**Electronic Prescribing - Workflow Modeling and Analysis Method**

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### Background

Clinicians are beginning to use electronic medical records (EMRs) in offices. A key workflow change will be the use of computers for prescribing, i.e., e-prescribing. The transition to e-prescribing (right) is derived from the 5-Stage EMM Adoption Model developed by the eHealth Observatory, which is based on HINEM EMM Adoption Model for Physician Clinical and Expected Benefits for Each Stage (2006). To evaluate the use of EMRs for prescribing, we developed a workflow modeling and analysis method (see below).

A foundational part of this method is the generic workflow model. This model was turned into a series of colour-coded diagrams using five levels of computer use for activities in prescribing.

At first glance, the concept of inpatient prescribing is simpler: a clinician writes a prescription, a pharmacist fills it, and then a patient takes it. In the real world though, the workflow is often not so straightforward. One individual might act in more than one role, one role might be taken on by multiple individuals or, at the same time, and the workflow can change depending on how a patient’s medical treatments change over time. Additionally, incorporating a number of improvements to the workflow diagram along with some comparisons to components of other prescribing models can be the patient or a proxy (i.e., family member) that receives the prescription.

### Overall Method

The workflow diagram is primarily based on clinician experience with respect to physician office prescribing and includes some components discussed in Bell et al. (2004), Wong et al. (2005) as well as clinical factors from the Compendium of Pharmaceuticals and Specialties (Repchinsky, C. D. in Dyre, 2009).

The overall method can be employed by a physician office practice as a quality improvement exercise or used by analysts in formal evaluation studies. The tool would typically be used during interviews with physicians and other staff. It is targeted to specifically describe and facilitate the assessment of three elements of e-prescribing presented in the separate office setting of clinicians and does not suggest or dictate HL7 messaging formats, define EMR usability criteria, or list implementation specifications for an ePrescribing system.

The purpose of the workflow model is to present the results of the workflow analysis for the practice along with any comments collected during the evaluation.

### Generic Prescribing Workflow

- **Stage 0**
  - Identify Patient
- **Stage 1**
  - New prescription
- **Stage 2**
  - Patient-specific clinical and non-clinical factors
  - Medication-specific factors
  - Prescription validity
- **Stage 3**
  - Prescription sent electronically to a designated pharmacist
  - pharmacist initiates dispersive-related activities
- **Stage 4**
  - Notification of patient
- **Stage 5**
  - Prescriber review

### Comparisons

As mentioned in the background, prescribing is a complex process. Our generic workflow diagram represents our view of prescribing. However, prescribing can be represented in different ways for different reasons. To show how our model compares to other representations, we present a four-way comparison of our generic workflow model to three other models about prescribing.

### End Points

1. Initiator
2. Authorized prescriber
3. Patient
4. Dispenser
5. Administering authority

### Notes

- *The specific individuals carrying out tasks at one site change e.g., The physician may be the prescription's originator and may include a pharmacist who has written the prescription. The 3-Stage EMM Adoption Model for Physician Clinical and Expected Benefits for Each Stage (2006). To evaluate the use of EMRs for prescribing, we developed a workflow modeling and analysis method (see below).*

### References