Institute for Healthcare Improvement
NPSF
TOGETHER FOR SAFER CARE

Current Awareness
Literature Alert

May (1) 2017 Volume 21, Issue 5:1

Abstracts of recent articles of interest to the patient safety community selected by the NPSF Information Resources Center.

The *Top Picks* highlight articles that offer particular insight into advancing the field of health care safety, chosen by Tejal K. Gandhi, MD, MPH, CPPS, Chief Clinical and Safety Officer, National Patient Safety Foundation at the Institute for Healthcare Improvement.

IN THIS ISSUE

Top Picks

1. **National Trends in Safety Performance of Electronic Health Record Systems in Children's Hospitals.** Chaparro JD, Classen DC, Danforth M, Stockwell DC, Longhurst CA. *J Am Med Inform Assoc.*
2. **Patient Mortality during Unannounced Accreditation Surveys at US Hospitals.** Barnett ML, Olenski AR, Jena AB. *JAMA Intern Med.*
3. Addressing Perioperative Staff Member Fatigue. *AORN J.*
4. Assessing the Impact of the Anesthesia Medication Template on Medication Errors during Anesthesia: A Prospective Study. *Anesth Analg.*
5. Association between State Medical Malpractice Environment and Postoperative Outcomes in the United States. *J Am Coll Surg.*
6. Economic Impact of Medication Error: A Systematic Review. *Pharmacoepidemiol Drug Saf.*
7. Engaging Learners in Health System Quality Improvement Efforts. *Acad Med.*
8. Extent of Diagnostic Agreement among Medical Referrals. *J Eval Clin Pract.*
9. High Prevalence of Inappropriate Benzodiazepine and Sedative Hypnotic Prescriptions among Hospitalized Older Adults. *J Hosp Med.*
10. How Participation in Surgical Mortality Audit Impacts Surgical Practice. *BMC Surg.*
11. Implementation of the Trigger Review Method in Scottish General Practices: Patient Safety Outcomes and Potential for Quality Improvement. *BMJ Qual Saf.*
12. Merging Video Coaching and an Anthropologic Approach to Understand Health Care Provider Behavior toward Hand Hygiene Protocols. *Am J Infect Control.*
13. A Model for the Departmental Quality Management Infrastructure within an Academic Health System. *Acad Med.*
14. Non-Technical Skills of Surgical Trainees and Experienced Surgeons. *Br J Surg.*
15. Our Current Approach to Root Cause Analysis: Is It Contributing to Our Failure to Improve Patient Safety? *BMJ Qual Saf.*
16. Patient Safety [Theme Issue]. *Oral Maxillofac Surg Clin North Am.*
17. The Problem with Root Cause Analysis. *BMJ Qual Saf.*
18. Reducing Preventable Harm: Observations on Minimizing Bloodstream Infections. *J Health Organ Manage.*
19. The Role of Morbidity and Mortality Rounds in Medical Education: A Scoping Review. *Med Educ.*
20. What Constitutes "Competent Error Disclosure"? Insights from a National Focus Group Study in Switzerland. *Swiss Med Wkly.*

Top Picks

1. National Trends in Safety Performance of Electronic Health Record Systems in Children's Hospitals

Chaparro JD, Classen DC, Danforth M, Stockwell DC, Longhurst CA.

J Am Med Inform Assoc. 2017(Mar); 24(2):268–274.

Abstract free; full text requires subscription. https://doi.org/10.1093/jamia/ocw134

Although some studies of computerized physician order entry (CPOE) and associated clinical decision support systems have shown reductions in medication errors, results vary considerably between different hospitals using the same system and even within a given hospital over time. In this study, the authors assessed the performance of CPOE systems at 41 pediatric hospitals using the Leapfrog Group's CPOE evaluation tool, a previously validated instrument that uses simulated scenarios to test a system's ability to identify and prevent submission of erroneous and potentially harmful medication orders. Results showed that the systems on average identified 62% of errors included in the test scenarios, although there was wide variation (from 23% to 91%) in error detection rates between institutions in the study sample. Repeated testing using the evaluation tool was associated with consistent improvements in performance, suggesting that feedback generated by the testing process enables hospitals to identify and implement improvements in system functionality over time.

2. Patient Mortality during Unannounced Accreditation Surveys at US Hospitals

Barnett ML, Olenski AR, Jena AB.

