



The Office of the National Coordinator for
Health Information Technology

Reducing Medication Errors: Simple Recommendations

Office of Clinical Quality and Safety Webinar
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Dr. Andrew Gettinger, Chief Medical Information Officer, Executive Director
Office of Clinical Quality and Safety, ONC



Today's Presenter



Andrew Gettinger, MD

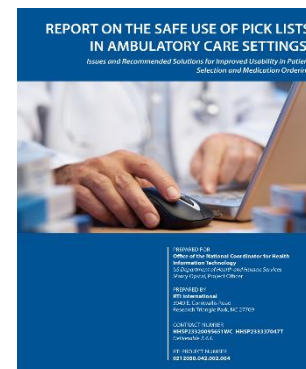
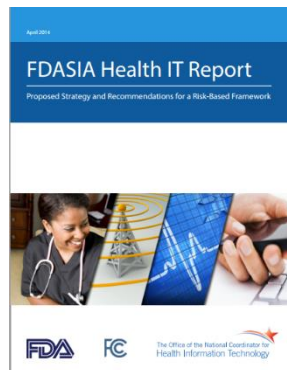
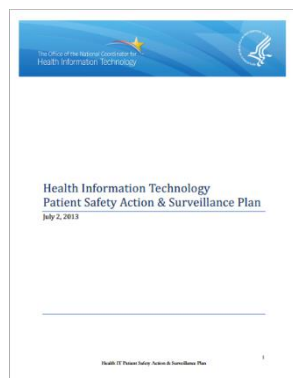
Chief Medical Information Officer, Executive Director

Office of Clinical Quality and Safety, ONC

Overview

- Development of a Roadmap for Health IT Safety Collaborative
- Testing Proposed Health IT Safety Collaborative Processes
- Findings: Report on the Safe Use of Pick Lists in Ambulatory Care Settings
- Q&A and Wrap Up

Background



2011

2013

2014

2015

2016

Development of a Roadmap for a Health IT Safety Collaborative

- In July 2015, RTI delivered a roadmap for creating a Health IT Safety Collaborative engaging and serving stakeholders throughout the nation
- Three core functions proposed:



Convening

- Assemble stakeholders to identify critical health IT safety issues and identify needed solutions



Researching

- Collect and assess existing analysis of health IT safety event data
- Identify existing solutions (best practices, tools, initiatives, etc.)



Disseminating

- Promote and distribute Collaborative work products

Testing Proposed Health IT Safety Collaborative Methods

- **Objective:** develop (or identify) a solution to a critical issue related to usability and medication management in ambulatory settings
- **Process:** assemble a work group of private/public stakeholders to test methods the proposed Collaborative would use to deliver solutions
- **Focus Area:** work group identified pick list errors as the targeted issue for recommendations and achievable solutions

Testing Proposed Health IT Safety Collaborative Methods (cont.)

- **Work Group Membership:** Individuals with relevant expertise and with private and public sector perspectives:
 - » Advocacy groups
 - » Patient safety organizations (PSOs)
 - » Safety researchers
 - » Provider organizations
 - » Human factors and usability experts
 - » Medication safety organizations
 - » Health IT vendors
 - » Government agencies

What We Tested

- This test validated Roadmap assumptions about convening volunteer expert workgroups to develop a solution to a specific health IT safety concern
- The test focused on the process to develop the solution
- ONC released the solution in the form of a report entitled, *Report on the Safe Use of Pick Lists in Ambulatory Care Settings: Issues and Recommended Solutions for Improved Usability in Patient Selection and Medication Ordering*

Findings: Report on the Safe Use of Pick Lists in Ambulatory Care Settings

- **Test Work Group Output:**
 - » Summary of evidence related to pick list errors
 - » Tools to help stakeholders address usability and safety in design and use of pick lists

REPORT ON THE SAFE USE OF PICK LISTS IN AMBULATORY CARE SETTINGS:

*Issues and Recommended Solutions for Improved Usability in Patient
Selection and Medication Ordering*



PREPARED FOR
**Office of the National Coordinator for Health
Information Technology**
US Department of Health and Human Services
Marcy Opstal, Project Officer

PREPARED BY
RTI International
3040 E. Cornwallis Road
Research Triangle Park, NC 27709

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What is a pick list error?

Lamictal (LAMOTRIGINE) or Lactulose for constipation?

XXXXXX
XXXXXX
LACTOBACILLUS CAPS, ORAL
LACTOBACILLUS GRANULES
LACTOBACILLUS TAB, CHEWABLE
LACTOSE TAB
LACTULOSE SYRUP
LAMICTAL (LAMOTRIGINE TAB, ORAL)
LAMISIL (TERBINAFINE HCL 1% CREAM, TOP)
LAMISIL (TERBINAFINE TAB)
LAMIVUDINE TAB
LAMIVUDINE SOLN, ORAL
XXXXXX
XXXXXX

Findings: Report on the Safe Use of Pick Lists in Ambulatory Care Settings (2)

- Summary of Evidence
 - » Why Pick List Errors? A recent review of malpractice claims found that medication-related errors accounted for the largest fraction of the 76 EHR-related errors overall (31%).
 - » An analysis of over 10,000 errors identified in the MEDMARX database over a 7-year period detected 302 “wrong drug” and 229 “wrong patient” selection errors.

