



Closing the Loop: A Standardized End-to-End Digital Workflow for Reconciling ED Wet Read Discrepancies Across a Large Integrated Healthcare Network

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Briefly describe what attendees will see during your demo.

Attendees will see a brief presentation covering the background and clinical problem, followed by a walkthrough of the live workflow: the SafeSign interface where a radiologist marks a wet read as agree/disagree at sign-off, and how a disagreement routes automatically into Epic for Epic sites. We'll then demo the custom web-based dashboard built for non-Epic sites, showing how the callback team triages, resolves, and documents flagged cases. Finally, we'll show how AI SIGNIFICANT and AI DISCREPANCY features would be integrated into this workflow for triaging and identifying cases that may have been otherwise unidentified.

Problem & Motivation: What clinical or operational problem does your MVP address?

Emergency departments face a structural bottleneck: after-hours imaging volume routinely outpaces radiologist availability, so ED providers make real-time disposition and treatment decisions from their own preliminary "wet read" of a radiograph, hours before the radiologist's final interpretation. Studies have shown discrepancy rates between ED and radiologist reads to be up to 23%, leading to therapeutic errors, such as unwarranted antibiotics or diuretics for patients [1]. Legacy discrepancy workflows across our multi-hospital network operated in silos, with site-specific policies for identifying and reporting discrepancies, complicated by varying EMR systems across hospitals. Fragmented systems often required ED providers to manually reconcile all imaging performed overnight, cross-checking final radiology reports against initial wet reads by hand. This created significant operational friction, taxed already-limited clinical bandwidth, and led to inconsistent, incomplete reconciliation — leaving patients exposed to delayed or incorrect treatment and disposition decisions.

What You Built: Describe your MVP, tool, or workflow in plain language

We built a unified end-to-end digital workflow that integrates the discrepancy workflow from exam ordering and ED wet read documentation to radiologist final interpretation to discrepancy reconciliation. For radiologists, discrepancy documentation is captured via SafeSign, which now displays the ED wet read and prompts the radiologist to determine concordance prior to final signing the case. Agreement requires no further action; a disagreement triggers a dual-pathway routing process that automatically sends the discrepancy through Epic for Epic sites or a custom web-based centralized dashboard for all other non-Epic sites, with routing determined by patient location and disposition status. This asynchronous model reduces provider burden while creating an auditable record of the reconciliation process, so every wet read case and discordant finding is tracked to resolution. On top of this foundation, we built and validated two LLM prompts,

AI SIGNIFICANT and AI DISCREPANCY, as an automated secondary safety net for cases the human-flagged workflow structurally can't catch: no wet read was ever entered, or a real discrepancy went undocumented. AI SIGNIFICANT scans finalized report text for clinically significant findings when no wet read exists; AI DISCREPANCY independently re-analyzes cases with a wet read on file that the radiologist did not flag as discordant, acting as a secondary check for anything missed due to human, technical or interface issues. We validated both prompts against a 300-case ground-truth dataset, with two independent reviewers and a third adjudicating disagreements.

Tech Stack & Development Approach: What tools, frameworks, or methods did you use to build it?

The workflow is built on top of our existing radiology and EMR infrastructure: Epic (EMR), the RIS (radiology information system), worklist orchestrator, and PowerScribe (dictation/reporting software). Discrepancy documentation is captured through SafeSign, an AutoHotkey-based tool integrated into the PowerScribe sign-off step. Discrepancies route either natively through Epic in-basket messaging (Epic sites) or to a custom web-based dashboard we built for non-Epic sites. The AI SIGNIFICANT and AI DISCREPANCY safety-net checks are built using LLMs applied to finalized radiology report text.

Feedback You're Seeking: What specific feedback, help, or collaboration are you hoping to get from the CAIMI26 community?

We'd like to hear how other multi-site health systems handle this same discrepancy-reconciliation challenge, whether a system like this could be useful in their own environment, and where they see room for us to improve.

Known Limitations & Honest Failures: What isn't working yet, or what have you already tried that failed?

