

ONC Policy Committee Information Exchange Workgroup

ePrescribing Today: Adoption Successes & Challenges, Part II

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I'd like to thank the committee for the opportunity to provide input today on the challenges and successes of ePrescribing.

We at First DataBank have a different perspective than many of the panelists here today. We hope that our input will support and add to the overall body of knowledge that will enable ePrescribing (and medication reconciliation) to succeed—not merely succeed in terms of widespread adoption, but in delivering real value both on the micro level—to the people involved in an individual transaction, and the macro level, accruing value to the healthcare delivery system as a whole. That means the variety of clinicians writing the prescriptions (doctors, Nurse Practitioners, Physician Assistants and others), the pharmacists monitoring and dispensing the medications (the specialists in medication therapy), the patients who are the recipients of the medications and the payers. Ultimately benefiting all by providing more value for the dollars spent in on healthcare.

I would like to begin with a very brief explanation of First DataBank's role in ePrescribing and medication reconciliation (as well as in EHRs and healthcare IT generally). I think that will help to put into context the perspective we bring to the table as well as the comments set forth today.

First DataBank provides highly structured drug databases that are embedded within many healthcare applications throughout the healthcare continuum. These systems include, but are not limited to, inpatient and outpatient EHR systems (including those that provide a patient portal), ePrescribing applications, hospital and retail pharmacy systems, payer systems supporting functions such as formulary management and online medication claims adjudication, as well as specialty systems such as those dedicated to medication reconciliation, Emergency Departments (ED), Operating Rooms (OR), Personal Health Records (PHRs). (New uses and applications emerge on a regular basis.) We do not develop any of these systems and our core products do not have user interfaces. We develop content that describes medications, their available formulations, appropriate doses and routes, common prescriptions, potential interactions and adverse effects, among many other attributes. This encoded information is used for recording and storing patient medication history and prescriptions. The knowledge bases provide clinical screening and medication decision support, such as allergy checking, drug-drug

interactions and facilitating formulary compliance which are part of the Stage 1 HITECH initiative.

Adoption Successes of ePrescribing Thus Far

EPrescribing has made significant progress recently. Some key successes at this juncture include:

- ✘ The infrastructure is now in place and workable. This was not the case just a few short years ago. Physicians can transmit prescriptions electronically and pharmacies can receive, fill and dispense these prescriptions to patients.
- ✘ While encompassing only a small fraction of all of the prescriptions generated in the US, the *rate* of growth for electronic prescribing has been steadily increasing, as documented by SureScripts in their report on the state of ePrescribing. All indications are that 2010 will only increase that trend.
- ✘ Our direct experience confirms the overall trend of clinicians adopting ePrescribing in increasing numbers.
- ✘ Many prescribers who we interact with report satisfaction with ePrescribing, highlighting such benefits as renewing prescriptions remotely and gaining access to a more comprehensive picture of a patient's current medications and medication history.
- ✘ Financial incentives for physicians are now in place through MIPPA and the HITECH initiative, setting the stage for wide-scale adoption.
- ✘ The National Council for Prescription Drug Programs' (NCPDP) SCRIPT Standard provides a working standard for transmission of prescriptions.
- ✘ A standardized nomenclature for exchanging medication information, RxNorm, has been designated, moving the ball forward in achieving interoperability, essential to deliver on the promise of ePrescribing.
- ✘ Encoded patient medication data is pervasive throughout the healthcare continuum. These current patient medications and history exist on a vast scale in pharmacy and claims systems and, thus far, on a smaller but growing scale in EHRs (both inpatient and outpatient). These extensive datasets have a long and proven track record in serving key objectives: enabling portability of patient medication information, being advantageous for detecting potential adverse drug events, and providing utility for wide-scale data-mining. These established medication code sets are in wide use and ready to be leveraged in conjunction with ePrescribing.

Adoption Challenges for ePrescribing

As expected at this early stage in the evolution of ePrescribing and medication reconciliation, there are also a number of challenges to be tackled. Here are some of the key challenges we have observed.

- ✘ **Allergy Interoperability.** One of the promises of ePrescribing is the detection of potential allergic reactions. Appropriately, allergy checking is included in the initial criteria proposed for a certified system to qualify for the incentive payments under HITECH.

Exchange of patient allergy information remains a challenge in today's environment. Once RxNorm is tested and vetted for exchange of drug ingredients, there will be a viable path for the interoperability for allergies to individual drug ingredients.

This will not solve the widely-acknowledged problem of interoperability for allergens groups, such as when a patient is allergic to "sulfa" or "penicillins." As the stakeholders collaborate to resolve this gap, our clinical colleagues urge the participants to carefully consider the intended purpose of this knowledge. This is medication knowledge, modeled for a very specific clinical purpose. If a concept intended for another purpose, such as therapeutic classification, is identified to quickly close the gap in interoperability, the gap may be closed but the resolution may not achieve the intended goal. This is an example of one of those situations for which the "devil is in the details," and taking input from the experienced professionals in that domain will only enhance the usability and overall success of ePrescribing.

