Introductions

- Bill Marella, MBA, MMI, Executive Director, PSO Operations and Analytics, ECRI Institute
- Lorraine Possanza, DPM, JD, MBE, Senior Analyst, HIT Liaison, ECRI Institute
- Patti Sengstack, DNP, RN-BC, CPHIMS, Chief Nursing Informatics Officer, Bon Secours Health Systems
Session Objectives

- Identify top safety concerns reported to the Partnership for Health IT Patient Safety
- Apply multi-stakeholder generated Health IT Safe Practices
- Define ways to establish a culture of health IT safety

Make Care Safer Together

Let’s Take a Quick Poll

Question 1:
Has your EHR been associated with adverse events?

a) Yes
b) No
c) Unsure
Why are we here?

Error in weight-based dosing

- Patient death from Lovenox overdose
- Weight available to pharmacy came from nursing admission notes rather than the field in which the patient’s weight is continuously updated during hospitalization
- Significant weight loss during lengthy admission

Why are we here?

Auto-Selected Dosages

- Provider begins to enter medication dose. Typed “10” for 10 MG dosage.
- Highlighted list appears, software auto-selected “100.”
- The provider selects the highlighted dosage.
The Landscape – Is it Safe?

Partnership Goals

Making Health IT Safer Together by:

► Establishing a non-punitive environment for sharing and learning
► Testing a collaborative model for collecting and analyzing safety issues
► Achieving robust stakeholder engagement
► Sharing best practices and lessons learned
► Informing the national safety strategy for health IT
A Multi-Stakeholder Collaboration
Partnership Expert Advisory Panel

- David W. Bates, MD, MSc, Brigham and Women’s Hospital
- Kathleen Blake, MD, MPH, American Medical Association
- Pascale Carayon, PhD, University of Wisconsin-Madison College of Engineering
- Tejal Gandhi, MD, MPH, National Patient Safety Foundation
- Chris Lehmann, MD, Vanderbilt University Medical Center
- Peter J. Pronovost, MD, PhD, The Johns Hopkins University School of Medicine
- Jeanie Scott, MS, VHA Office of Informatics and Analytics/Health Informatics
- Patricia P. Sengstack, DNP, RN-BC, CPHIMS, Bon Secours Health System, Inc.
- Hardeep Singh, MD, MPH, Michael E. DeBakey VA Medical Center and Baylor College of Medicine
- Dean Sittig, PhD, The University of Texas Health Science Center at Houston, School of Biomedical Informatics
- Paul Tang, MD, MS, Palo Alto Medical Foundation, Sutter Health

Partnership Activities: 2013-2016

- Design guiding principles 2013
- Recruit stakeholders 2013-2014
- Establish Expert Advisory Panel
- Implement web-based reporting system
- Convene quarterly conference calls 2014
- Convene copy and paste workgroup 2015
- Hold 2014 face-to-face meeting and publish proceedings
- Obtain funding
- Disseminate information from data analysis
- Collect and analyze data
- Conduct evidence scan, analyze data
- Identify safe practices; develop implementation tools
- Seek endorsement for safe practices 2015
- Hold 2nd face-to-face meeting; publish proceedings
- Disseminate safe practices with help of collaborating organizations 2016
- Convene workgroup on patient identification
- Develop HIT safe practices for PT ID; develop toolkit 2016
- Prioritize; disseminate
- Testing of copy and paste recommendations by NIST
- Analysis of copy and paste safe practices
- Conduct evidence scan, analyze data
- Identify next topics
- Establish workgroups; testing partners; and projects
- Prioritize; disseminate
- Engage, Exchange, Analyze, Prioritize, Develop, Disseminate, Implement, Monitor

Obtain additional funding
- Hold 3rd face-to-face meeting; publish proceedings
- Identify next topics
- Establish workgroups; testing partners; and projects
- Prioritize; disseminate

Engage, Exchange, Analyze, Prioritize, Develop, Disseminate, Implement, Monitor
GOAL: SUSTAINABILITY

Examples of Health IT Hazards

1. Indiscriminate use of copy and paste
2. Patient misidentification
3. Errors in weight-based drug dosing
4. Poor data integrity
5. Handling of allergy data
6. Poor usability: leading contributing factor among HIT reports
7. Missing safeguards: leading factor in CDS events
8. Mismatched configuration & workflow
9. Mishandling of timed medication orders: duplicates & omissions
10. Truncation of information on display
Usability Issues

- Confusing information display
- Mismatch between workflows and HIT
- Mismatch with user expectations
- Difficult data entry
- Inadequate user feedback
- Information hard to find
- Sub-optimal support of teamwork
- Excessive demand on human memory


Copy and Paste

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Risks and Benefits of Copy and Paste

Patient Safety Risks
- "Note bloat"
- Compromised data integrity
- Challenging for EHR users to identify relevant clinical information
- Impaired effective communication
- Potential diagnostic bias
- Regulatory concerns

Benefits
- Time saving
- Efficient capture of complicated data
- Improved tracking of multiple problems on highly complex patients
- Continuity of medical decision-making
- Completeness of encounter documentation
- Reduced transcription error

How Often Does Copy and Paste Occur?

