Improving Health Information Technology (IT) Patient Safety: A Resource List for Users of the AHRQ Health Information Technology Supplemental Item Set

I. Purpose

This document provides a list of references to websites and other publicly available resources that hospitals can use to improve patient safety as it relates to the use of health IT. While this resource list is not exhaustive, it is designed to give initial guidance to hospitals seeking information about patient safety initiatives related to their health IT systems.

II. How To Use This Resource List

Resources are listed in alphabetical order, organized by the Surveys on Patient Safety Culture™ (SOPS®) composite measures assessed in the Agency for Healthcare Research and Quality (AHRQ) Health Information Technology (IT) Patient Safety Supplemental Item Set for the SOPS Hospital Survey, followed by general resources.

For easy access to the resources, keep the file open rather than printing it in hard copy because many of the website URLs are hyperlinked.

Feedback. Suggestions for resources you would like added to the list, questions about the survey, or requests for assistance can be addressed to: SafetyCultureSurveys@westat.com.

NOTE: The resources included in this document do not constitute an endorsement by the U.S. Department of Health and Human Services (HHS), the Agency for Healthcare Research and Quality (AHRQ), or any of their employees. HHS does not attest to the accuracy of information provided by linked sites.

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Resources by Composite Measure

The following resources are organized according to the relevant AHRQ Health IT Supplemental Item Set composite measures they are designed to help improve.

Composite Measure 1. EHR System Training

1. **EHR Training Guide – 18 Best Practices**
   http://info.thehcigroup.com/ehr-training-best-practices-download

   This resource from HCI Group outlines 18 best practices to help guide you through your electronic health record (EHR) Training Program.

2. **Plan B: A Practical Approach to Downtime Planning in Medical Practices**
   http://library.ahima.org/doc?oid=95715#.WWkINk3fO70

   All health IT systems will experience downtimes, whether planned or unplanned. Well-vetted and communicated policies and procedures keep practices running and their patient information intact. This web page provides a "downtime communication" template as well as customizable communication templates for procedures for planned and unplanned downtime.

Composite Measure 2. EHR System Support and Communication

1. **How To Identify and Address Unsafe Conditions Associated With Health IT**
   https://www.healthit.gov/sites/default/files/how_to_identify_and_address_unsafe_conditions_associated_with_health_it_2013.pdf

   The guide aims to help healthcare organizations and Patient Safety Organizations (and perhaps health IT technology developers, industry professional associations, and risk management and liability insurance companies) improve reporting of unsafe conditions associated with health IT and EHRs in particular.

IV. Resources by Additional Measures

EHR Patient Safety and Quality Issues

1. **Toolkit for the Safe Use of Copy and Paste Report**
   https://www.ecri.org/Resources/HIT/CP_Toolkit/Toolkit_CopyPaste_final.pdf

   The Partnership for Health IT Patient Safety worked with a multidisciplinary group of stakeholders to develop best practices and recommendations for copying and pasting health information in EHRs.

2. **Toolkit for the Safe Use of Health IT for Patient Identification**
   https://www.ecri.org/Resources/HIT/Patient%20ID/Patient_Identification_Toolkit_final.pdf

   The toolkit features eight safe practice recommendations, along with resources to facilitate the implementation of these practices. The practice recommendations address information-gathering aspects of patient identification and new technologies to improve identification, as well as ways to leverage existing technologies. The recommendations include using a confirmation process to help match the patient and the documentation and implementing monitoring systems to readily detect identification errors.

EHR and Workflow/Work Process

1. **Alarm Anthology: Patient Safety Seminars**
   https://www.aami.org/anthology-alarm-management-solutions/alarm-anthology-patient-safety-seminars

   Beginning in 2014, the Association for the Advancement of Medical Instrumentation Foundation hosted a series of patient safety webinars focused on research, best practices, and case studies on improving alarm management safety.

2. **Patient Safety Primer: Alert Fatigue**
   https://psnet.ahrq.gov/primers/primer/28/alert-fatigue

   The rapidly increasing computerization of healthcare has produced benefits for clinicians and patients. Yet the integration of technology into medicine has been anything but smooth. As newer and more sophisticated devices have been added to the clinical environment, clinicians' workflows have been affected in unanticipated ways. These fundamental shifts have resulted in new threats to patient safety, an unfortunate irony given that technological solutions have been promoted for many years as the most promising solution to medical errors. The AHRQ Patient Safety Network explains this topic further and provides links for more information on what is new in safety culture.

3. **What Are the Dangers of Alert Fatigue?**
   http://www.ihi.org/education/IHIOpenSchool/resources/Pages/Activities/Wachter-AlertFatigue.aspx

   In a given month, physicians at UCSF Medical Center get 30,000 alerts from different systems, and pharmacists get 160,000. In a new Open School video, Bob Wachter, Professor at UCSF and one of the world's leading experts on patient safety, shares memorable vignettes about alert fatigue, his take on the noisy systems we've created, and some potential solutions to the problem.