The core workflow depends on radiologists correctly clicking agree or disagree at sign-off — and we've observed that this can occasionally be marked incorrectly, which is precisely the gap AI DISCREPANCY was built to catch. We've also seen cases where an ED wet read simply isn't entered at all, whether due to downtime, high volume, or oversight, leaving no discrepancy check to occur — this is the gap AI SIGNIFICANT was built to address. Separately, while both prompts have completed validation against our ground-truth dataset, neither has yet been used clinically by our ED teams, so their real-world performance and impact on callback workload are still unproven outside of retrospective testing.

Potential for Impact: If this MVP were fully developed and deployed, who would benefit and how?

ED providers, radiologists, and patients each benefit from this closed-loop model. ED providers spend less time on manual reconciliation and phone-based follow-up, freeing that time for direct patient care. Radiologists gain a single, low-friction step to flag disagreement at the point of sign-off, without separate documentation or phone calls to close the loop. Patients benefit most directly, since a discrepancy caught and routed immediately, rather than sitting unresolved, means less delayed treatment, fewer missed findings, and more accurate clinical decisions. Across the health system, this translates to reduced operational strain and more consistent, dependable discrepancy resolution at every site, regardless of size or staffing.

ED IMAGING WORKFLOW - CURRENT STATE PRELIM DISCREPANCY

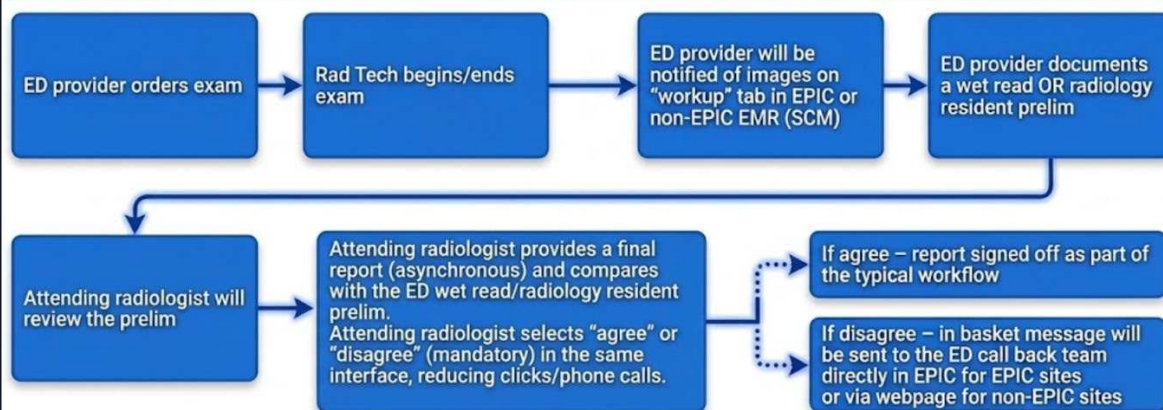


Figure 1: Current state flowchart illustrating ED imaging workflow from order placement through ED wet read/rad resident prelim to final interpretation, highlighting discrepancy identification points

The figure shows two screenshots of the SafeSign interface. The top screenshot displays the "ED Wet Read" section with a "No acute process Entered By" field showing "12/30/25 4:13 PM". Below this, there are radio buttons for "Agree" and "Disagree", with "Disagree" selected. A text field for "Discrepancy Comments (Optional)" is also present. The bottom screenshot displays the "Resident Prelim Entered by: Test, Resident. Please document if you agree or disagree with the preliminary report." section, with "Agree" selected. Both screenshots include buttons for "Close And Sign Report", "XR Tech Learning Opportunity", "Copy Report", "Activate PPC Moonlighting", and "Activate Hourly Moonlighting".

