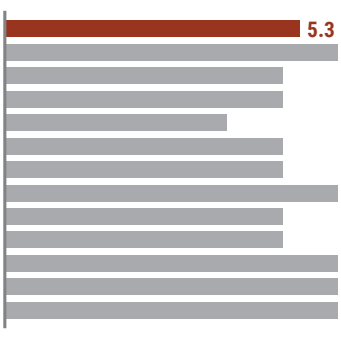
Data is Correct and Reliable



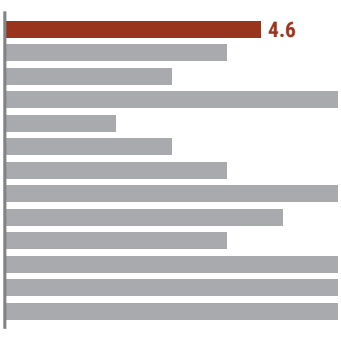
Understood Icon Meanings



Liked Using Application



Patient In Context Was Apparent



DESIGN PRINCIPLES

Ensure the new product design is intuitive and accessible by following good design practices like:

- Use redundant visual cues to highlight abnormal clinical data
- Allow the user to adjust the font size for better readability without loss of content or functionality
- Support the Web Content Accessibility Guidelines for minimum contrast ratio (4.5:1)
- Use a responsive layout so content displays equally well from desktop monitors to mobile devices and still leverages the same code base

Support the Allscripts "helper" philosophy in the following ways:

- Minimize user interactions. Show the most important content per domain (Problems, Allergies, Labs, Medications, Documents, etc.) and allow "1-click away" details that the user can access only if they need to dig deeper into the data.
- Allow the user to set custom filters so they view only the clinical data they are interested in seeing. This is especially important to support our Hunter/Gather users who look for very specific pieces of data and then exit the application.
- Give multiple ways to group and view the data. For example, allow the user to see the data based on when it happened (time-based) regardless of the clinical category to which it belongs.

DESIGN VALIDATION

After considering our user types, needs, design, and technical guidelines we worked as a team to create a simple interaction pattern that would allow users to quickly scan, find, review, and delve into clinical data for a patient. After creating initial concepts it was time to share those with our end-users. We conducted a formative usability study to evaluate our designs.

- 12 clinical end-users from 4 different client sites participated in the usability study
- Participants completed 3 scenarios with tasks centered around:
  - Navigation
  - Identifying the patient and specific clinical data
  - Icon functionality
  - Sorting and filtering data
  - Printing
- After each session a System Usability Scale (SUS) among other survey questions was collected from the participant

Results of note from the study were the following:

- 75.4 was the average SUS score for the study. A score of 68 is the baseline for a usable system.
- With an average score of 5.7 out of 6.0, all participants felt data in the application would be correct and reliable
- All participants felt that they would like using the new application, with an average score of 5.3 out of 6.0
- Several participants commented that the interface seemed easy to learn
- The overall navigation paradigm tested well and matched with how users expected to be able to access data within the system

Based on the test results several minor design updates were implemented to make the interface more meaningful and one feature was scaled back because it was too complex for the user's current needs.

FUTURE STEPS

Over the course of developing the new dbMotion application, the team has spent countless hours designing, validating, and updating to fine-tune the interface. Development for Phase 1 is close to completion and we are now actively planning a Summative Usability Test to further evaluate and refine our application. This test will coincide with the 20.1 CU2 product release and this case study will be updated with the results and action items.