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Letter to the Editor

A Call for Standardized Metrics to Assess Health IT Impact on Medication Safety

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To the Editor:

It has been repeatedly affirmed that increased technology use in health care is a cost-effective means of providing higher quality patient care. One main driver for expanded health information technology (IT) is the belief that it increases the safety of the medication use process. Through the use of substantial public and private investment, particularly the Health Information Technology for Economic and Clinical Health (HITECH) Act, as part of the 2009 Recovery Act, which amounted to $25.9 billion, this viewpoint has been validated.[1] Furthermore, a 2011 American Society of Health-System Pharmacists (ASHP) national survey of hospital pharmacy practice that focused on technology utilization related to medication dispensing and administration found an increase in the level of adoption of various technologies such as computerized prescriber order entry (CPOE), barcode medication administration (BCMA), and smart infusion pumps.[2] Health system administrators are left to devise their own metrics to determine whether their investment in such technologies is money well spent.

We recently conducted a review of the literature to analyze whether there was any uniformity among health systems in choosing appropriate metrics to assess the impact of health IT implementation on medication safety-related outcomes. Using predetermined PubMed search criteria, we evaluated 43 articles, and, as expected, we observed broad diversity with 34 different metrics identified. About 59% of these metrics were utilized in just 2 or fewer articles, further emphasizing the variance observed in the literature review. The measurement of voluntarily reported medication errors was most commonly utilized, but this metric is inherently unreliable due to the difficulty in quantifying and qualifying such errors. Many confounding factors exist, and literature suggests that some types of health IT may introduce new errors, all leading to concerns whether this particular metric is the most accurate to use. Overall, our research suggests a lack of concordance as to how best to measure the impact of health IT on medication safety.

What can be done to create a safer and more accurate method for assessing medication safety? The Institute of Medicine (IOM) has previously called for a uniform standard of metrics that would more easily determine the effectiveness of health IT on medication safety outcomes. In a November 2011 report titled *Health IT and Patient Safety: Building Safer Systems for Better Care*, the agency called on the Department of Health and Human Services (HHS) to promote the "development of new measures for reliably assessing the current state of health IT safety and monitoring for improvements."[3] The IOM urged HHS to "fund a new Health IT Safety Council, within an existing voluntary consensus standards organization."[3] The purpose of this council would be to develop criteria to judge the safe use of health IT and to evaluate how it is used to enhance safety.[3] To date, this council has not yet been formed.

Although there have been increments of advancement in the development of standards in measuring the impact of health IT on medication safety, it is clear there is more to accomplish in developing a framework by which such implementation can be assessed. A consensus of all major health care stakeholders is needed to create a uniform method to assess how health IT is impacting safety. Ultimately, there should be further development of validated metrics that more clearly demonstrate whether the adoption of health IT, which can cost millions of dollars, is cost-effective and is indeed improving the safety of the medication-use process.

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REFERENCES

1. US Department of Health and Human Services. *Recovery Act-funded programs*. http://www.hhs.gov/recovery/programs/index.html#Health. Accessed October 17, 2012.

2. Pedersen CA, Schneider PJ, Scheckelhoff DJ. ASHP national survey of pharmacy practice in hospital settings: Dispensing and administration–2011. *Am J Health Syst Pharm*. 2012;69:768-784.

3. Institute of Medicine of the National Academies. *Health IT and Patient Safety: Building Safer Systems and Better Care*. Washington, DC: National Academy of Sciences; 2011. ■