

Opinion Paper

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The IOM report on improving diagnosis: new concepts

DOI 10.1515/dx-2015-0029

Received October 25, 2015; accepted November 1, 2015; previously published online November 24, 2015

Abstract: The IOM report ‘Improving Diagnosis in Health Care’ represents a major advance in summarizing the problem of diagnostic error. Three new concepts in the report will be helpful in future efforts to understand and improve the diagnostic process: a new definition of diagnostic error, a new framework for understanding the diagnostic process, and a new concept of the diagnostic ‘team’. This paper highlights these new concepts and their relevance to improving diagnosis.

Keywords: diagnosis; diagnostic error; diagnostic process; teamwork.

Introduction

Exactly 15 years ago, the Institute of Medicine launched the modern patient safety movement by publishing the landmark report, *To Err is Human* [1]. The problem of diagnostic error was given short shrift in the original report, a problem that is been amply rectified by the just-released report on Improving Diagnosis in Health Care, the missing chapter on this important patient safety concern [2]. The report was requested and supported by our own organization, the Society to Improve Diagnosis in Medicine, and it is very appropriate that we will use this and the next several editions of the Society newsletter to highlight the importance of the new report, and our thoughts on how the report can be used to improve both the quality and safety of diagnosis in all practice settings.

This first commentary will focus on ‘what’s new’ in this report, and there are several noteworthy items to mention: a new definition of diagnostic error, a new framework for understanding the diagnostic process,

and perhaps most importantly, a team-based conceptual model of diagnosis that could directly improve diagnosis in practice today.

A new definition

Reflecting uneasiness with the three major definitions of diagnostic error that are already in use, the IOM report presents a new definition.

The new IOM definition of diagnostic error:

The failure to:

- a) establish an accurate and timely explanation of the patient’s health problem(s), or
 - b) communicate that explanation to the patient
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Proponents of the new definition point out first that it is patient-centered, and the only definition where patients are even mentioned. Second, the new definition outlines several key research opportunities: evaluating the accuracy of a given diagnosis, its timeliness, and the communication process used to convey the diagnosis. Finally, the definition emphasizes the major importance of communication, the #1 reason cited in every investigation that evaluates the causes of adverse patient safety events, including diagnostic errors.

In contrast, there are also questions about the value of the new definition and the terms that were chosen. Why was communication included as part of the definition when it is a discrete and somewhat unrelated step in the diagnostic process? Why was the phrase ‘an explanation of the patient’s problem’ chosen over the more easily-understood and classical term ‘diagnosis’.

The word ‘diagnosis’ describes both the label given to a patient’s illness, and the process by which it is derived. The three previous definitions separate out these concepts, with my own definition focusing on the label, and the newer definitions of Hardeep Singh and Gordon Schiff focusing on the process. These definitions, if anything, are more complementary than conflicting, because they each have specific uses in health services research studies

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[3, 4]. My own definition (the diagnosis label is wrong, missed, or delayed) generally identifies unambiguous cases of diagnostic error, but can only be applied in retrospect, requires definitive information of some sort, and is subject to hindsight bias [5]. The newer definitions that focus on breakdowns in the diagnostic process (Gordon Schiff) [6] or missed opportunities (Hardeep Singh) [7] are clearly focused on the diagnostic process *per se*, and can be used both in real time and prospectively to study diagnostic errors in actual practice settings. The new IOM definition combines both the label and the process aspects, and offers yet another approach to study and understand diagnostic errors (Figure 1).

A new conceptual framework

The IOM report presents a comprehensive new framework that describes diagnosis as a process that takes place within a complex environment and is influenced by a wide range of actors and factors. The framework is based largely on the SaferDx framework published while the IOM report was being drafted, by Hardeep Singh and Dean Sittig [8]. The framework is important for several reasons: First, by so clearly designating diagnosis as a process, it opens the door to the possibility of improving outcomes by applying the same process-improvement techniques that abound in all industries today: PDSA cycles, ‘lean’, the theory of constraints, six sigma, high reliability, take your pick. Each could be applied beneficially to improve the outcomes that translate into harm and lives lost. Second, the framework acknowledges the interplay between the system and the players in it. There is now widespread agreement that the ideal approach to understanding diagnostic performance is through the lens of ‘human factors’, and the best chance for improvement is by applying the principles and lessons of human factors engineering [9]. Finally, the framework emphasizes the importance of studying the outcomes of the diagnostic process to improve calibration and as an essential element of the performance improvement cycle. This should take place at both the individual level, where providers get better feedback on their outcomes to improve their own performance, and at the institutional level to address the very