Figure 2: SafeSign interface screenshots showing the radiologist's real-time agree/disagree prompts for wet reads and preliminary reports

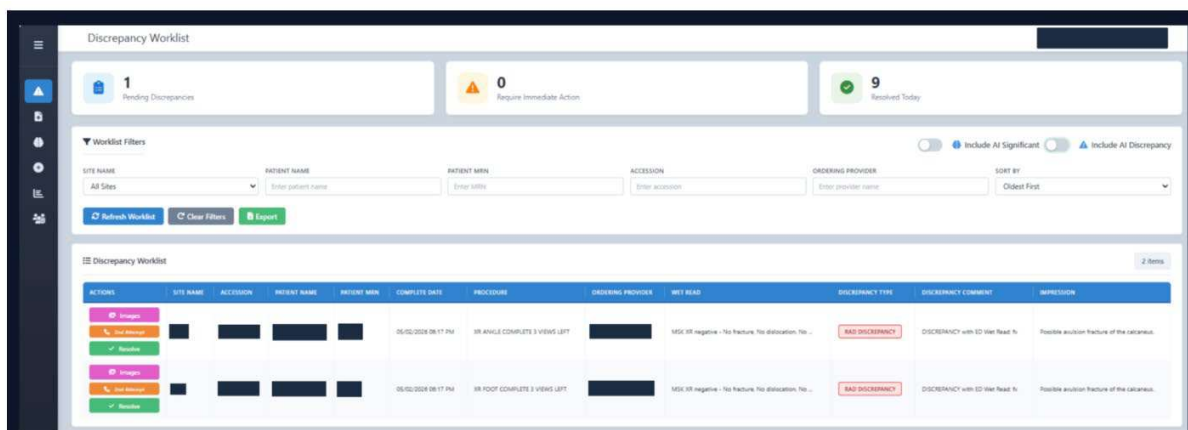


Figure 4a: Custom web-based discrepancy dashboard for non-Epic facilities, showing worklist features, filtering options, and contact attempt documentation

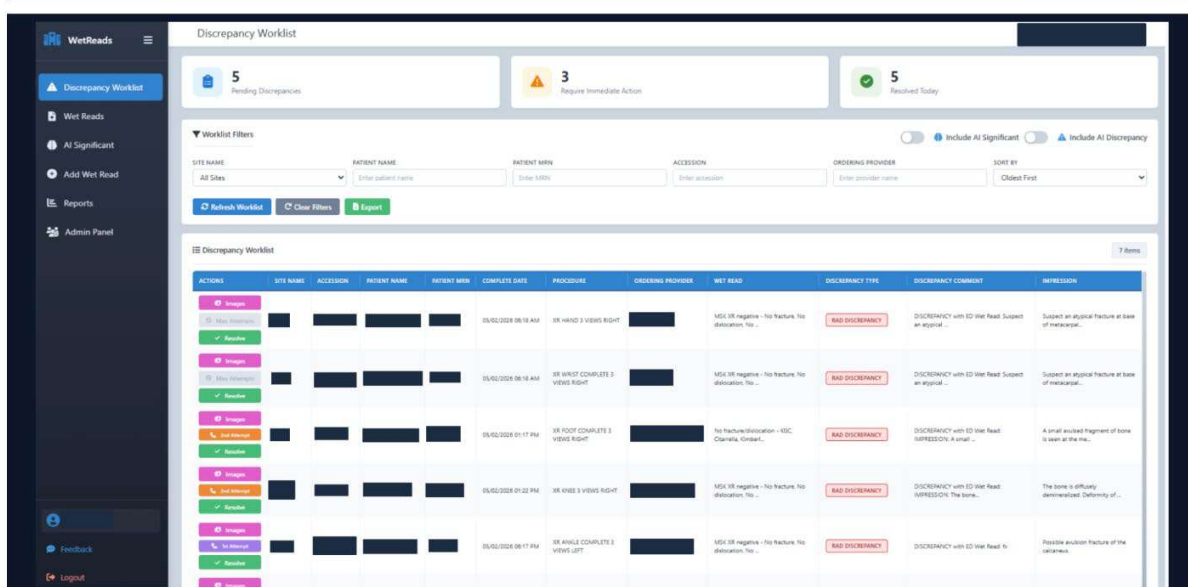


Figure 4b: Custom web-based discrepancy dashboard for non-Epic facilities, showing worklist features, filtering options, and contact attempt documentation

Figure 4d: Custom web-based discrepancy dashboard for non-Epic facilities, showing worklist features, filtering options, and contact attempt documentation