4. **Workflow Assessment for Health IT Toolkit**
   https://healthit.ahrq.gov/health-it-tools-and-resources/evaluation-resources/workflow-assessment-health-it-toolkit

   A key to successful implementation of health IT is to recognize its impact on both clinical and administrative workflow. Once implemented, health IT can provide information to help you reorganize and improve your workflow. This toolkit is designed for people and organizations interested or involved in the planning, design, implementation, and use of health IT in ambulatory care.

5. **Workflow Process Mapping for Electronic Health Record (EHR) Implementation**
   https://www.healthit.gov/playbook/pdf/workflow-process-mapping-for-electronic-health-record-ehr-implementation.pdf

   These guidelines are intended to aid providers and health IT implementers while planning EHR implementation. The path to successful EHR implementation starts with practice workflow analysis and redesign. While this process is not easy and takes time, efficiently managed workflow redesign can make a big difference in maximizing office efficiencies and improving care coordination using EHRs. In fact, a lack of thorough workflow planning is one of the biggest reasons for avoidable losses in productivity and extended workdays.

   These guidelines will help assess practice workflow through "AS IS" (how workflows currently exist) and "TO BE" (how workflows can be optimized through practice transformation) process mapping.

6. **Workflow Redesign Templates**
   https://www.healthit.gov/sites/default/files/tools/workflow_redesign_templates_v1.pptx

   This resource is a tool used in the field today and recommended by "boots-on-the-ground" professionals for use by others who have made the commitment to implement or upgrade to certified EHR systems.

Overall EHR System Ratings

1. **Center for Quality and Productivity Improvement Usability Tools**
   http://cqpi.wisc.edu/?page_id=267

   This web page from the University of Wisconsin-Madison, Center for Quality and Productivity Improvement features a list of Usability Tools for Health IT geared mainly toward users of computerized provider order entry (CPOE) in ICUs and Smart IV Pump implementation.

2. **Eight Top Challenges and Solutions for Making EHRs Usable**
   https://wire.ama-assn.org/practice-management/8-top-challenges-and-solutions-making-ehrs-usable

   This resource is from the American Medical Association and highlights the eight top challenges and solutions for improving EHR usability for physicians and their patients. This list was created by a panel of experts and focuses on leveraging the potential of EHRs to enhance patient care, improve productivity, and reduce administrative costs.

V. General Resources

1. **Digital Healthcare Research**
   https://digital.ahrq.gov/

   AHRQ's Digital Healthcare Research Program's mission is to produce and disseminate evidence about how the evolving digital healthcare ecosystem can best advance the quality, safety, and effectiveness of healthcare for patients and their families. To fulfill its mission, AHRQ's Digital Healthcare Research Program has invested in research grants and contracts awarded to nearly 300 distinct institutions in 48 States, the District of Columbia, and Puerto Rico.

2. **ECRI 2019 Top 10 Health Technology Hazards**
   https://www.ecri.org/Resources/Whitepapers_and_reports/Haz_19.pdf

   Produced each year by ECRI Institute's Health Devices Group, the Top 10 Health Technology Hazards list identifies the potential sources of danger that warrant the greatest attention for the coming year. The list does not enumerate the most frequently reported problems or the ones associated with the most severe consequences—although ECRI does consider such information in their analysis. Rather, the list reflects ECRI's judgment about which risks should receive priority now.

   All the items on the list represent problems that can be avoided or risks that can be minimized through careful management of technologies. Additional content provided with the full article, which is available separately, provides guidance to help manage the risks. In this way, the list serves as a tool healthcare facilities can use to prioritize their patient safety efforts.

3. **Five Ways To Make Your EMR More User-Friendly**
   http://www.healthcareitnews.com/news/5-ways-make-your-emr-more-user-friendly

   This article recommends five practical ways to make your electronic medical record (EMR) more user-friendly, including standardizing task sequences and placing important items at the top of the list.

4. **Health IT Curriculum Resources for Educators**
   https://www.healthit.gov/topic/health-it-resources/health-it-curriculum-resources-educators

   The Workforce Components section includes an updated and expanded set of health IT instructional materials, funded by the Office of the National Coordinator for Health Information Technology (ONC). These materials are designed to help healthcare workers and others stay current in the changing healthcare environment and deliver care more effectively.

5. **Health IT Playbook**
   https://www.healthit.gov/playbook/

   The ONC within the U.S. Department of Health and Human Services (HHS) developed the Health IT Playbook to answer many of the questions providers ask when implementing and using health IT. Derived from extensive research, previously developed as well as newly created tools, this playbook provides content that addresses questions such as "How do I redesign workflows to improve and optimize practice efficiency and effectiveness?" and "How do I protect the confidentiality, integrity, and availability of personal health information in my EHR system?"