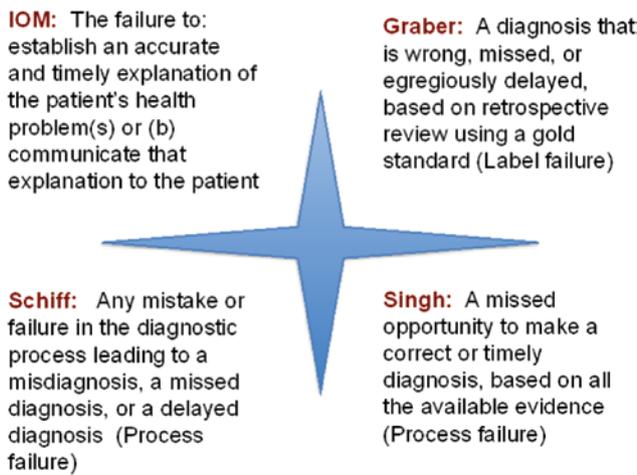


Figure 1: The four major definitions of diagnostic error.

The outcomes from the diagnostic process

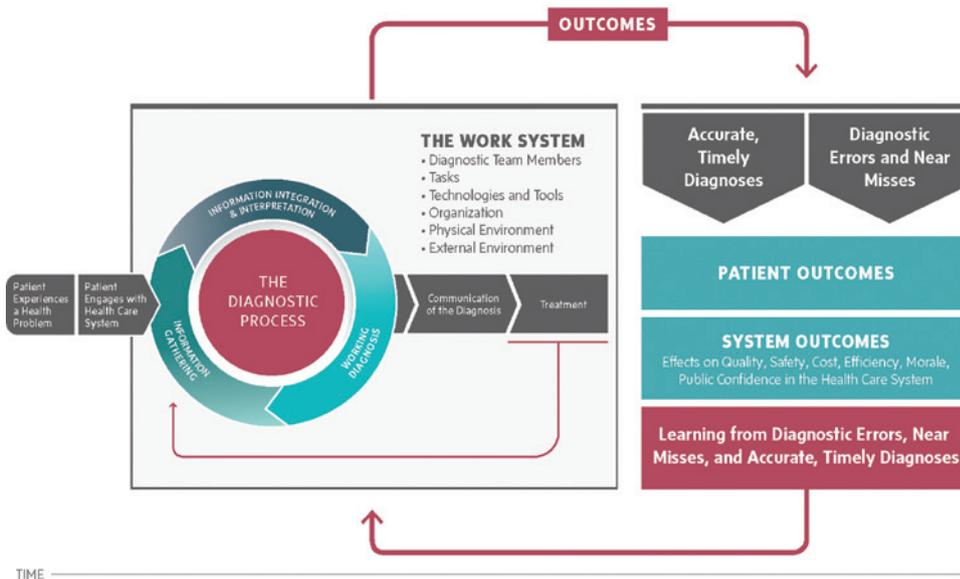


Figure 2: The IOM framework describing the diagnostic process and its outcomes.

large number of system properties that influence diagnostic outcomes (Figure 2).

Diagnostic teams

By tradition, the physician makes (or tries to make) a diagnosis, and the patient receives it. The IOM report proposes a very different model, one that is in many senses revolutionary. The report calls for patients to be active participants in the diagnostic process, as engaged as they are willing and able and prefer to be. Until our health-care systems reach much higher levels of reliability, this approach creates a safety net that could be invaluable in helping prevent errors in the first place, or catching them before they cause harm. The approach is in perfect sync with the growing appreciation of the value of patient-centered care, and the movement towards increasing patient engagement in all aspects of their care [10]. Evidence is growing that engaged patients have better outcomes; the question is whether patients themselves will view this involvement as an opportunity, or a burden.

What is not new about the ‘team’ approach is the need to involve health professionals in the clinical laboratory and radiology departments. These key individuals have always been important and highly valued members of the diagnostic team, but have been increasingly lost from effective participation thanks to the isolation inadvertently imposed by electronic medical record systems [11]. The person-to-person interactions that were so common a generation ago have almost disappeared, a process the IOM report recommends be reversed, and as quickly as possible. Nothing can replace the value that direct conversations enabled.

In conclusion, the value of Improving Diagnosis in Health Care extends beyond just compiling all of the available evidence on the problem of diagnostic error; the report gives our field new ideas to consider and the opportunity to incorporate these in novel ways to provide safer care.

Author contributions: The author has accepted responsibility for the entire content of this submitted manuscript and approved submission.

Research funding: None declared.

Employment or leadership: None declared.

Honorarium: None declared.

Competing interests: The funding organization(s) played no role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the report for publication.

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