ImproveDx

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Diagnostic Safety Improvement: Fast and Slow

By Susan Carr
Newsletter Editor

In the year since the Institute of Medicine (IOM; now renamed the National Academy of Medicine), published its sentinel report on improving diagnosis in healthcare,[1] a lot has happened. The Society to Improve Diagnosis in Medicine (SIDM) convened a coalition of stakeholders—medical societies, healthcare organizations, patient and consumer advocacy groups, licensing organizations, and government partners—to build a solid foundation of commitment and advocacy for future improvement. The Agency for Healthcare Research and Quality (AHRQ) has issued initial research grants in a new funding program focused on diagnostic safety.[2,3] And in September 2016, the Gordon and Betty Moore Foundation (https://www.moore.org) announced a large grant in support of SIDM's mission to bring attention, awareness and action to improve diagnosis and eliminate patient harm.

Publication of the IOM report, *Improving Diagnosis in Health Care,*[1] increased interest and activity, building momentum for change. At the same time, improving diagnosis requires patience and persistence. The work is complex and has no single endpoint. Having acknowledged there is no magic bullet for diagnostic safety, organizations and individuals are dedicated to accelerating awareness and working together for a sustained period to discover, evaluate, and implement the most effective improvement strategies.

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Coalition to Improve Diagnosis

As anticipation grew prior to the release of the IOM report at the Diagnostic Error in Medicine conference in September 2015, SIDM convened a new group, the Coalition to Improve Diagnosis (http://www.improvediagnosis.org/?page=CID). Starting with 18 founding members in August 2015, the coalition now includes 26 organizations and 2 government agencies. Organizational members have committed to lead their own efforts to improve diagnosis and participate in collective action led by the Coalition. Paul Epner, MBA, MEd, chair of the Coalition and executive vice president of SIDM, reports that the group's collective action will focus on three work streams: building awareness, identifying and disseminating tools, and advocating for increased research funding.

By mid-September 2016, small committees had developed preliminary plans for each program, including objectives, deliverables, and logistics, as well as timelines, budgets, and success metrics. The Coalition steering committee reviewed the proposed plans and gave its approval to proceed to implementation.

Building Awareness

The planning committee for raising awareness developed a proposal primarily focused

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on consumers, patients, family caregivers, and healthcare professionals who are not yet involved in diagnostic safety improvement. A secondary audience includes policymakers, educators, and health plans and other payers. The committee's recommendations involve using market research and public relations professionals to develop and execute a campaign designed to position diagnostic safety prominently among healthcare issues in need of action in the United States.

Identifying and Disseminating Tools

Tools that improve diagnostic performance and reduce harm caused by diagnostic error were the subject of a second planning committee. It recommended that the full committee design a survey for organizations and perform a literature search to identify and collect existing tools. The full committee will also develop a tool taxonomy and website for disseminating selected resources.

Advocating for Increased Research Funding

The third planning committee focused its work on the goal of increasing funds for research in diagnostic safety. Diagnosis plays a role in virtually all aspects of medicine but has received very little support or attention from research funders. David Newman-Toker, MD, PhD, serves on SIDM's Board of Directors and led the Coalition's planning committee on research. In conversation (September 2016), he pointed out that numerous groups have already identified topics in diagnosis that deserve study. The IOM report, for example, lists 43 separate topics as "potential areas of research."[1(p347–349)]

Newman-Toker noted the political challenges the subcommittee and research community face, with so many legitimate areas that need study:

> *If someone says we should focus on missed diagnoses that kill or maim, such as stroke, cancer, and sepsis, someone else will say, "How about the lab?" If we focus on the emergency department, some will say, "But what about the clinics?" Others will say, "Why don't we focus on processes like hand offs, closed-loop test reporting, and decision support?" And someone else will suggest educational standards and maintenance of certification for physicians. They all have valid points, and choosing among them would be like naming a favorite among your children—possible to do, but not necessarily a good idea.*

With so many topics in so many disciplines, all badly in need of more research, the committee decided not to battle over a "top 10" list of research subjects or priorities. Instead, they concentrated on planning to address critical barriers to research that are impeding progress in diagnostic safety across a broad range of problems. Their goal is to develop a roadmap of next steps. According to Newman-Toker, they identified three challenges that must be addressed before real progress can be achieved in any area of diagnosis:

- measuring the incidence of diagnostic error,
- identifying the major causes of diagnostic error (especially cognitive bias and knowledge gaps), and
- beginning to implement and evaluate improvement solutions that are ready to be applied at scale.

He emphasized that the work of this small committee is preliminary until discussed and finalized by the coalition:

> *I think we can get broad agreement around the idea that certain things that are so "in the way," it would be silly to think you could do much work without tackling them. If you can't measure diagnostic error, you don't know what's causing it on a fundamental level, or you're unable to figure out how to implement solutions, you're not going to get very far.*

The first step in the Coalition's research campaign is to convince people that diagnostic error is a problem worth solving. In that way, the objectives of the research and awareness committees have obvious overlaps. Both groups agree that the awareness campaign needs to target the broadest possible range of stakeholders. The Coalition will be reviewing the planning committees' proposals through the end of 2016 and expects that work on the three collective actions will be ready to commence early next year.

