



Partnership Workgroup Update:

Partnership Workgroup 3, on Developing, Integrating, and Maintaining a Health IT Safety Program, continues to meet. The next workgroup meeting is July 19 at 12 p.m. ET.

Participate in Partnership Workgroup 4, Using Health Information Technology to Close the Loop and Mitigate Delayed, Missed, and Incorrect Diagnoses. Meetings are July 11, August 15, September 19, and October 17 at 10 a.m. ET.

For more information, contact the *Partnership* at hit@ecri.org.

SAVE THE DATES:

Partnership Quarterly Conference Call

Tuesday, July 25, 2017

3:00 to 4:00 p.m. ET

[Register here](#)

Partnership Annual In-Person Meeting

Wednesday, November 15, 2017

- Workgroup recommendations and toolkits
- Breakouts
- Looking ahead at implementation projects
- Preparing for 2018 safe practices

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
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 in part through a grant from the Jayne Koskinas Ted Giovanis Foundation (JKTG) and in part through funding from the Gordon and Betty Moore Foundation.



Partnership convenes Transformation Leadership Summit at the Bipartisan Policy Center, Washington, D.C., May 23-24



The *Partnership*, with funding from the Gordon and Betty Moore Foundation and the generous offer of space provided by the Bipartisan Policy Center, brought together a stellar group of individuals from healthcare and other industry to discuss organizational transformation and sustainability as the *Partnership* prepares for its next phase.

This two-day meeting not only covered the basics of transformation, but also challenged the *Partnership* to engage stakeholders in new and unique ways, committing everyone to a challenge for health information technology (HIT) safety that is impossible to argue against.

Data Snapshot: Double Vision - Duplicate Orders

Computerized Provider Order Entry (CPOE) with Clinical Decision Support (CDS) – Duplicate Orders

Case study:

The intake RN ordered a chest x-ray (CXR) as per protocol in the Emergency Room (ER) prior to the patient being triaged. The exam was ordered at 2050 and completed. A second CXR was ordered by the triage RN at 2128. The radiology technologist, unaware that the patient already received a CXR, completed the film before realizing that this CXR was actually a duplicate order.

Background

Duplicate orders (“duplicates”) are two or more active orders for the identical healthcare intervention. Duplicate orders, which can occur when ordering medications, diagnostic testing, therapy or treatment, are an example of a preventable use error with significant effects on patient care. The Office of the National Coordinator SAFER Guide recognizes duplicate orders as a patient safety risk and recommends duplicate order checking be performed for high-risk medication, diagnostic tests, and procedure orders (excluding “as needed” [PRN] medications).

Events Reviewed

In a review of almost 300 events that involved duplicate order entry, analysis of the order types revealed that the majority of events (208; 73%) involved ordering medications. The other order types included the following: laboratory testing, 42 (15%); imaging testing, 5 (2%); blood bank orders, 4 (1%); pathology testing, 2 (1%); and “other” orders, 8 (3%). Order sets were used in 15 (5%) of the events.

Failure points in the ordering process were identified when reviewing the events. Twenty-one percent of the total events reviewed occurred in the order verification process. These included instances in which the order was not verified by the receiving department because it was bypassed, ignored, or not completed or it went through an automated verification process. In 5% of the events, an alert was ignored or did not function as expected at the time of ordering. Three percent of the events involved more than one route of administration, and 1% of the events involved a computer system interface issue.

Follow-up to the events resulted in the following interventions to prevent the error from reaching the patient or continuing to occur. In 43% of the events, 32% were cancelled or clarified, some of the orders (10%) were cancelled by a staff member or automatically by the computer system, and 1% of the orders were placed on hold.

Duplicate orders can negatively affect patient safety. In 13% of the events, a patient received an extra medication, test, or treatment; in 5% of the cases, the patient missed a medication, test, or treatment; and 1% revealed that a product or medication was wasted. In 7% of the cases, other outcomes were identified, such as specimen quality.

Contributing Factors

In the above case study, orders were placed by two different healthcare personnel serving different roles in a short time frame, and the receiving department was unaware of the duplication.

Contributing factors affecting duplicate orders include provider ordering practices and computer availability, for example, two orders placed within minutes by different providers on rounds, and communication and hand-offs, for example, duplicate orders around shift change. Computer decision support (CDS) and medication database design can contribute to errors, for example, with confusing alert content, high false-positive alert rate, and CDS algorithms missing true duplicates. Other factors are computer physician order entry (CPOE) data display, such as difficulty reviewing existing orders, and local CDS design, for example, medications in order sets defaulted as ordered.¹

Health IT-related risk factors identified in the analysis, using the Agency for Healthcare Research and Quality’s [HIT Hazard Manager](#) ontology, include the following:

Usability – information hard to find, confusing information display, mismatch between real workflows and HIT, mismatch with user expectations, inadequate user feedback; *Data Quality* – discrepancy in displayed, printed, or exported data and faulty reference information; *Decision Support* – excessive nonspecific recommendations and alerts, missing recommendation or safeguard, inappropriate level of automation; *Vendor Factors* – faulty vendor configuration recommendation, faulty software design; *Local Implementation* – faulty local configuration or programming, inadequate testing; and *Other Factors* – inadequate training, compromised communication among clinicians, unclear policies.

[1] Wetterneck TB, Walker J, Blosky MA, et al. Factors contributing to an increase in duplicate medication order errors after CPOE implementation. *J Am Med Inform Assoc* 2011 Nov-Dec;18(6):774-82.

Lessons Learned

CPOE with CDS for duplicate orders, when thoughtfully implemented, can have a positive effect on health outcomes and healthcare delivery. Duplicate orders are preventable when there is clear communication among team members and when documentation and staff roles are defined, creating overall situational awareness. Organizations should also evaluate order sets as a potential source of duplicate-order creation. The overall lesson is that information (treatments, tasks, tests) to provide safe patient care can be enhanced with the use of CDS tools.

Organizations should assess the impact of health IT hazards related to duplicate orders using the Office of the National Coordinator's [Computerized Provider Order Entry with Decision Support SAFER Guide](#).

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* – We’re hiring!

ECRI Institute is hiring for the *Partnership*. Go to our website at www.ecri.org/careers.

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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