

BREAKTHROUGH 6 · FOUNDING PRODUCT DESIGNER

Impact TMS Clinical Dashboard

MRI-guided neuronavigation, protocol selection, outcomes tracking, and research data – unified into a single clinical workflow.

THE PROBLEM

A Fragmented Clinical Workflow

Transcranial magnetic stimulation (TMS) is a non-invasive treatment for depression and a growing set of psychiatric and neurological conditions — but the workflow around it is unusually fragmented. Clinicians at the bedside navigate multiple disconnected systems simultaneously, at significant cognitive cost.

MRI Imaging Software

Separate imaging tools were required to identify cortical targets, forcing clinicians to context-switch away from the patient just to locate stimulation sites.

Paper Protocols & PDFs

Stimulation parameters — frequency, intensity, duration — lived in **paper documents or PDFs**, disconnected from the imaging and documentation workflow entirely.

Separate EHR or Spreadsheet

Outcomes documentation happened in a completely separate system, meaning data captured during sessions **rarely made it back** into clinical decision-making or research in any usable form.

High Cognitive Switching Cost

Every context switch between imaging, protocol, and documentation was a moment where **attention moved away from the patient** — a real risk in an active clinical session.

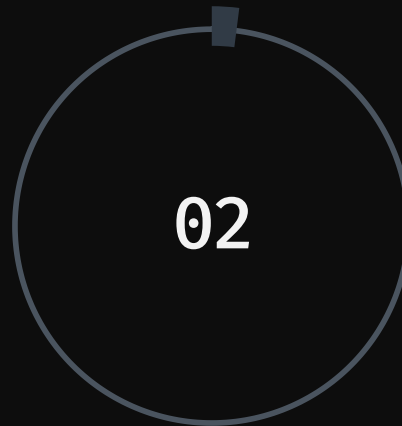
What Clinicians Actually Asked For

I began by shadowing TMS sessions across multiple clinical sites and interviewing clinicians and technicians. The dominant signal wasn't about features — it was about attention. Three core insights shaped the entire design direction.



Fewer Interruptions, Not More Features

Clinicians weren't asking for additional capabilities. They were asking to stop being pulled away from the patient. **Every context switch was a liability** — not just an inconvenience — in a live clinical environment.



The MRI as Spatial Anchor

The pattern surfaced quickly: the MRI viewer was the one thing clinicians always needed in view. **Every other action — protocol selection, parameter review, documentation — radiated outward from it.**



Documentation as Byproduct

Clinicians dreaded data entry during sessions. **Capture had to happen automatically** as a byproduct of clinical use — so no one felt like they were doing research data entry while managing a patient.

Three Priorities for the Dashboard

1

MRI Viewer as Orienting Layer

The MRI viewer functions as the persistent spatial anchor — cortical targets remain visible at all times, with protocol metadata attached directly to anatomical locations rather than living in a separate library tab.

2

Protocol Selection in Two Clicks

The protocol library was structured so selection happened from any anatomical target in two clicks, with frequency, intensity, and duration parameters surfaced inline rather than buried in a settings panel.

3

Glanceable Outcomes Mid-Session

The outcomes dashboard was designed to be readable mid-session, so clinicians could see a patient's trajectory across visits without leaving the active session view — **no navigation required**.

4

Research as Automatic Capture

Research data collection was separated into its own surface that pulled from the same underlying clinical data — so capture happened as a byproduct of clinical use, never burdening the clinician.

Layering, Not Replacing

The core design challenge was ensuring that each module augmented the clinician's existing mental model rather than demanding they abandon it. The dashboard needed to function as serious medical software while remaining operable by clinicians managing live patient sessions with no tolerance for dense or confusing interfaces.



Structural Decisions First

- **Persistent spatial anchor:** MRI viewer always visible, never obscured by other modules.
- **Protocol metadata co-located:** Parameters attached to anatomical targets, not a separate tab.
- **Module layering:** Each module overlays the MRI context rather than replacing the screen.
- **Implicit vs. explicit capture:** Partnered with clinical lead and engineering to define which data points were captured automatically versus explicitly tagged by the clinician.

Research Interface Separation

Researchers needed dense, queryable access to longitudinal data — but clinicians should never feel like they were doing research data entry during a clinical session. I separated the research interface into its own surface that pulled from the same underlying data, so **capture happened automatically as a byproduct of clinical use**. This required close partnership with the clinical lead and engineering team to define the data model precisely.

Four Modules, One Workflow

The dashboard unified four previously disconnected clinical tools into a single coherent system. Each module was designed to serve a specific role in the session workflow while sharing a common spatial and data foundation rooted in the MRI viewer.

1

MRI Viewer

The persistent spatial anchor of the entire dashboard. Cortical targets are always visible, and all protocol metadata is attached directly to anatomical locations — eliminating the need to navigate away during a live session.

2

Protocol Library

Structured for two-click selection from any anatomical target. Frequency, intensity, and duration parameters surface inline — never buried in a settings panel — keeping the clinician oriented to the patient at all times.

3

Outcomes Dashboard

Designed to be glanceable mid-session. Clinicians can review a patient's trajectory across visits — response trends, session history, key markers — without leaving or interrupting the active session view.

4

Research Module

A separate surface for researchers that pulls from the same underlying clinical data. Capture happens automatically as a byproduct of **clinical use** — so clinicians never feel like research data-entry workers during a session.

Outcomes & Clinical Pilot

Impact TMS was designed to consolidate a fragmented multi-system workflow into a single clinical environment. Early results from clinical pilot sites are being gathered. Key findings and data are pending confirmation — the metrics below represent the structural goals the system was designed to achieve.

 Outcome data — including adoption metrics, time-savings measurements, and clinician interview findings from pilot sites — is pending confirmation. This section will be updated with verified results.

01

Adoption / Pilot Usage

Pilot deployment data across clinical sites — including session volume and module engagement — is being gathered from early adopters.

02

Clinician Feedback

Qualitative findings from clinician interviews conducted at pilot sites are pending review and clearance for inclusion.

03

Workflow Time Reduction

Quantitative measurement of workflow step reduction and context-switch elimination compared to the pre-consolidation multi-system baseline.

What This Project Reinforced

Working on Impact TMS reinforced a conviction that the highest-leverage design decisions in clinical software are usually structural rather than visual. The choices made here weren't primarily about UI — they were about workflow architecture that shaped every screen downstream.

Structure Over Surface

The decision to make the MRI viewer the persistent spatial anchor wasn't a UI decision — it was a workflow decision that determined the architecture of every other module in the system.



Clinical Context Is Non-Negotiable

Shadowing live sessions revealed constraints that no brief or spec could have surfaced. The "fewer interruptions" insight only emerged from being in the room — it reshaped the entire design direction.

Implicit Capture as a Design Strategy

The research module's separation from the clinical interface solved two problems at once — freeing clinicians from data-entry burden while ensuring researchers received richer, more consistent longitudinal data.



Serious Software, Operable Interface

Medical-grade functionality and clinical usability are not in tension — but resolving that tension requires deliberate structural choices, not just visual polish or simplified UI patterns.