Funding Opportunities From AHRQ

The first dedicated funding for diagnostic safety research became available in April 2015, with AHRQ's announcement of two new funding opportunities.[4] One grant program is dedicated to the incidence and causes of diagnostic error, and the other is focused on improvement strategies and interventions. Both programs address diagnostic safety in ambulatory care. Each program has 3 submission deadlines each year; it takes AHRQ about 4 months to complete the process from submitted applications to committee review and final decisions about which studies to fund.

To publicize the new research opportunities and jumpstart discussions on research priorities and topics, AHRQ sponsored a Research Summit on Improving Diagnosis in Health Care on September 28, 2016. Two hundred

Members of the ***Coalition to Improve Diagnosis*** commit to take measurable action to improve diagnosis. SIDM established and leads the Coalition.

To learn more, visit www.DxCoalition.org.

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- Johns Hopkins Medicine
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- Massachusetts Coalition for the Prevention of Medical Errors
- Midwest Alliance for Patient Safety
- National Association of Pediatric Nurse Practitioners
- National Partnership for Women and Families
- National Patient Safety Foundation
- Society of Hospital Medicine
- Society to Improve Diagnosis in Medicine
- Veterans Health Administration

Government Partners

- Agency for Healthcare Research and Quality
- Centeres for Disease Control and Prevention

Understanding and Improving Diagnostic Safety in Ambulatory Care

Incidence and Contributing Factors (R01)

http://grants.nih.gov/grants/guide/pa-files/PA-15-180.html
Recurring submission dates: October 5, February 5, June 5

Strategies and Interventions (R18)

http://grants.nih.gov/grants/guide/pa-files/PA-15-179.html
Recurring submission dates: September 25, January 25, May 25

- Maximum funding per project will be $350,000 per year for up to five years.
- Funding is available to public and non-profit private organizations. Eligible entities may include applicant partners who are not eligible to apply on their own.
- AHRQ uses the National Institutes of Health's online system, eRA Commons, for applications to submit and track the status of their grant applications.

people attended the event in Washington, DC, and 400 attended by webcast. Information and presentation slides are available on the AHRQ website (http://www.ahrq.gov/news/events/ahrq-research-summit-diagnostic-safety.html).

Kerm Henriksen, PhD, human factors advisor for patient safety in AHRQ's Center for Quality Improvement and Patient Safety and program contact for the funding opportunities on diagnostic safety, says he is pleased with the quality and number of applications received so far and looks forward to the program continuing to grow as awareness of the funding spreads (personal communication, September 2016). Echoing observations made by the coalition's 3 planning committees, Henricksen observes the need for increased awareness beyond "the committed few"—such as SIDM and Coalition members—about diagnostic performance. He also emphasizes that "improving diagnosis is going to be a long-term effort; quick fixes will be relatively few."

'Improving diagnosis is going to be a long-term effort; quick fixes will be relatively few.'

Acknowledging that research findings don't always translate quickly or easily to practice settings, he urges healthcare organizations and frontline clinicians to pursue local improvement strategies in addition to extended research protocols: "If we wait for generalizable research to answer everything, it will take too long. Collect data at the local level" (personal communication, September 2016).

Based on what AHRQ has learned from its commitment to patient safety, Henricksen foresees a similar long-term, programmatic effort for diagnostic safety. He expects the funding opportunities will be renewed after the initial program, which will expire in November 2018.

The Work Continues

Publication of *Improving Diagnosis in Health Care,*[1] in September 2015 was a watershed moment in the movement to improve diagnostic safety. With support from individuals, organizations, government agencies, and funders, SIDM had been working toward that moment for years.

Attaining a goal may represent the beginning or completion of an effort. For SIDM and the diagnostic safety movement, the IOM report represents the completion of a foundational phase. As members of the Coalition have found, the continuing process of developing plans for future work is challenging and necessary.

References

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4 Carr S. At last! Research funds for diagnostic safety. *ImproveDx.* 2015;2(4):1-3. https://c.ymcdn.com/sites/improvediagnosis.site-ym.com/resource/resmgr/Files/ImproveDx_July2015.pdf. Accessed September 9, 2016.

Initial Hospital Diagnosis Affects Mortality for Patients With Acute Myocardial Infarction

In a large national study in England and Wales,[1] researchers found higher rates of mortality among patients with acute myocardial infarction (AMI) who initially had received a different diagnosis. In earlier work, the researchers found an association between a lack of evidence-based care for AMI prior to a hospital visit and increased mortality.[2,3] They believe this is the first attempt to quantify the effect on clinical outcomes of missing an initial diagnosis of AMI. Specifically, they looked at 1-year mortality for patients hospitalized with AMI whose initial diagnosis was "chest pain of unknown cause" or "other initial diagnosis."

The study included all National Health Service hospitals in England and Wales (n=243) and looked at a period of 10 years (April 1, 2004, to March 31, 2013). During that time, the hospitals provided care for 564,412 patients between the ages of 18 and 100 years who were discharged with a diagnosis of AMI. The study looked at the effects of many variables, including differences between patients diagnosed with ST-elevation myocardial infarction (STEMI) and non-STEMI. Overall, the researchers found that:

> *Among the one in three cases where there was inconsistency between the initial and final diagnosis, the chance of receiving guideline indicated treatments for the management of acute myocardial infarction was significantly reduced and associated with high rates of premature death.*[e5]

Had the initial diagnosis of AMI been correct in all cases, researchers estimate that more than 250 deaths per year might have been avoided.

References

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