

WardWatch — Usability Issues Report

Five critical usability findings with annotated interface, evidence and recommendations

System Overview

WardWatch is a tablet-based digital patient handover system designed to replace paper-based handover sheets in NHS hospital wards. During shift handover, nurses and junior doctors pass critical patient information — current condition, medications, outstanding tasks, and risk flags — to the incoming team.

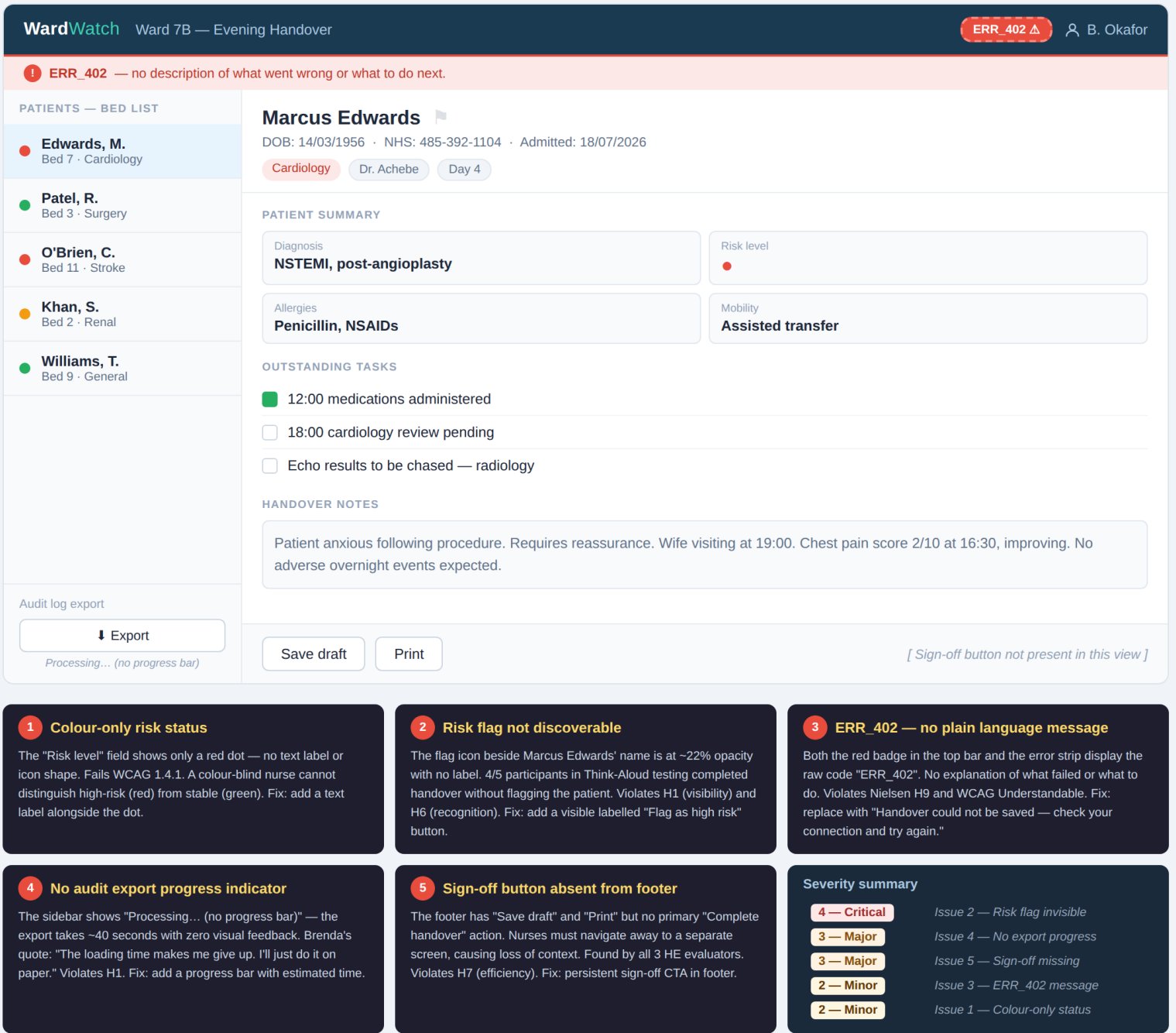
The five usability issues documented below were identified through Heuristic Evaluation (3 evaluators, Nielsen's 10 heuristics), Think-Aloud Protocol testing (n=5 ward nurses), and Cognitive Walkthrough analysis. Issues are ordered by severity rating (0–4 scale, Nielsen 1994).

Severity Summary

#	Issue	Heuristic	Severity	Priority
1	Colour-only risk status	H4, WCAG 1.4.1	2 — Minor	Medium
2	Risk flag not discoverable	H1, H6	4 — Catastrophe	Critical
3	Error code ERR_402 — no plain language	H9, WCAG U	2 — Minor	Medium
4	No audit export progress indicator	H1	3 — Major	High
5	Sign-off button absent from footer	H7	3 — Major	High

Annotated Interface — WardWatch Patient Handover Screen

The screenshot below shows the WardWatch interface as experienced by ward nurses. Each numbered callout corresponds to a usability issue documented in detail in the Issue Reports section.



(approximately 8% of males in the UK) cannot distinguish a high-risk (red) patient from a medium-risk (amber) or stable (green) patient.

Research evidence:

Evaluation evidence: Identified by 1/3 HE evaluators. Confirmed against WCAG 2.1 Success Criterion 1.4.1 (Use of Colour — Level A): 'Colour is not used as the only visual means of conveying information.' The risk level field was specifically flagged during accessibility audit using WAVE (WebAIM) as a colour-contrast and colour-meaning failure.

