To Measure and Reduce Diagnostic Error, Start With the Data You Have

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As a patient safety problem, diagnostic error differs from wrong-site surgery or medication errors. While we have not yet eliminated these errors, we know that systems-safety interventions like checklists and time-outs make an impact. But in considering diagnostic errors—when we are often trying to get inside someone's head to determine why they did or didn't think a certain thing—it is a totally different proposition.

Moreover, at times, we lack clear distinctions between true diagnostic error and the natural progression of a disease. We know that diagnostic errors occur across specialties and patient populations, but surprisingly, we see that common conditions are often missed. Progress has been made over the past decade, as shown by Hardeep Singh, MD, MPH, during his recent presentation for the Healthcare Risk Advisors (HRA) Virtual Conference Series.

Dr. Hardeep Singh, MD, MPH, an expert in diagnostic safety for the VA Medical Center in Houston and a Professor of Medicine for Baylor College, says that healthcare is striding through the 2020s with its best

tools yet to continue improving. To improve diagnostic safety, he recommends focusing not just on individual performance, but also on the performance of the system where clinicians practice. For example, an organization must first measure its current rate of diagnostic error—which is easier said than done.

Use Accessible Data to Measure Diagnostic Error

For those planning to improve diagnostic safety in their own institutions, Dr. Singh suggests four potential sources of data:

1. *Use the data that are already available.* Adverse event reports, medical malpractice data, and patient complaints present learning opportunities.

2. *Solicit reports from clinicians about diagnostic errors and near misses.* Most reports come from nurses, pharmacists, and other allied health professionals. Many clinicians are reluctant to report. Find a way to invite their information that makes sense for your organization.

3. *Learn from patients.* At many institutions, patient complaints are being gathered but not being harvested for signals for improvement. Meanwhile, researchers hear patients say things like, "I kept telling them about this specific concern, but they didn't listen to me." Whether it is a case of misaligned expectations or actual diagnostic error, every patient complaint is an opportunity to learn. Open notes could also be leveraged for improvement opportunities.

4. *Make your EHR work for you.* Your EHR can help you identify patients with diagnostic concerns by flagging records selectively with e-triggers. For instance, you might view only records that fit a certain clinical profile versus all records. Two examples include: (a) a low-risk patient who is transferred to ICU or initiates a rapid response team within 15 days of admission, or (b) a patient who visits primary care, followed by an unplanned hospital admission

within 14 days. These scenarios invite us to ask if there was a missed red flag.

Address Ambiguous Responsibility With Clear Policies

In healthcare, and especially in any fragmented healthcare systems, the responsibility of who is doing what may not always be clear. Here is an example of ambiguous responsibility that Dr. Singh discussed: A primary care physician refers a patient to a pulmonologist. The pulmonologist orders a test that returns an abnormal finding. An EHR will alert both clinicians of that result, so who is responsible for follow-up? What Dr. Singh's team found is that each might think it's the other. To address ambiguous responsibility, all organizations should create, formalize, and promote a crystal-clear policy regarding who is responsible for follow-up of abnormal test results and in what time frame.

Close the Calibration Gap With Feedback

Calibration is the alignment between diagnostic accuracy and a physician's confidence in that accuracy. For a vignette study,[1] physicians were presented with sample cases, both relatively easy and hard to diagnose. Physicians were asked for their differential diagnoses and their confidence in their differential diagnoses. Before they rendered their final diagnosis for each case, physicians were asked if they had resource requests, such as wishing to consult a colleague, desk reference, or web-based tool. Dr. Singh and fellow researchers had hypothesized that when cases were more difficult, clinicians would seek more assistance, because they would be very uncertain—but that turned out not to be the case. For the easier-to-diagnose cases, physicians were right about 56 percent of the time, and fairly confident. But accuracy for the difficult cases was below 6 percent—with confidence almost unchanged.

That's the calibration gap—and it can be closed with feedback. Finding ways to close it will be crucial to our long-term efforts to improve diagnosis. At HRA, among other things, we are working with our emergency department (ED) collaborative on missed strokes. From a

small review of 43 HRA cardiovascular diagnostic cases, we saw that 20 of those patients returned to an ED after their first presentation. Of those, 10 presented at a *different* ED, so the clinicians they first saw probably did not know those outcomes.

Physicians, like all other professionals, need accurate and timely feedback to gauge performance. When patients simply go elsewhere, we lose valuable information.

Make a System-Wide Effort

Dr. Singh's findings align with our claims experience at HRA and The Doctors Company. Roughly 20 percent of claims involve diagnostic error, and what we learn from such claims has implications for patient safety in all areas of ambulatory, inpatient, and ED care. Examining our medical malpractice claims through the lens of the diagnostic process of care framework created by CRICO, the risk management arm of the Harvard medical institutions, we see that care most often diverges from an optimal outcome early on, with an incomplete history or with a cognitive bias like anchoring or premature closure.

To address these ongoing concerns, which affect clinicians and patients across the spectrum of care, we are engaging in a variety of efforts—from a new project looking at primary care, to partnering with national societies to improve diagnosis and prevent errors.

In envisioning healthcare's next decade, Dr. Singh sees many promising developments in diagnostic safety, but says we still have miles to go. As we implement new tools and best practices to foster learning and improvement, it's time to make diagnostic safety not just an individual priority, but also an organizational priority.

Choose a Resource

We have more tools than ever before to help us improve diagnostic safety. To begin implementing them, start with any of the valuable, open-source resources below.

- Agency for Healthcare Research and Quality (AHRQ): *Operational Measurement of Diagnostic Safety: State of the Science*

- Institute for Healthcare Improvement (IHI): *Closing the Loop: A Guide to Safer Ambulatory Referrals in the EHR Era*

- World Health Organization (WHO): *Diagnostic Errors: Technical Series on Safer Primary Care*

- WHO: *Global Patient Safety Action Plan 2021–2030: Towards Eliminating Avoidable Harm in Health Care*