Data Snapshot: Safe Use of EHR Screening Assessment Tool Algorithms

Background

In the electronic health record (EHR)-enabled healthcare environment, busy clinicians rely on clinical decision support technology to support and manage a variety of patient screening and assessment processes that incorporate algorithms that can automatically trigger an order for a consultation (e.g., nutrition, pastoral care, social services). For an algorithm to process correctly within the EHR, clinicians need to know which data element(s) on the screening or assessment tool, when documented, will trigger an intervention, such as automatically creating and sending an order requisition within the EHR (e.g., the nurse knows that if he or she documents a patient’s nutritional findings on the admission assessment form that indicate difficulty with chewing or swallowing, a poor appetite, or recent weight loss greater than 10 pounds without trying, an order requisition for a nutritional consult to occur within 24 hours will be created and sent automatically, and the patient’s admitting physician will be notified that an order for consult was sent).

Here we review a safety event submitted under the protection of ECRI Institute PSO and reviewed by patient safety analysts for shared learning.

Case Study Event

While performing the admission assessment, the nurse documented a patient’s nutritional findings on the Malnutrition Screening Tool (MST) [a rubric that care providers use to quickly assess a patient’s risk of malnutrition] in the EHR.

To facilitate data collection, the form provides weighted numerical values for responses related to weight loss, poor eating, and decreased appetite that are added to calculate a risk score and checkboxes for data elements related to units of measure for weight (pounds, kilograms) and existing therapeutic feedings.

Because the checkbox for weight loss in pounds was not checked, the MST score did not calculate correctly. The nurse did check the box for an existing therapeutic feeding, which they believed should have generated a nutritional consult. However, it did not.

Failure of the automatic electronic consult notification process delayed the nutritional assessment of the patient. The nurse thought there was a problem with the screening form and notified the help desk to request that a ticket be submitted to review the issue.

Contributing Factors

Failure to complete the intended intervention of the designed algorithm within the MST (i.e., entering and sending an order requisition for a nutritional consult) may have occurred for the following reason:

- Failure to provide sufficient hands-on computer training and staff education prior to go-live that clearly identified which data elements on the MST, when documented, would trigger an order for the appropriate consult, and which data elements on the MST were mandatory to trigger the consult.

Other contributing factors to consider include the following:
A poorly designed algorithm or user interface
- Insufficient system integration testing of the MST data elements and algorithm prior to go-live in the production system by clinicians who understand the workflow using real-world testing scenarios to ensure that data capture, algorithm, and the order requisition process performed as expected
- Lack of monitoring the algorithm performance after go-live to ensure that its intended design and downstream functionality of triggering a consult order work as they should every time

Lessons Learned

Patient treatment delays can be minimized when health information technology is used safely. Screening assessment tools that incorporate a clinical decision support algorithm that automatically triggers a consult order provide support to busy clinicians and can efficiently expedite patient care, but only when they are designed, tested, and function as intended.

Important Announcements

Partnership News

Annual Report

The year 2018 was incredibly productive for the Partnership. The annual report contains information about all the important events that occurred last year including lessons from the October in-person meeting (Collaboration: Building a Path to Sustaining Health IT Safety). You can access the report on the Partnership members’ site.

Would You Like to Improve Your Test Result Tracking?

The Partnership is looking for additional participants to take part in an implementation workgroup that will take place during the upcoming spring and summer months. The workgroup will help participants implement recommendations from the Health IT Safe Practices for Closing the Loop toolkit through various web-based meetings and outside work. The focus is test result tracking in the ambulatory setting, but others are not excluded. Participation will include identifying changes that can be made to your current practices, identifying particular implementations to undertake, identifying a measure of success to track, carrying out implementations, collaborating with other participants, and sharing lessons learned. Please contact hit@ecri.org to indicate your interest in participating.

Podcasts

Our latest podcast, Integrating a Health IT Safety Program, is available on the Partnership website. This podcast discusses how one organization used the toolkit to develop their health IT safety programming. Listen to learn more about their initiatives, steps taken, and tools that facilitated their planning. You can also access recommendations and implementation toolkits for developing, implementing, and integrating a health IT safety program.

Workgroup Updates

The Partnership, together with the Healthcare Information and Management Systems Society (HIMSS) Electronic Health Record Association (EHRA), has released new guidance for safer opioid prescribing through EHRs. This

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.
workgroup brought together experts from companies that develop, market, and support EHRs to develop strategies to support clinicians with pain management decisions at the point of care.

The Drug-Allergy Interactions Safe Practice Recommendations toolkit, which will also include an evidence-based literature review, will be released soon. Watch your mailbox for an announcement.

**Reminder: 2019 Dates for Upcoming 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. We look forward to joining you on the dates and times below. Before each meeting, you will receive registration and web conference access information via email.

The remaining meeting dates are:

- **Web-based quarterly meetings:**
  - April 23, 2019, 3 to 4 p.m. eastern
  - July 23, 2019, time to be determined

- **Annual, in-person meeting:**
  - September 12, 2019

The presentation and recording of the *January quarterly meeting* are available on the membership website.

**We Want to Hear from You**

It is important not only to develop safe practices, but also to implement them. To assess and measure their effectiveness, we need your help in learning how these practices have enhanced safety within your organization. If your organization or practice has implemented any of the *Partnership's* health IT safe practice recommendations, we would like to hear from you.

What has your experience been? Have you been successful? Did you have difficulty implementing these practices? How did you measure the outcomes? Start the conversation by emailing your responses and questions to [hit@ecri.org](mailto:hit@ecri.org).

**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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