EDITORIAL AND COMMENT

General Internists in Pursuit of Diagnostic Excellence in Primary Care: a #ProudtobeGIM Thread That Unites Us All

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Making a correct and timely diagnosis is not only critical to the provision of safe patient care, but central to our identity as general internists. In its absence, preventable harm can occur from delayed, inappropriate, or omitted tests, procedures, and treatments. However, errors in diagnosis are notoriously challenging to study. In 2015, the National Academies of Sciences, Engineering, and Medicine (previously the Institute of Medicine) galvanized renewed focus on diagnostic safety as an integral aspect of health care quality through the publication of *Improving Diagnosis in Health Care*.[1]

Timely diagnosis is essential for certain cancers, where longer time intervals to diagnosis are associated with poorer outcomes.[2] As with many malignancies, colorectal cancer can often present with non-specific signs and symptoms. For example, rectal bleeding is both a harbinger of the malignant (colorectal cancer) and the relatively benign (hemorrhoids), with a positive predictive value for cancer barely approaching 10%.[3] As general internists, we must first rely on our most revered skill, the history and physical, to help separate the signal from the noise. Yet, the reality is that practicing in the organized chaos of the ambulatory clinic rife with competing interests, such as other presenting concerns and documentation requirements, makes this an exceedingly challenging task.

In this issue of *JGIM*, Percac-Lima and colleagues contribute to the growing body of evidence describing how a diagnosis of cancer can be missed or delayed. Analyzing cross-sectional medical record review data from 300 adults presenting with rectal bleeding to academic primary care practices, they found that although almost 90% required colonoscopy as indicated by clinical practice guidelines, orders were placed for only 74%.[4] Of those patients, less than 60% ended up having a colonoscopy within a year. The odds of physicians ordering recommended colonoscopies were significantly lower in patients 40–50 years and in patients with additional primary care visits unrelated to rectal bleeding.

These findings echo previous work in this area[5,6] and, while concerning, are not surprising when situated within the longitudinal and fragmented outpatient experience. Making a diagnosis such as colorectal cancer challenges the resilience of our primary care system. Several processes must be sequentially and successfully completed, each of which are vulnerable to individual- and system-level breakdowns.[7] For example, physicians may erroneously attribute microcytic anemia to "chronic disease" or miss follow-up on a positive fecal occult blood test. Prior studies have established that process failures in the diagnosis of colorectal cancer most commonly occur during the provider–patient clinical encounter, follow-up of test results, and/or closure of the referral loop.[5,6] Sure enough, colorectal cancer remains high on the list of conditions that are cited in primary care malpractice claims.

So how do we, as general internists, move the needle forward on diagnostic safety in primary care? First and foremost, given our skill set in diagnosis, we are well positioned to help develop and lead a more robust infrastructure encouraging diagnostic safety efforts in outpatient care. Admittedly, we will need more administrative, research, and implementation leadership to make this feasible. To our knowledge, few health systems have implemented some form of governance, oversight, and/or accountability framework to support safety in the ambulatory setting.[8] To paraphrase Deming, our current system is perfectly designed to get the results it gets, which is unfortunately a general lack of investment in improvement efforts. Creating such an infrastructure can help foster a culture incentivizing and rewarding behavior aimed at making diagnosis safer. Whether it's running outpatient morbidity and mortality conferences, leading a quality improvement team on increasing the follow-up rate of abnormal test results, or conducting applied research, the opportunities are plentiful.

Second, we need to revisit the heroism classically attributed to making a challenging diagnosis. Morning reports, rounds, and clinicopathologic conferences are known to venerate the infrequent conditions. In fact, most diagnoses that are missed by general internists are not due to rare diseases, but instead common conditions, such as pneumonia, congestive heart failure, and cancer, which can lead to a significant burden of patient harm.[9] We have learned from many studies, including the one from Percac-Lima and colleagues, that faulty data synthesis and an inadequate history and physical are leading contributors to diagnostic error.[7] Unfortunately, our current system can often make these fundamental clinical skills seem

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difficult at the best of times. Thus, any improvement effort aimed at tackling diagnostic safety must include renewed prioritization of clinical reasoning and bedside skills, especially for the "horses," rather than just the "zebras."

Third, we must work to improve measurement around diagnosis, as the generation of additional empirical data will help focus our energy and resources on improving diagnostic safety in an evidence-based manner. In a 2017 policy paper, the American College of Physicians (ACP) recommended "continued research into and development of a comprehensive collection of standardized patient safety metrics and strategies, with particular attention to primary care and other ambulatory settings."[10] Although the measurement of diagnostic errors in the absence of standards defining diagnostic accuracy has been challenging, the increasing availability and utility of digital data has helped in making some headway. One can now generate a list of patients who did not receive follow-up for new-onset rectal bleeding at 60 days, as well as develop similar mechanisms to identify other patients at risk of "falling through the cracks."[11] Furthermore, electronic health records (EHRs) contain rich data to facilitate a "missed opportunity" analysis, which helps determine what could have be done differently to make the diagnosis earlier, framed within the context of an evolving diagnostic process.[6] There are no primary care practices we are aware of that routinely utilize metrics related to diagnostic error, but such an approach can be especially powerful for uncovering data needed for improvement. As general internists, we can lead the way in partnering with our institutions toward better measurement around diagnosis.

Fortunately, diagnostic safety in primary care is finally getting the attention it has long deserved. Dialog in this domain has only recently begun in earnest, with the ACP[10] and the Agency for Healthcare Research and Quality[12] (AHRQ) issuing papers highlighting priority areas in policy and practice for improving quality and safety in ambulatory care. The AHRQ document notes significant gaps in knowledge and recommends "prospective, large-scale studies in diverse ambulatory settings to develop and test ambulatory safety interventions." New guides and toolkits have been developed to help primary care clinics implement interventions addressing high priority areas, such as closing the loop on provider referrals.[13] As general internists, we have much to do. In addition to addressing knowledge gaps in primary care safety, we must also lead the implementation of these interventions to create value not only in theory, but in practice.

In summary, as a practical next step, we suggest this three-pronged strategy to help reduce primary care-related diagnostic error: (1) build governance, oversight, and/or accountability framework to support safety in your health system or practice; (2) consider diagnosis as less heroic, and more as an iterative process that involves renewed emphasis on clinical reasoning and bedside skills, especially for common conditions; and (3) leverage health system data to improve measurement in diagnosis. There is no better time than now for us as general internists to lead the way toward safer and more timely diagnosis in primary care. Ultimately, the pursuit of excellence in diagnosis is a common thread that unites us all.

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