Invited commentary

Implementation of health information technology: an important but challenging field of inquiry

Earlier this year, we published a systematic review of the published literature on the costs and benefits of health information technology (HIT) (1). While we found much evidence to conclude that HIT could have beneficial effects, we identified a large and important gap in the evidence about how to implement HIT systems, particularly with respect to commercial systems (as opposed to internally developed systems) and in situations outside of academic medicine. Why is this important? Because most of the health care providers who will ultimately implement an HIT system will do so using a commercial system they purchase, and most providers are not in academic medicine. It is our belief that this gap—understanding how to implement HIT in a private-practice setting—and the continuing mismatches between who pays and who benefits are very important factors in the slow uptake of HIT in private practice.

The article by Fullerton and colleagues (2) is therefore a welcome addition to the HIT literature. It described some of the barriers and challenges faced during implementation of a commercially available HIT system in an ambulatory care clinic of a health network affiliated with Baylor. The authors selected the site for the initial implementation based on its perceived receptivity to HIT and described their efforts to train staff and tailor workflow processes. They also reported the unexpected problems they faced—in this case, the crash of the server, leaving the clinic without any HIT system at all and no alternative system in place. The authors concluded with a series of "lessons learned."

This information will be helpful to others in a similar practice environment facing a similar problem. There is also much more others may want to know. For example, the authors said they classified all practices in the network as "pilot," "early," "mid," or "late" adopters according to their "technical readiness and willingness to adopt the [ambulatory electronic health record]." They described how technical readiness was assessed but not how "willingness" was assessed. Others contemplating an HIT implementation may consider "willingness" to be a crucial variable in success. How should one determine willingness? Ask the leaders of the clinic if they are willing? Ask the clinicians providing care every day if they are willing? Ask others? And what exactly should they be asked? The way the information about HIT is presented and the financial and quality context can potentially be crucial in how HIT is perceived.

The lack of this additional information in the article by Fullerton and colleagues is not the "fault" of the authors or indeed of anyone in particular. For years we—the collective we, meaning researchers, clinicians, policymakers, journal editors—have spent all or almost all of our time finding and publishing information about "new things," giving very little attention to how we can implement these new things. There is only recently a growing recognition that this latter endeavor is equally important if patients are to realize the full benefits of all the wonderful innovations being continually developed. This new field has been termed "implementation science," and now a journal is devoted to it (http://www.implementationscience.com). As with any discipline in its early stages, there is still much to be learned, including the kinds of information important to measure and report regarding the innovation, the setting, and the implementation process. Sets of reporting guidelines specific to certain situations have been proposed (3, 4). No doubt future research and expert opinion will help refine these sets and will develop similar guidance for other types of implementation research. Contributions such as that made by Fullerton and colleagues will help advance both HIT implementation in specific and the science of implementation in general.

—Paul G. Shekelle, MD, PhD
Director, Southern California Evidence-Based Practice Center

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