EMR Adoption Model

Handbook

Overview

Physicians across the country and even the world are migrating from entirely paper-based practices to offices supported by electronic medical records (EMRs). As this transition occurs, systems are beginning to automate information management tasks and facilitating data transfer across systems. However, the migration is not a straightforward shift from paper to EMR, it is occurring in stages as portions of information management activities change with EMR capabilities implemented.

In order to help practices understand the current stage of EMR adoption within offices and ultimately determine what needs to be done to move to the next stage, the eHealth Observatory has defined six stages of EMR adoption based on the model developed by HIMSS and key capabilities of an electronic health record system outlined by the IOM. This document provides descriptions of each stage.

Table of Contents

Introduction

Our 5-stage EMR adoption model builds upon work by HIMSS and the IOM to ensure alignment with existing initiatives. Specifically, HIMSS' EMR Adoption Model for Physician Clinics (2008) provides the basis for the six stages and the IOM's Key Capabilities of an Electronic Health Record System (2003) provides groupings of functions that we describe in detail at different stages in our model. While the model serves as a basis for our methodology, the survey tools we have developed are the primary resources for rapid evaluation activities.

Disclaimer

The 5-stage model and accompanying survey tools only describe functionality at a high level for care processes. They do not describe the technical specifications of an EMR that would be required to implement the functionality (e.g. data architecture or messaging standards) nor do they delve into organizational policies and procedures that would accompany implementation.

Scope

Functions included in the tools are applicable to systems in many health care settings, however, they are targeted specifically to the outpatient office setting.

Background

A. HIMSS EMR Adoption Model for Physician Clinics

The model describes how data storage, transmission, decision support and communication gradually become facilitated by electronic means and available at point-of-care as a clinic progresses through the stages. Benefits listed at a lower stage are assumed for higher stages.

For example, for patient data storage and retrieval:

Stage 0:
  o   Paper charts are the only means of storing and accessing clinical information

Stage 1:
  o   Permanent electronic storage of free text chart notes after transcription

Stage 2:
  o   Early clinical data repository with ability to search for patients with a particular diagnosis or medication

Stage 3:
  o   Computers at point-of-care have replaced paper-chart and are mandatory for all clinical documentation
  o   Electronic import and storage of lab results in structured form
  o   Some structured data capture within encounters

Stage 4:
  o   Population-based quality measurement and reporting capabilities
  o   Online personal health record for patients

Stage 5:
  o   Proactive searching for patients with particular conditions and medications as new clinical evidence develops

B. IOM's Key Capabilities of an Electronic Health Record System

In 2003, the Institute of Medicine (IOM) was asked to provide guidance on key care delivery functions of an electronic health record system (EHR). The purpose was to have a common set of expectations and functional model for EHR capabilities that all parties involved could use. The IOM Committee addressed this request and developed a letter report outlining eight core categories of EHR system capabilities:

Health Information and Data: Storage of certain data about patients

Results Management: Management of results of all types, including laboratory and radiology

Order Entry/Order Management: Management of prescription orders and tests

Decision Support: Reminders, alerts, and diagnosis-assistance to enhance clinical performance

Electronic Communication and Connectivity: Effective communication and access to information among care providers and with patients for quality health care

Patient Support: Patient education and monitoring tools to support patients and caregivers

Administrative Processes: Functions supporting scheduling and billing

Reporting and Population Health Management: Compilation of data from several sources for reporting

Evaluation Methodology

A survey tool with a scoring template has been developed based on the 5-stage EMR Adoption Model, which is a table organized by the eight core categories of functionality outlined by IOM. For each category, specific functionality expected at each stage is described in cells corresponding to stages (columns).

A. Target Audience

The survey tool can be used by researchers, evaluators, or even physician office practices themselves to determine the current stage of EMR adoption. It provides a benchmark for comparison and future implementation plans. In addition to describing functionality expected at each stage, it also describes how activities occur.

The survey tool can be used with two roles in the physician office:

A.1.1 Medical Office Assistant (MOA)
The MOA plays an important role in the office, ensuring the day-to-day workflow runs smoothly. They have an understanding of the physician's work and are responsible for information management, using the EMR as necessary.

A.1.2 Physician (MD)
The MD heavily uses the EMR for a wide range of clinical tasks and may invoke decision support or other capabilities for clinical decision making.

B. Tools

Our overall method to determine current stage of EMR adoption consists of two survey tools and a scoring template.

1. EMR Adoption Survey: The survey tool consists of a series of multiple-choice questions for MDs and MOAs to answer, corresponding to the 5-stage EMR Adoption Model. All questions are applicable to physicians and a subset can be answered by an MOA.

2. EMR Adoption Survey Scoring Sheet: A scoring template (Microsoft Excel file) is provided to record scores for multiple instances of the survey (i.e. if the survey is administered several times or across physician offices). It automatically generates average scores and a summary chart.

References

HIMSS and HIMSS Analytics. (2008). Electronic Medical Record Capabilities and Expected Benefits in US Non-federal Hospitals and Physician Clinics. In *A Call for Action Enabling Healthcare Reform Using Information Technology Recommendations for the Obama Administration and 111th Congress*. Retrieved from http://www.himss.org/2009calltoaction/HIMSSCallToActionDec2008.pdf

IOM Committee on Data Standards for Patient Safety. (2003). *Key Capabilities of an Electronic Health Record System: Letter Report*. Retrieved from http://www.nap.edu/catalog/10781.html