Documentation of Clinical Workflow: A Key Step in a Plan to Facilitate Implementation of an Electronic Patient Record

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Abstract

After a year of preparation, the UT Dental Branch implemented an Electronic Patient Record (EPR) and a Picture Archiving and Communication System (PACS) for digital imaging. Central to the preparatory process was documentation of existing clinic workflow as a set of detailed flowcharts, which eased cultural and logistical changes and had the immediate benefit of increasing system efficiencies.

Introduction

In January 2005 the UT Dental Branch decided to implement an EPR, including a picture archiving and communications system (PACS) for its conversion to digital radiography. A literature search revealed that many health information technology (HIT) projects fail, not because of shortcomings in the technology, but due to underestimating the cultural, logistical and behavioral barriers to change.

Method

Approximately one year before implementation of the EPR, administrators convened a workflow task force composed of key clinic faculty, administrators and clinic supervisory personnel, and facilitated by an outside HIT expert. Their charge was to (1) describe the current workflow in detail; (2) match current practice with capabilities of the EPR, and (3) plan and implement adjustments in workflow, personnel and other resources. Simultaneously, school HIT personnel worked to (4) configure the EPR to match clinic needs, then (5) pilot test the EPR at a small offsite clinic. The Executive Associate Dean (project manager and active task force member) prepared for a fundamental cultural change by (6) frequent and ongoing two-way communication with all affected parties, including the impact of the EPR on the doctor-patient relationship, and (7) school/clinic-wide training.

The task force met weekly for five months and created over two dozen flowcharts detailing pre- and post-EPR clinical workflow (Fig. 1). This work had immediate value: examination and documentation of the workflow brought to light at least forty instances of inefficiencies and inequities in the system that could be confronted and corrected before the new technology was installed.

Figure 1. Overview of Clinic Workflow (Chart 1/24)

Following EPR training of task force members in May 2006, the group began the more difficult chore of revising workflow for conversion to an EPR. As expected, these changes were far more profound than uncovering of duplication or inefficiencies, as movement to an entirely paperless system caused cultural as well as logistical shifts. For example, odontograms (pictorial charts of the patient’s dentition) are no longer five carbon-paper copies, but are now functional, dynamic, multimedia components of the patient record, available for viewing and editing at any workstation. Workflow changes are occurring simultaneously through interactive, real-time modifications to the EPR.

Conclusion

The workflow analysis (flowcharts) proved essential for: (1) identifying existing conflicts, issues and inequities; (2) configuring the capabilities of the EPR to match UTDB clinic needs; (3) greatly eased the transition to new practice and policies; and (4) pointed the way to re-assignment of staff resources and responsibilities.

References