

Partnership Update

June 2018

Data Snapshot: Mitigating the pitfalls that can arise with upgrades

Background

Upgrades have the potential to disrupt patient care. For example, upgrades may necessitate downtimes (both scheduled and unscheduled), loss of previously functioning workarounds, and potential changes to existing parts of the system (appearance, functionality).

An upgrade is the installation of new code with the goal of fixing existing issues or providing improved functionality. Upgrades are also key in keeping the system up to date with the latest changes in regulatory and accreditation requirements, as well as the latest safeguards from security vulnerabilities.

Planning for and testing before and after the upgrade is a necessity. Preoperational testing involves ensuring that the software that worked effectively and efficiently in the test environment still operates the same way in the production environment. Post-operational testing is done after the upgrade to confirm both the changed and unchanged functions perform as expected.

Events Reviewed

The events reviewed, submitted to ECRI Institute PSO, highlight the need for the pre- and post-testing of health information technology (IT) upgrades:

- The patient was receiving saline and potassium solution via an intravenous (IV) drip. After reviewing the lab results, the physician determined the saline drip needed to be continued without potassium. The system downtime necessitated by the upgrade required the new medication order to be placed manually. When the system became available, the old medications remained in the patient's queue. There was no indication of the active medications received since the last nursing handoff, and the IV with saline and potassium was hung. The patient's family noted the wrong solution and notified the nurse.
- Due to a setting in the physician's profile, the lab results were not being forwarded to the physician's in-basket since the upgrade. The physician had a workaround in place and did not report this as a problem. The issue was later discovered when the lab results were found in an error queue.
- The physician came to see the patient for a consult of an abnormal MRI [magnetic resonance imaging scan]. The physician attempted to look at the MRI of the brain images in the medical electronic record (EMR) and in the picture archiving and communication system (PACS). In place of the MRI images were a copy of the admitting orders and the label for the MRI of the brain with the patient's name. The MRI report was also available. This had happened before during PACS downtime.

Contributing Factors

Upgrades are needed when new functions are added or improvements are made to the software. Because upgrades alter the functionality of the software, the lack of all-encompassing testing can be harmful to patient care.

Additional factors that may have contributed to the outcomes in the events reviewed included interrupted flow of information within the system, altered provider's workflow, and nonfunctional interoperability and integration with other systems.

Issues such as these, along with inadequate notification and information about the change shared with affected internal and external parties, may impede timely, quality care. It is important to provide training to staff that encompasses the impact new functions may have before, during, and after the upgrade.

Lessons Learned

To limit disruptions to patient care, the functions altered by the upgrades need to be planned for and tested. Users should be made aware of changes to the system. The testing should take place before and after the upgrades.

These tests need to address functions affected by the upgrade, any workarounds, and customized functions of the system. In addition, the interaction with other systems (e.g., PACS) must be tested to ensure that systems are working together properly.

Resources

The Office of the National Coordinator for Health Information Technology (ONC) offers SAFER Self-Assessment Guides for [System Interfaces](#) and [System Configuration](#), which provide worksheets for risk assessment, suggested sources of input, and sample test scenarios.

In addition, ONC's [Health IT Playbook](#) offers electronic health record (EHR) tools and resources, including the [Electronic Health Record \(EHR\) System Testing Plan](#). The testing-plan template is a foundation for vendors and customers to create test plans specific to the upgrade and the needs of their organizations.

Conclusion

Upgrades have the potential to disrupt patient care. These disruptions can show up as an interruption of data flow, lack of communication with other systems, or alteration of healthcare provider workflows within the system. To minimize the potential to upset patient care, the new functions introduced by the upgrade need to be tested.

Important Announcements

As you know, the Partnership is continuing to examine how to evaluate health IT safety issues more expansively and sustainably. One suggestion has been to enlarge the types of data evaluated. We would like to know more about the types of data that you find valuable; what other sources of data you have found useful; and any suggestions you may have for gathering and analyzing data submitted to a national collaborative. The goal of a national collaborative is to prioritize safety issues using evidence based investigation and data. Please contribute your thoughts by completing [this survey](#).

ECRI Institute PSO Webinar
Discharge Documents: How Well Do They Support Care Coordination?
Thursday, July 19, 2018
1:30-2:30pm (Eastern Time)

[Please Register Here](#)

Program Description:

Have you reviewed your organization's discharge documents lately? Patient-oriented discharge documents are sometimes the only information that outpatient physicians receive after a patient's inpatient stay. Do your discharge documents meet provider needs as well as patient needs? This webinar will provide guidance on how to evaluate your discharge documents to better support care coordination and to be more usable by patients and caregivers.

Presenters:

Polly Tremoulet, Human Factors Scientist, ECRI Institute Health Devices Group
Erin Sparnon, Engineering Manager, ECRI Institute Health Devices Group

Application will be made for 1.0 nursing contact hour through our California state nursing contact hour provider. In order to be eligible each attendee must log on separately.

Partnership Workgroup Update:

The Clinical Decision Support – Drug Allergy Interactions workgroup is progressing toward its goal of using health IT to improve drug-allergy interactions (DAIs). The group is identifying optimal health IT–related recommendations for capturing and transmitting information, to ensure the right information is presented to the right person in the appropriate clinical decision support (CDS) intervention format at the most appropriate time in the workflow. The group has continuing meetings set for July 19, August 16, and September 20.

The EHRA/ECRI Opioid Safety Workgroup is focused on safer opioid prescribing using CDS and measures that can be incorporated into the EHR. This group continues to meet monthly through September 2018.

Important Announcements

SAVE THESE DATES in 2018 for Partnership Meetings

The Partnership for Health IT Patient Safety gathers stakeholders quarterly. Three of these quarterly meetings occur via web conferencing and the fourth is the annual in-person meeting. The remaining 2018 Partnership meeting dates are:

Mark your calendars because we hope to see you there!

- July 24, 2018
 - Workshop updates, including data and evidence review
 - Dissemination campaign for the closing the loop toolkit
 - Planning for the in-person meeting on October 24, polling questions, and discussion

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

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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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