ABSTRACT

Despite the rapid pace of implementation of clinical document imaging technology, little is known about the effects such systems have on the institutions that use them. In order to facilitate evaluations of clinical document imaging systems, a qualitative approach was taken to define potential quality and performance measures. These measures were then categorized and rated. The performance and quality indicators identified in this study provide a basis for further research that will validate these indicators and provide a framework for evaluating the impact of clinical document imaging on health systems.

BACKGROUND

Clinical document imaging is being integrated into electronic medical record (EMR) products to provide institutions a seamless migration path from a mainly paper-based system to a fully digital clinical record. Leveraging technology developed for other information-intensive industries, such as insurance and banking, clinical document imaging products now go beyond simply storing images of paper forms to providing workflow management, allowing healthcare institutions to manage information with greater efficiency and reliability. Despite the limitations of scanned images compared to fully coded computerized patient records, there are several forces propelling the use of clinical document imaging. These include: (1) the need to improve access to clinical information, (2) security and privacy regulations that require audit trails and role-based access to a patient’s chart, (3) the high costs of storing paper documents compared to scanned images, (4) quick responses to the requests of payors in order to reduce the lag time between the delivery of services and reimbursement, (5) the management of patient records from outside institutions that cannot be imported into existing EMRs.

Despite great interest in clinical document imaging among larger healthcare intuitions, little is known about how to evaluate this technology. Many of the published reports about clinical document imaging are case-reports in the trade literature. Because of the popularity of clinical document imaging systems, I undertook the first step in conducting an evaluation of an informatics technology: defining the quality and performance indicators against which the technology will be benchmarked.

METHODS

Prior to the implementation of a document imaging system, the stakeholders of the current clinical documentation system at Oregon Health & Science University were identified using a snowball sampling method, starting with members of the clinical document imaging steering committee. Using a semi-structured instrument, 13 stakeholders were asked to describe their current use of the documentation system, what quality and performance indicators are currently being measured, and suggestions on indicators that could be measured when the new imaging system is installed. They were also asked to supply names of other potential stakeholders so that the list of subjects could be broadened.

EVALUATION

From field notes of the interviews, a list of 53 performance and quality indicators was assembled. The indicators were organized into 4 distinct performance categories: user-satisfaction, compliance, financial, and system metrics. Each indicator was also evaluated on the axes of stakeholder interest, feasibility, perspective of measurement, and objectivity.

CONCLUSION

These performance and quality indicators for clinical document imaging projects form the basis for evaluative research of such systems. This work represents a first step toward developing a consensus on the proper metrics to measure quality. Future research is necessary to validate these findings in settings that have already implemented document imaging systems and conducted evaluative studies of these systems.