Self Reported Use
- 66% of Northwestern medical students copied their own notes frequently or nearly always (Heiman et al. 2014)
- 90% of physicians use to write daily inpatient notes; 78% use always or most of the time (O’Donnell et al. 2008)
- 81% of copy/paste users frequently copy notes from other physicians or prior admissions (O’Donnell et al. 2008)

Chart Based Studies
- 10.8% of outpatient primary care, cardiology and endocrinology notes contained copy/pasted material (Edwards et al. 2014)
- Roughly 5% of diet, exercise and weight loss counseling statements were copied from prior notes by the same author (Turchin et al. 2011)
Does Copy and Paste Cause Adverse Events?

- Review of 212,165 office visits over 1 year
  - Revealed 190 diagnostic errors resulting in unplanned urgent care within 2 weeks
  - In patient documentation around these errors, 7.4% of notes contained copy/pasting and in ~36% of these copy/pasted notes, copy/paste mistakes contributed to the diagnostic error


Consequences of Inappropriate Copy and Paste

- Note bloat
- Internal inconsistencies
- Propagation of errors
- Erroneous copying between patient charts
- Decreased Time for Clinical Synthesis
Polling Question #2

Does your org have a policy on copy and paste in the EHR?

a) Yes
b) No
c) Unsure
d) Don’t have an EHR

Organizational Responsibilities

- Only 24% of hospitals have a copy and paste policy in place
  - 2013 Office of the Inspector General

- Develop professional standards
- Specify consequences for violation
- Provide ongoing education and feedback
Documentation Responsibilities

- Accuracy
- Source attribution
- Author Responsibilities
- Brevity

Use copy and paste only in appropriate contexts

Safe Practices for Copy and Paste

- Provide a mechanism to make copy and paste material easily identifiable
- Ensure that the provenance of copy and paste material is readily available
- Ensure adequate staff training and education regarding the appropriate and safe use of copy and paste
- Ensure that copy and paste practices are regularly monitored, measured, and assessed
**Toolkit for Safe Use of Copy and Paste**

- Safe Practices
- Evidence Review
- Tools
- Resources

- Educational Handouts
- Checklists
- Policy Development Tool
- Audit Tracking Tool

Full report available at: [https://www.ecri.org/resource-center/Pages/HITPartnership.aspx](https://www.ecri.org/resource-center/Pages/HITPartnership.aspx)

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**Patient Identification**

New Deep Dive issued September 2016

Executive Summary available free at: [www.ecri.org/patientid](http://www.ecri.org/patientid)
What’s our goal?

Cases of patient harm

- Wrong DNR
- PICC line for wrong patient
- CT with contrast
Incidence

In one ED, 97% of clinicians report charting or entering orders on the wrong patient in the last 3 months.

In an average hospital, about 8% of medical records are duplicates.

58 orders per 100K entered on wrong patient.

1.2 per 1,000 warfarin Rxs dispensed to wrong patient in outpatient pharmacy.

Public trust

Wrong Patient Got Kidney at Hospital
Los Angeles Times, February 18, 2011

Parents Horrified after Hospital Mixup Allows Their Baby to Be Breastfed By Stranger
Huffington Post, January 29, 2014

Mix-up Leads to Surgical Procedure on Wrong Baby
CBS News, February 6, 2016

Hospital Tells Wrong Family Loved One Is Dying
FOX11 News, February 28, 2016
We’re not the only ones with this problem

Patient Identification Care Process Map

- Registration, scheduling
- Intake
- Diagnostics: Laboratory testing, Pathology, Imaging
- Treatment: Medications, Procedures, Transfusion
- Visit completion, discharge, transport, transition, handoff
- Encounter: Monitoring, Documentation
- Post-Encounter
- Physical identification
- Technology
- Health information exchange
- Electronic prescribing
- Referrals/consults
- Patient portals
Patient Identification Care Process Map