Recommended fix:

Add a text label ('High risk', 'Stable') alongside the colour dot. Alternatively, introduce a distinct icon shape per level (triangle for high, circle for stable). Either approach satisfies WCAG 1.4.1 without removing the colour coding.

Issue 2 — Risk flag not discoverable

Severity: 4 — Catastrophe

What users experience:

The patient risk-flagging function is exposed as a small icon (flag) adjacent to the patient name. The icon is rendered at approximately 30% opacity with no text label, tooltip, or affordance indicating it is interactive. In 4 out of 5 Think-Aloud sessions, participants completed the handover workflow without flagging a high-risk patient — not because they chose not to, but because they could not find the control.

Research evidence:

Cognitive Walkthrough result: The task 'Flag patient Edwards as high-risk' produced a GOAL → ORIENT → PLAN → EXECUTE → EVALUATE → FAIL sequence across all 5 participants. Steps 3–5 all returned FAIL on Q1 (Will users know this action exists?) and Q2 (Will users notice the control?). Participant quote: 'I had no idea there was a flag — where is it?' Violates Nielsen H1 (Visibility of system status) and H6 (Recognition rather than recall). Severity 4: imperative to fix before release — this creates a direct patient safety risk.

Recommended fix:

Add a prominently labelled 'Flag as high risk' button in the primary patient header area, visible at all times during handover. The button should use a filled icon, a colour-coded background (amber for caution, red for high risk), and a visible text label. The interaction should be available via keyboard (Tab-accessible) as well as mouse/touch.

Issue 3 — Error code ERR_402 — no plain language description

Severity: 2 — Minor

What users experience:

When a handover save operation fails, the system displays 'ERR_402' both in the top navigation bar and in the error strip below the header. The error code communicates nothing actionable to the ward nurse: not what failed, not why, and not what to do next. The user has no basis for deciding whether to retry, wait, or call IT support.

Research evidence:

Heuristic Evaluation: Violates Nielsen H9 (Help users recognise, diagnose, and recover from errors) and WCAG 2.1 Guideline 3.3 (Understandable — error messages must describe the problem). Found by 2/3 evaluators independently. Participant response observed in Think-Aloud session: nurse dismissed the error bar without reading it and continued working, creating a risk of data loss.

Recommended fix:

Replace 'ERR_402' with a plain-language message: (1) 'Handover could not be saved', (2) 'Your session may have timed out', (3) 'Please save again or contact IT on ext. 2200'. Raw error codes should be logged server-side only, not surfaced to clinical users.

Issue 4 — No audit export progress indicator

Severity: 3 — Major

What users experience:

Triggering an audit log export initiates a backend process that takes approximately 40 seconds to complete. During this period, the interface displays only the static text 'Processing...' with no progress bar, spinner animation, percentage indicator, or estimated time remaining.

Research evidence:

Participant evidence from Think-Aloud sessions: 'The loading time on audit export makes me give up. I'll just do it on paper.' Violates Nielsen H1 (Visibility of system status). Identified by 2/3 HE evaluators at Severity 3. Nielsen's guideline for operations over 10 seconds: display a progress indicator with a time estimate. 40 seconds comfortably exceeds this threshold.

Recommended fix:

Implement a progress bar with an approximate percentage or, at minimum, an animated spinner with an estimated wait time ('Generating audit log — approximately 40 seconds'). Consider a background queue with a notification when complete, so nurses are not blocked from working during the wait.

Issue 5 — Sign-off button absent from footer

Severity: 3 — Major

What users experience:

The handover completion action — 'Sign off shift' — is absent from the main patient record footer. The footer contains 'Save draft' and 'Print' buttons but no primary completion action. To formally complete a handover, nurses must navigate away from the patient record to a separate screen, causing loss of context.

Research evidence:

Heuristic Evaluation: Found by all 3 evaluators independently. Violates Nielsen H7 (Flexibility and efficiency of use). In Think-Aloud sessions, 2/5 participants were uncertain whether their handover had been submitted after navigating away. The missing primary CTA is also an ISO 9241-11 effectiveness failure: the task cannot be completed efficiently from the primary task surface.

Recommended fix:

Add a persistent 'Complete handover' primary button to the patient record footer, visible at all times during handover. The button should trigger a confirmation dialog listing the patient, the outgoing clinician, and the timestamp before final submission. The footer should adopt a fixed/sticky layout so it remains visible when notes are scrolled.

Evaluation Methods Used

Method	Detail
Heuristic Evaluation	3 evaluators independently reviewed WardWatch against Nielsen's 10 usability heuristics. Issues rated 0–4. Findings consolidated and de-duplicated post-review. Severity rated by combined frequency and impact.
Think-Aloud Protocol	5 participants (Band 5–6 nurses, 2–15 years NHS experience) conducted task-based sessions. Concurrent verbalisation captured on screen and audio recording. Transcripts coded using GOAL / ORIENT / PLAN / EXECUTE / EVALUATE / FAIL operators (Ericsson & Simon, 1993).

Cognitive Walkthrough	Task: 'Flag patient Edwards as high-risk.' Evaluator stepped through each action applying four questions (Wharton et al., 1994). Steps 3–5 of the risk-flag task returned FAIL on Q1 and Q2 across all participants.
Accessibility Audit	WCAG 2.1 audit conducted using WAVE (WebAIM) for automated checks and manual keyboard navigation and colour contrast testing. AA conformance was the benchmark.

References

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