6. **Leading a Culture of Safety: A Blueprint for Success**
   https://www.ihi.org/resources/Pages/Publications/Leading-a-Culture-of-Safety-A-Blueprint-for-Success.aspx (requires free account setup and login)

   Leading a Culture of Safety: A Blueprint for Success was developed to provide chief executive officers and other leaders with a useful tool for assessing and advancing their organization's culture of safety. This guide can be used to help determine the current state of an organization's journey, inform dialogue with the board and leadership team, and help leaders set priorities.

   The high-level strategies and practical tactics in the guide are divided into two levels:

   - The foundational level provides basic tactics and strategies essential for the implementation of each domain.
   - The sustaining level provides strategies for spreading and embedding a culture of safety throughout the organization.

7. **National Action Plan To Advance Patient Safety**
   https://www.ihi.org/Engage/Initiatives/National-Steering-Committee-Patient-Safety/Pages/National-Action-Plan-to-Advance-Patient-Safety.aspx (requires free account setup and login)

   The Institute for Healthcare Improvement's National Action Plan provides actionable and effective recommendations to advance patient safety by harnessing knowledge and insights from the National Steering Committee for Patient Safety (NSC). The site also includes a supplemental Self-Assessment Tool and Implementation Resource Guide and a Declaration to Advance Patient Safety issued by the NSC.

8. **Patient Safety Primer: Electronic Health Records**
   https://psnet.ahrq.gov/primers/primer/43/electronic-health-records

   EHR systems are made up of the electronic patient "chart" and typically include functionality for computerized provider order entry, laboratory and imaging reporting, and medical device interfaces. Ideally, the system creates a seamless, legible, comprehensive, and enduring record for a patient's medical history and treatment. However, the transition to this new way of recording and communicating medical information has also introduced new opportunities for error and other unanticipated outcomes that can present safety risks. AHRQ's Patient Safety Network explains this topic further and provides links for more information on what is new in safety culture.

9. **Resources for Critical Access Hospitals and Small Rural Hospitals**
   https://www.healthit.gov/topic/health-it-health-care-settings/resources-critical-access-hospitals-and-small-rural-hospitals

   HealthIT.gov offers resources for critical access hospitals and small rural hospitals, including benefits of health information technology (IT) in rural settings and ways to overcome barriers to health IT adoption and implementation.

10. **Safe Health IT Saves Lives**
    https://www.jointcommission.org/resources/sentinel-event/safe-health-it-saves-lives/

    Materials include a video, infographic, podcast, and course to teach where health IT can unexpectedly contribute to patient harm and how organizations can improve the safety of health IT.

11. **Safe Practice Recommendations for Developing, Implementing, and Integrating a Health IT Safety Program**
    https://www.ecri.org/Resources/HIT/Health_IT_Safety/HIT_Toolkit_2018.pdf

    The Partnership for Health IT Patient Safety, a multistakeholder collaborative convened and operated by ECRI Institute, developed safe practice recommendations for developing, implementing, and integrating a health IT safety program. The Partnership's work discusses the recommendations and provides tools to facilitate the domains of health IT safety: safe health IT, safe use of health IT, and use of health IT for safety.

12. **Safety Assurance Factors for EHR Resilience (SAFER) Guides**
    https://www.healthit.gov/safer/

    The SAFER Guides are designed to help healthcare organizations conduct self-assessments to optimize the safety and safe use of EHRs in the following areas: High Priority Practices, Organizational Responsibilities, Contingency Planning, System Configuration, System Interfaces, Patient Identification, Computerized Provider Order Entry With Decision Support, Test Results Reporting and Follow-Up, and Clinician Communication.

VI. Alphabetical Index of Resources

Alarm Anthology: Patient Safety Seminars

Center for Quality and Productivity Improvement Usability Tools

Digital Healthcare Research

ECRI 2019 Top 10 Health Technology Hazards

EHR Training Guide – 18 Best Practices

Eight Top Challenges and Solutions for Making EHRs Usable

Five Ways To Make Your EMR More User-Friendly

Health IT Curriculum Resources for Educators

Health IT Playbook

Health IT Portfolio

How To Identify and Address Unsafe Conditions Associated With Health IT

Leading a Culture of Safety: A Blueprint for Success

National Action Plan To Advance Patient Safety

Patient Safety Primer: Alert Fatigue

Patient Safety Primer: Electronic Health Records

Plan B: A Practical Approach to Downtime Planning in Medical Practices

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Toolkit for the Safe Use of Health IT for Patient Identification

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Workflow Assessment for Health IT Toolkit

Workflow Process Mapping for Electronic Health Record (EHR) Implementation

Workflow Redesign Templates