

Partnership Update

January 26, 2018

Data Snapshot: Clinical Decision Support and Medication Safety — It Can Start with Dispensing

Background

Technology provides an opportunity for support of clinical decision-making, including support mechanisms related to drug safety. These take the form of flags and alerts for duplicate medications, patient allergy alerts for medications, and alerts for clinical conditions and dosing precautions.

In the acute-care setting, automated dispensing cabinets (ADCs) with expanded software provide drug safety alerts, tracking capabilities, telepharmacy¹ connections for after-hour drug verification, and integrated refills. Like any clinical decision support, the information is only useful if not disregarded. In this Data Snapshot we looked at how frequently ADC overrides occur, and what types of information are commonly overridden.

¹ Grissinger M, Cohen H, Vaida AJ. Using technology to prevent medication errors. In: Cohen M, ed. Medication Errors. 2nd ed. Washington DC: American Pharmacists Association; 2007:413.

Events Reviewed

In analyzing patient safety events from February through August 2017, there were 189 events identified involving an override of an ADC. These events resulted in delays in medication administration, emergency medications not being readily available, incorrect medications, or incorrect strengths or dosages dispensed. Selected examples follow:

- *A patient, not yet registered, presented to the Emergency Room with active seizures. The physician ordered lorazepam. With no way to yet associate this medication to the patient, the nurse removed the medication from the cabinet under another patient's name. No automated tracking or clinical alerts were then available for the new patient.*
- *A patient was transferred from the PACU [postanesthesia care unit] to the medical/surgical unit. The physician ordered ketorolac for the patient as continued therapy. Ketorolac was removed from the ADC via override because pharmacy had not yet reviewed medications for this patient after the transfer. However, ketorolac was contraindicated for this patient due to renal impairment, demonstrated by creatinine clearance lab results.*
- *The physician ordered levothyroxine 0.150 mg with specific instructions—give two levothyroxine 0.075 mg. The medication was removed from the ADC by an override but only one tablet was removed.*
- *The respiratory therapist contacted pharmacy to inform them that they were unable to remove respiratory medications from the ADC. The medications were “grayed” on the patient's profile, which resulted in the inability to select that medication for the patient. To obtain the medication, the respiratory therapist overrode the ADC using the “Patient Specific Fridge” option to access the medication.*

Contributing Factors

- Overrides of safeguards programed into ADCs occur for reasons including time constraints, need for emergency administration, incorrectly identified patients, workflow impediments, distractions, and inattention to the information presented.
- ADC-assisted decision-making not only improves tracking, charge capture, and security, but it helps support safe administration particularized to the patient. Consider the effectiveness of each safety mechanism, because overrides show that the benefits of the technology are not being fully realized.

Lessons Learned

Like other health information technology (IT) solutions, careful consideration in planning, testing, implementation, and upgrades of ADC software should be taken. After implementation, ongoing monitoring of usability and effectiveness of clinical decision support provided should be measured. Evaluation of the support must occur on a regular basis to ensure that the most up-to-date information is available to optimize the technology's benefits.

Additional Resources

The Institute for Safe Medication Practices (ISMP), a collaborating organization of the *Partnership*, issued guidance on the use of ADCs in its *Guidance on the Interdisciplinary Safe Use of Automated Dispensing Cabinets* (ISMP 2008). One of the core elements (#9) is to establish criteria for ADC system overrides.

The following documents are available from ISMP:

- [ISMP Medication Safety Self Assessment® for Automated Dispensing Cabinets](#)
- [Guidance on the Interdisciplinary Safe Use of Automated Dispensing Cabinets](#)

Important Announcements

SAVE THE DATES in 2018 for Partnership Meetings

The *Partnership* for Health IT Patient Safety gathers stakeholders quarterly. Three of these meetings occur via web conferencing, and the fourth is the annual in-person meeting. The first web conferencing meeting took place on Tuesday, January 23rd at 3pm ET. The remaining *Partnership* meeting dates are:

- April 24, 2018
- July 24, 2018
- In-person meeting October 24, 2018

Mark your calendars. We hope to see you there!

Partnership and Health IT News Recap

2018 Messaging Workgroup

Janet Marchibroda, MBA, Bipartisan Policy Center, chairs the messaging workgroup. After establishing workgroup goals and identifying key stakeholders, the workgroup looked at successful messaging campaigns including lessons from the following: To Err is Human (patient safety), Click it or Ticket (seatbelts), Don't Mess with Texas (littering), and various slogans to promote water conservation (e.g., in laundering hotel towels). Learning from these campaigns, the *Partnership* seeks to identify its best messaging strategies.

The remaining meetings take place from 12:00 - 1:00 pm ET on:

- February 7, 2018
- February 21, 2018

Additional discussion for 2018 Workgroup topics was contributed at the January quarterly meeting. Please provide input to hit@ecri.org.

Expert Advisory Panel

David W. Bates, MD, MSc
Kathleen Blake, MD, MPH
Pascale Carayon, PhD
Tejal Gandhi, MD, MPH
Chris Lehmann, MD
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Hardeep Singh, MD, MPH
Dean Sittig, PhD
Paul Tang, MD, MS

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Safety Sources:

- The initiative, Safe Practice Recommendations for Developing, Implementing, and Integrating a Health IT Safety Program, is in final production stages. Your comments and contributions were appreciated.
- Health IT Safe Practices for Closing the Loop, Mitigating Missed, Delayed, and Incorrect Diagnoses Related to Diagnostic Testing and Medication Changes is in draft and should be forthcoming for review in the first quarter of 2018.
- *Partnership* collaborating organization Institute for Healthcare Improvement/National Patient Safety Foundation (IHI/NPSF) has finalized and released a nine-step process for [Closing the Loop: A Guide to Safer Ambulatory Referrals in the EHR Era](#). Importantly, this work summarizes what was learned from a multistakeholder group focused on understanding this process and its potential failure points. Recommendations and action steps are included to standardize how referrals are initiated and tracked over time to ensure that the loop is closed.
- The Office of the National Coordinator for Health Information Technology (ONC) recently released the Patient Demographic Data Quality Framework ([PDDQ Framework](#)) to help organizations improve patient safety by accurately and consistently matching patient data internally and between organizations.
- The *Partnership* played a key role in identifying the need for a health IT developer culture-of-safety assessment by recognizing that safety excellence involves assessing the current safety climate and culture prior to strengthening and embedding safety as a priority.
- The *Partnership's* 2017 annual report contains information about important events from 2017. Learn about the Transformation Summit, safety recommendations, and learnings from the 2017 in-person meeting—transforming health IT by embedding safety. Watch your mailbox for announcements.

Partnership Safe Practice Recommendations and resources are publicly available at www.ecri.org/safepractices.

Collaborating Organizations



Working Together:



Need to Submit an Event?

Partnership participants can submit events through your [membership portal](#).

If you need assistance, please contact us at hit@ecri.org.

Get in Touch with the Partnership

Do you have questions about any of these articles? Get in touch with us today by e-mailing hit@ecri.org. If you wish to submit information for this publication, please submit items for the Update using the subject line "*Partnership Update*" to hit@ecri.org.

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