Leveraging electronic medical record (EMR) systems along with other health information systems (HIS) to improve data capture and reporting for a surgical quality improvement program at a tertiary care institution and integrated health system.

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Abstract

Many EMR systems are focused on documentation but are not designed for discrete clinical data capture for outcomes and quality measurement. This requires new clinical workflow and methods to capture patient specific data as part of usual care, without negative impact on productivity. We describe a process to harness tools within a commercially available EMR system, together with other electronic data sources to improve the accuracy and efficiency and scalability of a surgical quality reporting program.

The problem

Surgical quality outcomes data are increasingly required for internal quality improvement purposes and external reporting. Commercially available electronic medical record systems are not uniformly structured to capture the required information. This must therefore be developed by each individual institution at significant cost.

Routine clinical practice using traditional text based systems does not reliably support collection of many of the data elements required. Much manually intensive effort is required to retrospectively collect the information by chart review.

Improvement requires a system for structured data capture and clinical workflow modification to ensure completeness of the data collection. However, it is necessary to integrate this quality and outcomes data capture with day to day real time clinical operations so as to impose the least possible additional burden on health care providers.

The project

We report here how we customized our commercially available EMR and how clinical workflow was adapted in surgical departments of a major tertiary care center to ensure capture of the essential data elements. We also report how this data was combined with other data sources to complete a required data set. This process was also designed to permit implementation of the process in the future across multiple departments and institutions, which are linked by a common data, and to do so with greater accuracy and efficiency.

Conclusion

A commercially available EMR can be customized and workflow adapted in surgical departments to provide essential data for standardized surgical outcomes data sets. This requires considerable time and effort, and cost to each institution. Future EMR development should recognize the increasing requirements for quality and outcomes reporting and create standard modules based on national standard outcomes reports, which enable all institutions to capture and report this data. Such capabilities were recommended in the 2003 Institute of Medicine report on Key Capabilities of an Electronic Health Record System.

Reference