- ✘ **Communication and Reasons for Overrides.** One significant efficiency within reach of ePrescribing is the reduction of phone calls and missed connections between the pharmacy and the prescriber. These daily calls, placed by the pharmacist to clarify a prescription, alert the physician to a potential adverse event, or communicate a high co-pay or coverage denial, consume time that could be spent with patients. Simple legibility is an easy win for ePrescribing. The benefits of bringing automated clinical checking to the point of prescribing enables the clinician with the most knowledge of the specific patient circumstances to assess the risk versus benefit of the medication therapy.

Importantly, there are best practices that should be implemented to avoid confusion or rework downstream in the process. Pharmacists, the specialists in medication knowledge, will continue to assess medication appropriateness as well. The pharmacist needs to know that a prescriber was aware of a particular alert, and, if consciously overridden, the reason for the override. For instance, a message communicating that an allergy alert was overridden because the patient is tolerating the drug, or that a potential drug-drug interaction will be monitored via a lab test, preserve efficiencies and enhance the sharing of patient information that can improve care.

- ✘ **Hazards of Free Text.** The use of free text for prescription or allergy data will significantly hinder many of the near-term and long-term benefits of ePrescribing. Electronic prescriptions with free-text components compromise clinical screening and decision support. For instance, automated screening of an electronic prescription to ensure that the dose is appropriate for a pediatric patient is difficult to impossible if the unit of measure of the dose and the frequency in the directions can not be interpreted and used in calculations. This will naturally interfere with the promise of improving patient safety and patient care. Similarly, free-text data interferes with formulary compliance and switching to generics, and the expected cost savings of these practices. In the longer term, free-text components will compromise the rich set of data that electronic prescriptions can contribute to the body of evidence on outcomes, and the value that evidence will infuse into the delivery of healthcare.

- ✘ **Usability and Alert Fatigue.** Usability issues can interfere with clinician adoption. Once adopted, compromised usability can impact the value of ePrescribing not just in terms of efficiencies, but in terms of greater patient safety and overall care.

One of the widely-acknowledged challenges to both usability and patient safety is the problem of over-alerting. “Alert fatigue,” brought on by an over-abundance of alerts and reminders to the clinician can lead to important information being overlooked amongst less relevant alerts. Message overload can desensitize users so that they generally ignore alerts, and in some instances, sites have turned off alerts altogether because of the detriment to usability.

For over 25 years, our focus has been on delivering medication decision support in support of patient safety. We strongly support the drug-drug interaction and drug-allergy screening, as well as the five additional rules called for in Stage 1. Based on our extensive experience interacting with the clinical users of medication screening, we want to underscore the importance of flexibility in implementing medication screening and rules. Not all messages should be displayed in the same manner and not all are intended as interrupt-style alerts. Some messages are more appropriate as information accessible via an “info button”-type format. Users need the flexibility to fine-tune their alerts.

For liability reasons, manufacturers’ include far-reaching warnings in their drug labeling, including those with little evidence. These warnings exacerbate alert overload and frustrate clinical users across a variety of practice settings. Users need flexibility in their applications and databases to manage these cases. Refined information in the drug labeling would be helpful in ameliorating the situation as well.

If test cases are developed for either certification of systems or for demonstrating meaningful use, we want to point out a lesson-learned from a non-governmental

certification effort. Test cases for lower-significance alerts may be problematic to even advanced implementations.

- ✘ **Usability and Physician-Friendly Concepts.** Usability issues can interfere with user satisfaction which can hinder the goals of ePrescribing. Excessive clicking and scrolling, and information spread across multiple screens, has been a frustration point for physicians users. Many physicians have reported their frustration with the 140-character limitation for transmitting prescriptions. The work-arounds are not adequate and pose a patient safety risk, especially for multi-part orders such as a steroid taper.

Lessons learned in the inpatient environment dictate that physicians should only be required to enter information that is appropriate to their domain, and not that of the pharmacy. They should be able to create prescriptions using familiar, physician-friendly conventions and concepts. For example, pediatricians need to be able to order in weight-based doses and will benefit from automated calculations.

Outpatient prescriptions need to be easily converted to inpatient orders and visa versa in order to streamline the onerous process of medication reconciliation and eprescriptions can support this functionality. ePrescribing can streamline writing discharge prescriptions, especially when inpatient orders can be leveraged, addressing a physician pain point from the paper world.

- ✘ **Medication Interoperability.** Once RxNorm is vetted in real-life scenarios for exchanging drug information amongst systems, many interoperability challenges may be alleviated. It is imperative that RxNorm be tested in live conditions.
- ✘ **State-by-State Scheduled Drugs and Workflow.** Handling DEA scheduled drugs poses a challenge for the ePrescribing workflow. Others have described the issues effectively, so we will only make note of one additional detail here. Currently, an ePrescribing system can not even notify the clinician-user that she must rely on an alternative method for prescribing a scheduled drug. The designation of a scheduled drug varies from state to state and there is no single, authoritative source for all drugs in all locales. Our user base has reported this pain point extensively.

We would like to thank the committee once again for the opportunity to contribute to the discussion today. One of the key goals of ePrescribing, advancing patient medication safety, has long been First DataBank's mission as well. We look forward to collaborating with the government and other stakeholders in the interest of that goal.