



Hybrid Intelligence Turns Clinical Documentation into a Strategic Asset

The Challenge

Data Doesn't Lie, But It Can Mislead

A hospital that partnered with Carta Healthcare for clinical data abstraction was struggling with persistent underperformance on a specific quality metric: **NCDR CathPCI Metric 4462, "Elective PCI with Stress Imaging."** This metric is complex, evaluating whether elective percutaneous coronary intervention (PCI) is supported by documented evidence of ischemia.

Despite consistent and timely data submission to the registry, the low compliance rate did not align with the hospital's otherwise strong performance on all other CathPCI measures. This suggested a critical gap between the clinical care being delivered and the data being documented and abstracted. The team realized that data capture alone was not translating into measurable quality improvement.



The Turning Point

Deconstructing the Metric

The Carta Healthcare team launched a project to investigate the source of this discrepancy: abstraction errors versus documentation gaps.

The team's project rationale was to approach the problem from the ground up by deconstructing Metric 4462 and evaluating every component.

1. **Data Extraction:** They began by generating a CathPCI Data Extract report for the 2024 calendar year, isolating 66 cases eligible for Metric 4462 analysis (Elective PCI procedures).
2. **Custom Framework:** A custom Excel spreadsheet was developed to serve as a **Metric Deconstruction Framework**. This tool incorporated logic-based formulas to track numerator criteria (e.g., positive stress imaging within 182 days) and exclusion criteria (e.g., staged procedures).



Project Outcome

The Hidden Truth in the Data

The structured review yielded immediate and profound results:

- **Initial Fallout Rate:** Of the 66 elective PCI cases reviewed, **22 cases (33%)** were initially flagged as metric fallouts.
- **Final Fallout Rate:** Following the structured review and correction, **15 cases were reclassified**. Only **7 cases** were confirmed to be true fallouts.
- **Result:** This demonstrated a **68% reduction** in the metric fallout rate.

The errors were primarily traced back to abstraction practices, including misclassification of test results and misinterpretation of registry definitions. However, clinician documentation also contributed, particularly when results, symptoms (like Worsening vs. New Onset Angina), or procedural intent were ambiguously recorded.

Take-Home Messages and Future Direction

The project's impact was threefold: the team made immediate corrections to the data, abstraction staff received focused education, and clinical teams gained crucial insights into how their documentation directly impacts quality metric performance.

The key takeaway is that structured metric analysis is essential, as it uncovers issues that simple dashboards cannot. This framework provides a solid starting point for future quality improvement efforts and reveals that integrating **AI assistive tools** can further optimize and scale this raw data review process. By building clear logic into the workflow, AI can be trained to help fill in data, spot issues, and provide reports, ultimately making quality improvement efforts more scalable and adaptive.