

Design and evaluate a Power BI Community Rehabilitation dashboard that integrates proven UX frameworks to boost decision speed, reduce cognitive load, and ensure equitable access.

Problem Context

Community rehab services face fragmented data, variable performance, and limited digital visibility.

Methodological Approach

Double Diamond methodology to balance user-centred design and data-driven engineering. Embedded Think-Aloud, SUS surveys, and accessibility testing throughout development.

Dashboard Features

Five-view structure: Summary, Referrals, Assessments, Interventions, Discharges, Traffic-light KPIs, hover tooltips, and refresh metadata.

Outcomes & Implications

Improved usability scores and stakeholder confidence in decision-making, Scalable template for other NHS service areas, Highlights equity, accessibility, and technical integration as critical success factors.

Objectives

Investigate Usability Principles

Review existing literature on usability to guide dashboard design.

Develop a User-Centred Dashboard

Implement best practices in UX to create an intuitive interface tailored to healthcare professionals.

Assess User Experience

Conduct usability testing and feedback analysis to measure efficiency, satisfaction, and ease of use.

Identify Challenges and Solutions

Explore common usability barriers and recommend improvements for optimal data accessibility.

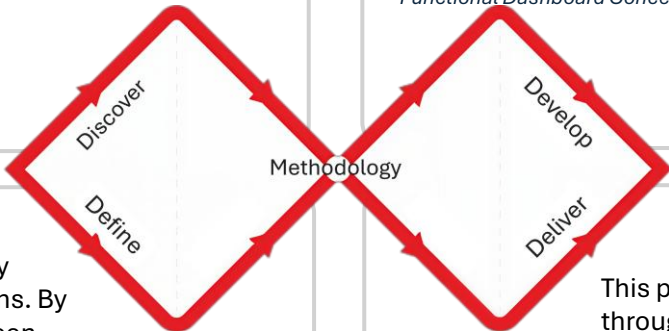
Evaluate Impact on Decision-Making

Assess how the dashboard facilitates informed decisions by enhancing data comprehension.

Discover

The User Needs Analysis turns raw research data into a clear picture of what users truly require. It moves from gathering observations to defining, ranking, and reframing needs so the design targets exactly which problems to solve and in what order.

- Cluster qualitative insights into thematic groups to spot common patterns.
- Craft concise statements that summarise user goals and pain points.
- Analysis to rank needs by urgency, feasibility, and impact.
- Highlight workflow gaps and frustrations that the design must address.
- Convert prioritised needs into questions that guide ideation.



Develop

The Develop phase transforms conceptual wireframes into functional dashboard components using real data, coded measures, and design system refinements. It brings user needs to life through iterative prototyping, with technical integration and usability at the forefront.



Functional Dashboard Concept

Data Scripting & Integration

Relationship entities created to link patient demographics and activity data to enable measures.

DAX Measure Engineering

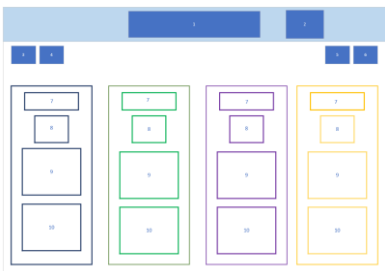
Calculate KPIs, trends, and colour/icon feedback for cognitive clarity and fast comprehension

Wireframe Translation into Prototypes

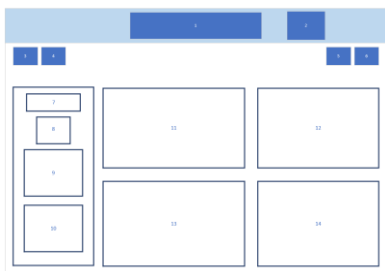
Top-level KPIs arranged using F-shaped layout for optimal scanning and colour themes and spatial layouts kept consistent to reduce cognitive load

Define

This step converts quantified survey insights into low-fidelity blueprints that guide layout, navigation, and core interactions. By mapping what users prioritised in the survey to tangible screen structures, ensuring early designs align with real needs and set the stage for detailed prototyping.



Wireframe – Summary Page



Wireframe – Supplementary Pages

Deliver

This phase focuses on validating the dashboard's performance through user testing and refining it based on feedback. It ensures the final product meets usability, accessibility, and operational goals before deployment.



Eye-Tracking Think Aloud Session

Usability Testing

SUS Survey, Think-aloud session

Feedback Integration

Usability Issues, User sentiment and confidence, improve clarity, flow, and accessibility

Accessibility Finalisation

WCAG Compliance, CVD Testing

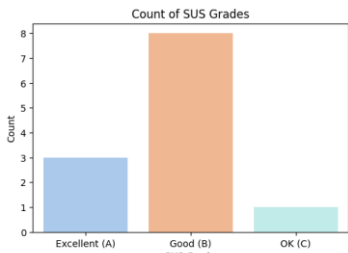
Deployment Preparation

Version Control, performance monitoring, governance checks

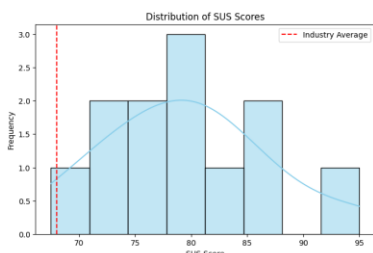
Conclusion and Reflection

The dashboard development marked a significant success in terms of usability, accessibility, and methodological rigour. A SUS score of 79.6 surpassed the industry benchmark, confirming the interface's clarity and intuitive flow. Through the integration of frameworks such as Nielsen's heuristics, Shneiderman's rules, Cognitive Load Theory, and Morville's UX Honeycomb, the design aligned closely with clinical stakeholders' needs. Evaluation methods including Think-Aloud testing, eye tracking, and WCAG audits, validated both functionality and inclusivity. Iterative refinement via Double Diamond enhanced stakeholder engagement while real-time feedback mechanisms addressed key equity and communication goals.

Reflecting on this project, I found it immensely rewarding to translate theory into practical tools that directly support NHS decision-making. Working closely with clinicians sharpened my empathy and reaffirmed the importance of inclusive design. Technical challenges were demanding, but they expanded my development fluency and confidence. I recognised that earlier usability testing and tighter training integration would have improved late-stage efficiency. Most importantly, the process deepened my appreciation for ethical and accessibility, confirming that a dashboard is not just a data tool, but a bridge to equitable care.



Bar Chart – SUS Scores



Histogram – SUS Scores