Findings: Report on the Safe Use of Pick Lists in Ambulatory Care Settings (3)

- Summary of Evidence
 - » Wrong Patient Pick List Errors
 - Factors that increase likelihood:
 - Ability to view multiple charts in EHR at the same time
 - Factors that decrease likelihood:
 - **Require identification verification** at the time the medication order is placed
 - **Use of photo** as part of EHR record to more positively identify patient
 - Institute **human factors and usability practices** supported by literature that reduce wrong patient selection
 - Instituting a **summary review screen** before submitting a medication order
 - **Retract and reorder** (ability to recover easily from and track an error)

Findings: Report on the Safe Use of Pick Lists in Ambulatory Care Settings (4)

- Summary of Evidence (cont.)
 - » Wrong Medication Pick List Errors
 - Factors that increase likelihood:
 - Look-alike/sound-alike (LASA) errors
 - Auto-fill functionality used in association with drop-down menus
 - Use of truncated/abbreviated medication names
 - Length and organization of the pick list
 - Factors that decrease likelihood:
 - Institute **human factors and usability practices** supported by literature that reduce wrong medication selection
 - Instituting a **summary review screen** before submitting a medication order
 - **Retract and reorder** (ability to recover easily from and track an error)

Recommendations

1. Use specific design features to reduce wrong-patient pick list errors; in particular, include a patient's photograph in the record.
2. Use e-prescribing drug name concepts that adhere to common guidelines, which focus on improving safety, when developing medication pick lists.
3. Implement best practices for organization, design, and configuration of all pick lists, including use of e-prescribing drug names provided by compendia.
4. Display a summary review screen prior to completion of a medication order.
5. Provide easy-to-use retract-and-reorder (RAR) functionality, as well as functionality to track and identify potential design errors through regular review of RAR information.
6. Provide patients with lists of their current medications, including indications for each medication.

Tools: Features to Reduce Pick List-Related Medication Order Errors for Compendia and Vendor Organizations

- **Audience:** Vendors and Compendia Organizations
- **Description:** A set of relevant functionalities (core and suggested) demonstrated in the evidence that supports recommendations

Features to Reduce Pick List-Related Medication Order Errors for Compendia and Vendor Organizations

Recommendation 1: Design functionality to improve pick list-related patient identification error
Implemented by: Vendors

Straightforward EHR functional design can greatly reduce the likelihood of a wrong-patient error



Image	Name	MRN	Sex	Age	Condition	Admitted
	Dimassio, Josh	988234	M	41	Chest pain	7/23/2011
	Gomez, Fred	988233	M	52	Heart attack	7/23/2011
	Almah, William	988232	M	52	Chest pain	7/23/2011
	Deen, Samantha	988241	F	32	Arthritis	7/24/2011
	Drissol, Josh	988235	M	77	Liver	7/23/2011
	Evens, Rachel					7/24/2011
	Fillebert, Abou					7/24/2011

Patients with similar name:

- DIMASSIO, Josh, 41, Male, in room A332
- DRISCOL, Josh, 77, Male, in room B278

Buttons: Show, Highlight

CORE FUNCTIONALITY		REFERENCES
1	The ability to recognize a picture of the patient and to have the photo displayed in the record at the time of medication order submission reduces the likelihood of errors related to selecting the wrong patient.	Galanter ⁵⁵ , Hyman and Redmond ³⁴ , Sopan ³² , SHARPC, NCCD ⁵⁷
2	Provide clues that similar names exist. For example, a small icon next to the name if there are other patients with similar names. Hovering the cursor over the icon reveals the list of similar names and additional information about those patients.	Sopan ³² , SHARPC, NCCD ⁵⁷
3	Always show patient's full name, as identified by the patient. If a name in the list is unusually long, it should be wrapped inside the cell using a double height row.	Sopan ³² , SHARPC, NCCD ⁵⁷

SUGGESTED FUNCTIONALITY		REFERENCES
1	Ability to view multiple patient charts at once increases the likelihood of wrong-patient error in medication ordering. Systems should be capable of implementing local configurations on restrictions or notifications regarding multiple patient charts open at one time based on organizational policies.	Levin ³⁵

Tools: Self-Assessments for Practice Leaders to Use in Support of Pick List Best Practices

- **Audience:** Practice Leaders
- **Description:** Two checklists to self-assess adoption of recommendations:
 - » Policies
 - » EHR functionalities

	This is strongly established in our organization	This is in formative stages, not firmly established	We do not have or need specific procedures or solutions for this issue
EHR Functionality Assessment			
Content and design of pick lists assessed regularly (see Assessment 2: Pick List Functionality)			
There is an established line of communication with EHR vendor about upgrades and improvements if pick list functionality requires adjustment			
Training			
Documentation and training are available to ensure that end users are comfortable with the content and design of pick list functionality in medication ordering process			
Clear policies/procedures that establish responsibility for verification of patient ID prior to placing a medication order			
Importance of using a summary review screen for all medication orders is incorporated into training and continuing education for end users			

