

HEURISTIC EVALUATION SUMMARY

Lumen Chart — EHR Clinical Documentation Redesign

Interactive Prototype (Clinician Flow) · Expert Heuristic Review · July 2026
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Method

Expert heuristic evaluation using Nielsen’s 10 Usability Heuristics (with 2020 refinements), Google PAIR Guidebook, Microsoft HAX Toolkit, WCAG 2.2 AA, NIST EHR usability guidance, and the project Evidence Wall design recommendations (D1–D5).

Scope: Dashboard → Snapshot → SOAP → Pre-sign · Date: July 10, 2026

1. Severity Summary

Findings were rated using Nielsen’s 0–4 severity scale.

Severity 0	Severity 1	Severity 2	Severity 3	Severity 4
Positive	Cosmetic	Minor	Major	Catastrophe
14 findings	3 findings	7 findings	4 findings	0 findings

No catastrophic (Severity 4) issues were found. The prototype is safe for pilot testing with clinicians. Fourteen Severity 0 (positive) findings were identified; the five strongest are highlighted below.

2. Top Positive Findings (Severity 0)

These five are the strongest examples of design decisions that directly address research insights and clinical workflow needs.

a. **AI transparency & trust calibration**

Amber AI provenance + per-section Accept gates + two-gate signing

Exemplary implementation of AI transparency that makes AI-generated content visually distinct, requires per-section clinician verification, and gates final sign-off. Directly addresses Evidence Wall recommendations D1–D5 on provenance, verification, and liability-aware review.

b. **Alert hierarchy at the point of care**

Queue-level critical alert surfacing with clear visual severity

Strong visual hierarchy for critical alerts reduces classic alert-fatigue risk by surfacing high-severity flags at the queue/row level rather than burying them inside the chart.

c. **Match between system and the real world**

Clinical language and guideline-sourced “Why?” tooltip

Interface copy and explanatory tooltips use clinical language and guideline-backed rationale, creating an excellent match to how clinicians actually think and work.

d. **Visibility of system status**

Real-time feedback: badge flips, toasts, and disabled Sign button

Immediate feedback communicates progress and blocking states clearly—what has been accepted, what remains, and when signing is not yet available—supporting safe completion of the flow.

e. **Flexibility and efficiency of use**

Simplified view toggle and Accept All accelerator

Supports both novice and expert paths: a simplified view for reduced cognitive load and an Accept All accelerator for experienced clinicians who still retain per-section control when needed.

Nine additional positive findings were also recorded (not detailed here), spanning navigation clarity, consistency of interaction patterns, and support for interrupted bedside workflows.

3. Highest-Priority Findings (Severity 3 · Major)

The following issues were rated Severity 3 (Major) and should be addressed before broader testing.

a. **Heuristic #3 · User Control & Freedom**

No Unaccept / Re-open control after a SOAP section is Accepted

Impact: Creates a false sense of completion and undermines trust for high-skepticism clinicians.

b. **Heuristic #5 · Error Prevention**

Pre-sign acknowledgments could be clicked through without reading

Impact: Weakens the two-gate safety model intended to prevent signing of unreviewed AI content.

c. **Heuristic #9 · Error Recovery**

Weak failure + retry path for “Writing to chart...” and gate failures

Impact: Users can become stuck with no clear recovery if a network or state error occurs.

d. **Heuristic #3 · User Control & Freedom**

No clear Cancel visit / Discard ambient draft path mid-flow

Impact: Clinicians have limited freedom if they decide the capture is unusable.

4. Priority Recommendations

High priority

- Add Unaccept / Re-open for review control on each SOAP section (and a global option).
- Strengthen the pre-sign gate so speed-clicking through checkboxes without reading is harder (micro-scroll, hold-to-confirm, or progressive disclosure).
- Add explicit failure + retry UI for the “Writing to chart...” state and any failed gate.

Medium priority

- Persist a Visit Context sticky (checked agenda + open SDOH + patient header) while in SOAP and Pre-sign.

Polish

- Show exact remaining sections (“2 of 4 still need Accept”) in the disabled Sign button or progress indicator.
- Add keyboard accelerators (Accept next, toggle transcript, jump to next unreviewed).
- Expose a lightweight “How this AI works / Trust model” drawer.

5. Evaluation Method (Brief)

This summary is based on a full expert heuristic evaluation using:

- Nielsen’s 10 Usability Heuristics (2020 refined explanations)
- Google PAIR Guidebook + Microsoft HAX Toolkit (AI-specific transparency, control, and trust)
- WCAG 2.2 AA (accessibility)
- NIST EHR usability guidance (clinical safety)

- Project Evidence Wall design recommendations (D1–D5)

6. Relationship to Moderated Usability Testing

This heuristic evaluation was conducted separately from one moderated think-aloud session on the same prototype. Complementary findings informed a single refinement pass. Only the updates that shipped in the live prototype are listed below.

From the moderated session

- Skippable first-load onboarding wizard that clarifies amber AI drafts, edit affordances, and per-section Accept with two-gate signing.

From heuristic review (shipped in the prototype)

- Unaccept / re-review control on SOAP sections
- Strengthened pre-sign gate: Sign stays locked until both acknowledgments are checked, with specific guidance when one is missing
- Persistent visit-context sticky across SOAP and Pre-sign
- Keyboard shortcuts, clearer aria-live announcements, and remaining-section feedback on the disabled Sign control

Full before/after detail is documented on the Lumen Chart case study site.