Top technology-related events

- POC Testing
- Barcoding
- CPOE/EHR
Standardization


What’s wrong with this picture?
Worth a thousand words

Leadership
Recommendations

Attributes

• Electronic fields containing ID data should use standard **conventions**
• Use **confirmation** process to match patient and documentation
• Standard attributes and formats in all **transactions**
• Standard **display** of patient attributes across IT systems

Recommendations

Technology

• Include **distinguishing information** on screens, printouts, and areas that require interventions
• Integrate **new technologies**
• Implement **monitoring** systems to detect errors
• Include high-specificity active **alerts** and notifications
Polling Question #3

Which problem is most significant for your organization?

a) Weight-based dosing  
b) Copy & paste  
c) Patient identification  
d) None of these

6 Things You Can Do Next Week

Application to the Practice Setting
#1 – Determine if your organization has a health IT safety program

- How is it resourced?
- Is there an FTE allocated to health IT safety work?
- Is the health IT safety work incorporated into your organization’s overall patient safety program?
- Is there a strong collaboration between nursing/clinical informatics, quality improvement, patient safety and risk management?
- Are you addressing the effectiveness of your incident reporting system?

#2 – Bring a multi-disciplinary team together to review the SAFER guides

https://www.healthit.gov/safer/safer-guides

- Start with the High Priority Practices and Organizational Responsibilities guides
- Recommend off-site for a day
- Assign follow-up

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<th>Organizational Responsibilities</th>
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<td>System Interfaces</td>
<td>Patient Identification</td>
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<td>Computed Provider Order Entry with Decision Support</td>
<td>Test Results Reporting and Follow Up</td>
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<td>Clinician Communication</td>
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Recommended Practices for Phase 1 — Safe Health IT

1. Data and application configurations are backed up and hardware systems are redundant.

2. EHR downtime and reactivation policies and procedures are complete, available, and reviewed regularly.

3. Allergies, problem list entries, and diagnostic test results (including interpretations of those results, such as “normal” and “high”), are entered/stored using standard, coded data elements in the EHR.

4. Evidence-based order sets and charting templates are available for common clinical conditions, procedures, and services.

Recommended Practice

2. EHR downtime and reactivation policies and procedures are complete, available, and reviewed regularly.

Rationale for Practice or Risk Assessment

Failure to prepare for the inevitability of EHR downtimes greatly increases the potential for errors in patient care during these difficult times.

Suggested Sources of Input

Clinicians, support staff, and/or clinical administration

Health IT support staff

Examples of Potentially Useful Practices/Scenarios

- Policies describe:
  - When a “downtime” should be called (including when the EHR is functionally unavailable [e.g., very slow response time]),
  - Who will be in charge during the downtime,
  - How everyone will be notified, and
  - Who is responsible for entering data collected during the downtime.
- Hospital personnel are trained (and tested annually) in these procedures.
#3 - Review your organization’s copy/paste policy

- Do you even have one?
- This may be your chance to develop a policy using ECRI’s recommendations:
  - Provide a mechanism to make copy and paste material easily identifiable
  - Ensure that the provenance of copy and paste material is readily available
  - Ensure adequate staff training and education regarding the appropriate and safe use of copy and paste
  - Ensure that copy and paste practices are regularly monitored, measured, and assessed
  - Contact your EHR vendor for help

#4 – Give your end users the best chance of selecting the right patient

- Allow only one patient record to display at a time
- Do not put patient list in alphabetical order
- Use alternating line colors for better visualization
- Add the patient’s picture
- Put picture or patient name on all ordering screens and order submit button
- Do not use default setting to select patient
- Carefully monitor any test patients in production. Use names that clearly indicate test patients in production (use numbers or multiple ZZ’s)
#5 – Provide an alert for weights that appear inaccurate – upon value entry

- The problem we saw - wrong weight entered by nurse into EHR
  - Put temperature in weight field
  - Put systolic blood pressure in weight field
  - Put decimal in wrong place
  - Used lbs instead of kgs
- The Solution - Alert nurse when weight entered is 10% higher or lower than previous value

STOP! Are you sure that weight is right?

#6 – Embed a nurse driven protocol into the EHR to reduce CAUTIs

- Use the EHR to reduce hospital acquired conditions – CAUTI
- On order entry, have provider indicate that the catheter removal protocol should be followed. Or if not, why not?
- Use clinical decision support to alert nurse at 24 hour intervals to assess continued need for catheter.
- Provide links in the alerts that take the provider right to the discontinuation order, and right to the flowsheet documentation for the nurse
- We’ve seen a reduction in CAUTIs from 2.4 to 0.5 infection rate (infection rate/1000 catheter days)
Questions and Contact Information

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