Tools: Reducing Pick List Errors in Medication Ordering for Providers

- **Audience:** Clinicians
- **Description:** Short set of best practices for physicians, nurses, and other clinicians who use pick lists in caring for their patients

Best Practices for Using Pick Lists

- ✓ Ensure that you've selected the correct patient record; take advantage of any tools your electronic health record/medical record (EHR/EMR) system offers to verify patient identity (e.g., the patient's picture, two forms of identification).
- ✓ Work on just one chart at a time, if possible.
- ✓ Pay special attention to summary review screens for orders: they are designed to catch mistakes. Double check medication orders for the correct drug and its prescription.
- ✓ If your EHR/EMR can be customized, create your own lists of patients and favorite medications ('quick lists' or lists of 'my favorites').
- ✓ Report concerns about the content or design of a pick list to the health IT safety staff that manages your EHR. "Near misses" should always be reported to your practice IT staff, so that they can be reported to the vendors and/or patient safety organizations that, in turn, will determine whether potential safety issues are more widespread.
- ✓ Ideally, pick lists should be organized in a way that makes sense to you, rather than just being presented in alphabetical order, for example. Medications might be listed by major indication, or by symptom being treated. Patient lists can often be restricted to just the patients assigned to you, or patients being seen in a specific location.
- ✓ Give patients a list of their current medications and, if possible, a description of what each one is for during the "teach back" process at the end of each visit. Patients can be an important safety net in catching errors.
- ✓ Your EHR/EMR may issue alerts that can help detect important errors. Pay attention to these alerts and work with your EHR/EMR safety staff to design alert protocols that minimize unimportant alerts.

Findings: Report on the Safe Use of Pick Lists in Ambulatory Care Settings (8)

- Future Considerations:

- » More research on effects of interruptions during the medication ordering process and how to best mitigate safety risks of those effects
- » Applied research regarding the best ways to use automated inferences based on both evidence-based best practices and patient-specific information in the EHR to help clinicians make and accurately record diagnosis and treatment decisions
- » Sharing diagnosis information with pharmacy staff would provide an important additional quality check at the point where medication is dispensed
- » Further investigate benefits of tracking pick list-related errors, specifically in reports of medication errors provided to PSOs

Work Group Members

Name	Role	Affiliation
Rob Anthony	Quality Measurement and Value-Based Incentives Group (QMVIG)	Centers for Medicare & Medicaid Services (CMS)
Jeff Belden	Usability Consultant	Independent Provider; Too Many Clicks
Barbara Boockholdt	Chief of Policy, Evaluation, and Analysis	U.S. Drug Enforcement Administration (DEA)
Gerry Castro	Project Director, Office of Patient Safety	The Joint Commission
Simon Choi	Senior Science Health Advisor - Digital Health	U.S. Food and Drug Administration (FDA)
Michael Cohen	President	Institute for Safe Medication Practices (ISMP)
Allen Vaida	Executive Vice President	ISMP
Ajit Dhavle	Vice President, Clinical Quality	SureScripts
Jesse Ehrenfeld	Member, Board of Trustees	American Medical Association (AMA)
Ellen Flynn	Assistant Vice President, Safety and Accreditation Programs	Vizient, Inc.
Tejal Gandhi	President & CEO	National Patient Safety Foundation (NPSF)
Andrew Gettinger	Chief Medical Information Officer	Office of the National Coordinator for Health Information Technology (ONC)
Joe Graedon	Founder	Society for Participatory Medicine and The People's Pharmacy
Terry Graedon	Founder	Society for Participatory Medicine and The People's Pharmacy

Work Group Members

Name	Role	Affiliation
David Kibbe	Senior Advisor, Health IT	American Academy of Family Physicians (AAFP)
Rich Landen	Director, Regulatory Affairs, QuadraMed	Representing the HIMSS Electronic Health Record Association (EHRA)
Edwin Lomotan	Chief of Clinical Informatics	Agency for Healthcare Research and Quality (AHRQ)
David Rodrick	Health Scientist Administrator	AHRQ
Svetlana Lowry	Usability Scientist, Lead NIST Health IT Usability Program	National Institute of Standards and Technology (NIST)
Tamarie Modisett	Executive Director	Alliance for Patient Medication Safety
James Owen	Vice President, Practice and Science Affairs	American Pharmacists Association (APhA)
Raj Ratwani	Science Director, National Center for Human Factors in Healthcare	MedStar Institute for Innovation
Zach Hettinger	Medical Director, National Center for Human Factors in Healthcare	MedStar Institute for Innovation
Jeanie Scott	Director, Informatics Patient Safety	U.S. Department of Veterans Affairs (VA)
Ronni Solomon	Executive Vice President and General Counsel	ECRI Institute



Questions & Wrap Up

Andrew Gettinger, M.D.

Andrew.Gettinger@hhs.gov

Citation: *Report on the Safe
Use of Pick Lists in
Ambulatory Care Settings*

This report is, and today's
slides will be, available at:
www.healthit.gov



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