Partnership Update

August 2018

Data Snapshot: Closing the Loop on Electronically Prescribed Medications That Have Been Discontinued

Background

Electronic prescribing systems (i.e., computerized provider order entry [CPOE] and e-prescribing) can intercept errors at the time medications are ordered, improve communication between physicians and pharmacists, and can be effective in reducing the rate of serious medication errors. Other benefits include legibility, tamper-proof prescriptions, interoperability through direct transfer to a pharmacy, clinical decision support (CDS) triggers/alerts, and patient convenience.

However, one type of error associated with electronic prescribing is infrequently addressed, and that is the unintended dispensing of discontinued medications Copi et al., 2018. The case study event described below was submitted under the protection of the ECRI Institute PSO and reviewed by patient safety analysts for shared learning.

Case Study Event

A patient was taking oral potassium for a cardiac condition. The patient's recent lab results indicated an elevated potassium level, necessitating a change in the current prescription. The physician discontinued the patient's oral potassium in the electronic health record (EHR). However, this information did not transfer to the pharmacy. The pharmacy was not notified to discontinue the medication, which was due for renewal. The oral potassium prescription was automatically refilled and the patient was notified by the pharmacy to pick it up. The patient continued on the medication as before. It was only at the patient's next office visit—when the lab work indicated an elevated potassium level—that the provider became aware that the patient was still taking the oral potassium in error. The patient did not experience adverse consequences, but there was potential for serious harm, such as muscle weakness, cardiac conduction abnormalities, and cardiac arrhythmias.

This event illustrates the need of ensuring that discontinued or revised medication prescriptions entered into the EHR are not unintentionally dispensed and that the information is communicated to both the pharmacy and to the patient.

Contributing Factors

The ordering provider might have been unaware of the limitation of electronic transfer of information to the pharmacy. This provider might not have known that canceling or changing the prescription in the EHR did not automatically send a communication to the pharmacy. Lack of an implemented electronic transmission/message from the EHR to the pharmacist and pharmacy system regarding the discontinued prescription, before or after order verification, likely contributed to the failure to close this loop.

Lessons Learned

Closing the loop ensures that patient data and information that may require an action is delivered and communicated to the right individuals, at the right time, through the right mode, to allow interpretation, critical review, reconciliation, initiation of action, acknowledgment, and appropriate documentation. The *Partnership's* closing the loop workgroup addressed provider-initiated medication changes and identified safe practices in three areas—communication, tracking, and linking of this information.

For changes in the patient's medication regime, such as in the above event, the following safe practice recommendations might have mitigated the failure to close this loop. Knowing that the previous prescription was cancelled or even knowing that the patient had picked up the prescription would have alerted the provider that a potential problem existed. Consider implementing the following recommendations to close the loop on changes in medications to ensure patient safety:

1. NCPDP SCRIPT (e.g., CancelRx) as a standard to ensure communication of electronic discontinuation of a prescription to the pharmacy, acknowledgement by the pharmacy, and automatic discontinuation of renewals.

2. NCPDP (e.g., RxChange) as a standard to improve communication between the pharmacy and the prescriber, including change requests and clarification requests for any prescription.

3. NCPDP SCRIPT for fill status notification (e.g., RXFILL) from the pharmacy to the prescriber to notify the prescriber of the status of a prescription. NCPDP version 10.6 allows the standard to be patient specific, thereby eliminating an overabundance of notifications.

Conclusion

Awareness of system interoperability and what information can be exchanged remains important. Having a feature in one EHR does not ensure that information is always visible in another system. As such, it is important to identify the potential areas for missing information and failures to close the loop. The safe practices are available online at Health IT Safe Practices for Closing the Loop. (See page 9 for medication change communication strategies.)

Important Announcements

Partnership News

The *Partnership*'s latest toolkit, Health IT Safe Practices for Closing the Loop, was officially launched on July 26th.
The Closing the Loop workgroup, chaired by Dr. Christoph U. Lehmann, identified ways that technology can mitigate the safety issues surrounding the "Failure to Close the Loop" that compromises safe and timely care. Materials to implement these safe practices are available at the above link.

NEW Podcast Series: Closing the Loop, Hear What the Experts Have to Say
Help us get the word out about closing the loop by sharing podcast materials. Part one of our three-part podcast series—featuring workgroup leaders Dr. Christoph Lehmann, Dr. Hardeep Singh, Mark Segal, Dean Sittig, Patricia Giuffrida, and Robert Giannini—is available.

In part 1, Diagnostic Error and the Importance of Closing the Loop, experts begin their discussion by considering "What is the importance of closing the loop?" Hear where the potential pitfalls lie and how these challenges can be addressed through technology. Podcast materials and additional resources are available at www.ecri.org/safepractices.

Here is an opportunity to show your support
Support the recent safe practice recommendations by expressing your support using one of the links below; then share the materials with others. Watch for additional podcasts and recommend that others hear what the experts have to say.

Please use the appropriate link below to indicate your support of this work:

- My Organization Supports the Health IT Safe Practices for Closing the Loop
- I Support the Health IT Safe Practices for Closing the Loop

Workgroup Updates

The Drug Allergy Interactions (DAI) Workgroup has focused on identifying health IT recommendations for capturing and transmitting information related to drug allergies. It is important to ensure that the right information is presented to the right person with the appropriate CDS intervention format and that this occurs in the most appropriate time in the workflow. We have gained insight into this issue. The last meeting is scheduled for September 20, 2018. Safe practice recommendations will be discussed at the October 24, 2018, in-person meeting.

The Electronic Health Record Association (EHRA) Safer Opioid Prescribing Project has focused on identifying current and future CDS interventions and types of measures that can be incorporated to support safer opioid prescribing. This workgroup has met monthly throughout the spring and summer with the last meeting scheduled for September 6, 2018. We will share what we have learned from this workgroup at the upcoming in-person meeting on October 24, 2018. We hope to see you there!

Implementing Health IT Safe Practices

Not only is it important to develop safe practices, but implementing safe practices to make care safer for all is the ultimate goal. It is only then that safe practices' effectiveness can be assessed and measured. If your practice/organization has implemented any of the *Partnership*'s health IT safe practice recommendations, we would like to hear from you. Please let us know what your experience has been. Did you have a difficult time implementing these practices? Have you been successful? How did you measure your successes? E-mail your responses and questions to hit@ecri.org.

Partnership Meetings

The third quarterly meeting was held via web conference on July 24, 2018. If you were unable to attend, a recording is available on the *Partnership's* quarterly meetings website.

SAVE THE DATE:

The annual in-person meeting will be held at the ECRI Institute headquarters in Plymouth Meeting, PA on **October 24, 2018**. This is the only face-to-face meeting of the year. Expect updates on the 2018 workgroups, new breakout sessions, a look at data's impact on safety, and much more. We hope you will attend!

Expert Advisory Panel

David W. Bates, MD, MSc
Kathleen Blake, MD, MPH
Pascale Carayon, PhD
Tejal Gandhi, MD, MPH
Chris Lehmann, MD
Peter J. Pronovost, MD, PhD
Daniel J. Ross, MD, DDS
Jeanie Scott, MS, CPHIMS
Patricia P. Sengstack, DNP, RN-BC, CPHIMS
Hardeep Singh, MD, MPH
Dean Sittig, PhD
Paul Tang, MD, MS

The *Partnership for Health IT Patient Safety* is sponsored through funding from the Gordon and Betty Moore Foundation.

Collaborating Organizations

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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