PREFACE

Introduction to the JGIM Special Issue on Health Information Technology

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INTRODUCTION

For health care to be safe, effective, efficient and reliable, we need to get a lot of things right—including individual clinical decisions about prevention and care for each patient, and the management and policy decisions about how to organize, manage, and pay for that care. As physicians, we recognize that providing the right care to the right patient at the right time—every time—requires knowledge, teamwork, supportive practice environments, and incentives that make the right thing the easy thing to do. In recent years, there has been a dramatically increased interest in the use of health information technology as an essential component of crossing the quality “chasm”.

In fact, health IT seems to be everywhere we turn in recent years. Electronic medical records, health information exchange, e-prescribing—the list can get quite long. While there is a dedicated section of the medical community that has studied the subject for decades, health IT has clearly entered the mainstream consciousness of American health care. This is both a natural evolution—advances in information and communications technology have influenced most domains of everyday life—and policy makers’ intense interest in achieving a far better return on our substantial investments in health care. At the same

time, efforts to implement health IT in hospitals or physician practices can be frustrating and humbling. What is the evidence?

In 2006, the Agency for Healthcare Research and Quality (AHRQ) supported a systematic review to evaluate the strength of the evidence for the premise that health IT can improve quality and efficiency¹. Led by Paul Shekelle, this superb review found that selected applications of health IT are associated with significant improvements in quality; the evidence base is much less developed for avoidance of unnecessary expense. Notably, one quarter of the 256 articles in this review were published by 4 leading edge institutions, raising questions regarding generalizability.

As excitement about the potential for health IT to improve health care escalated, more recent work raised serious questions about what will be required to close the gap between potential and everyday experience. For example, Linder and colleagues² found that there was no clear association between the use of an electronic health record and quality of care. Indeed, a study from Children’s Hospital of Pittsburgh³ found that introduction of computerized order entry was associated with increased mortality for children transferred to their institution. And reports of implementation “challenges” from multiple organizations have prompted serious concerns that the successes demonstrated by early innovators may not be replicable.

Since 2004, AHRQ has been given the responsibility and resources to invest in evaluating the impact of multiple applications of health IT on patient safety and quality. Emerging lessons from our work today suggest that we should not ask “is health IT worth it?” but rather how can we assure that the promise of health IT is translated into improved care for all patients. Succinctly put, addressing this question requires a clear articulation of health care processes, workflow, goals for health care, and human factors—in other words, the people factor. To paraphrase an AHRQ grantee, successful implementation is one part technology, two parts workflow, and three parts culture. We have also learned how concerned our patients are that their personal information not be misused.

There is no question that the volume of data in our health care system requires high-quality information systems. However, the complexity of our health care system also requires high-quality information tools. Primary care physicians in particular need great information systems and great information tools to deliver the high-quality care we all desire. In addition, they need to understand how health IT can support their efforts, what this means for their practices, and what questions to ask before making the leap⁴. The articles in this issue address a spectrum of practical and important challenges encountered in efforts to align the potential of health IT

¹Shekelle PG, Morton SC, Keeler EB. Costs and Benefits of Health Information Technology. Evidence Report/Technology Assessment No. 132. (Prepared by the Southern California Evidence-based Practice Center under Contract No. 290-02-0003.) AHRQ Publication No.06-E006. Rockville, MD: Agency for Healthcare Research and Quality. April 2006.

²Linder JA, Ma J, Bates DW, Middleton B, Stafford RS. Electronic health record use and the quality of ambulatory care in the United States. *Arch Intern Med* 2007; 167: 1400–5.

³Han YY, Carcillo JA, Venkataraman ST, et al. Unexpected increased mortality after implementation of a commercially sold computerized physician order entry system. *Pediatrics* 2005;116:1506–12. [Erratum. *Pediatrics* 2006;117:594.]

⁴Langley J, Beasley C. Health Information Technology for Improving Quality of Care in Primary Care Settings. Prepared by the Institute for Healthcare Improvement for the National Opinion Research Center under contract No. 290-04-0016. AHRQ Publication No. 07-0079-EF. Rockville, MD: Agency for Healthcare Research and Quality. July 2007.

with important clinical challenges, and offer enormous insights about the need for closer collaboration between clinicians, health system leaders, vendors, informaticians, systems engineers—and our patients. Ultimately, we will know we have succeeded when health IT clearly makes it easier to provide the best care for all patients, and helps to customize current science for individual's needs and preferences. This journey will not be easy or straightforward. It is also not optional.

AHRQ is honored to have sponsored this special issue of *JGIM*. As our sponsored research bears fruit, we will continue to synthesize and disseminate the findings of our grantees, contractors, and staff. We will also work to make implementation of the best evidence a reality by continuing our collaborations in both the public and private sectors. The papers in this issue will be an important resource and an inspiration to all committed to improving health care.