JAMA Intern Med. 2017(May 1); 177(5):693–700.

Abstract free; full text requires subscription. http://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2610103

This study demonstrates that hospital patients admitted during weeks when a hospital was undergoing an unannounced Joint Commission accreditation survey had a significantly lower risk of dying within 30 days of hospital admission than did patients admitted during nonsurvey weeks. The association between surveyor presence and reduction in 30-day mortality rates was particularly strong in large teaching hospitals, possibly reflecting especially intensive preparation and greater investment of resources likely to occur in these hospitals as compared with other facilities. Of interest was that the observed reductions in mortality did not appear to be linked to changes in measures of safety performance specifically examined by accreditors, such as adherence to infection control practices and medication management. The authors suggest that identifying behavioral changes that account for the observed reductions in mortality during survey weeks and replicating these changes throughout the year could have substantial benefits for patient safety.

3. Addressing Perioperative Staff Member Fatigue

Battié RN, Rall H, Khorsand L, Hill J.

AORN J. 2017(Mar); 105(3):285–291.

Abstract free; full text requires subscription. http://www.aornjournal.org/article/S0001-2092(17)30004-2/abstract

Although it is widely recognized that fatigue among health care workers has negative effects on the safety and well-being of staff and patients, developing effective strategies for preventing and managing fatigue continues to be a challenge for many health care organizations. This article discusses the causes and consequences of fatigue among nurses working in surgical and perioperative care settings and describes how one hospital created and implemented a plan to reduce nurse fatigue through changes to work practices, staffing arrangements, and organizational culture.

4. Assessing the Impact of the Anesthesia Medication Template on Medication Errors during Anesthesia: A Prospective Study

Grigg EB, Martin LD, Ross FJ, et al.

Anesth Analg. 2017(May); 124(5):1617–1625.

Full text free. http://journals.lww.com/anesthesia-analgesia/Fulltext/2017/05000/Assessing_the_Impact_of_the_Anesthesia_Medication.39.aspx

This study describes the development and evaluation of the Anesthesia Medication Template, a physical organization system designed to enable standardized presentation of medications and related items in the anesthesia workspace during surgical procedures. Results showed that use of the system was associated with reductions in rates of medication errors both in simulation-based tests and when used in actual practice, suggesting that adoption of such a tool could be an easily implemented and low-cost strategy for improving medication safety in the operating room.

5. Association between State Medical Malpractice Environment and Postoperative Outcomes in the United States

Minami CA, Sheils CR, Pavey E, et al.

J Am Coll Surg. 2017(Mar); 224(3):310–318.e2.

Abstract free; full text requires subscription. http://www.journalacs.org/article/S1072-7515(16)31703-3/abstract

In theory, medical malpractice environments that impose greater threat of liability should be associated with higher quality of patient care, but whether there is empirical evidence to support the existence of such a relationship is uncertain. Building on previous work that examined outcomes for only one specific type of procedure, this study shows that there was no consistent association between composite measures of a U.S. state's malpractice environment and frequency of postoperative surgical complications for a range of surgical

procedures. Where correlations were found, higher liability risk for physicians was in fact associated with higher, not lower, rates of postoperative complications.

6. Economic Impact of Medication Error: A Systematic Review

Walsh EK, Hansen CR, Sahm LJ, Kearney PM, Doherty E, Bradley CP.

Pharmacoepidemiol Drug Saf. 2017(May); 26(5):481–497.

Full text free. http://onlinelibrary.wiley.com/doi/10.1002/pds.4188/full

Medication errors are prevalent in many different health care settings and have the potential to cause considerable patient harm, and the financial costs to health care systems associated with such errors are an important factor to be considered in the development and implementation of improvement interventions. This systematic review shows that, while the included studies collectively demonstrated that costs associated with medication error constitute a substantial financial burden, heterogeneity of study designs and limitations in methodological quality made it impossible to establish a meaningful estimate of the cost of such errors based on the available evidence.

7. Engaging Learners in Health System Quality Improvement Efforts

Johl K, Grigsby RK.

Acad Med. 2017(May); 92(5):593–597.

Abstract free; full text requires subscription. http://journals.lww.com/academicmedicine/Abstract/2017/05000/Engaging_Learners_in_Health_System_Quality.26.aspx

The authors argue that although considerable efforts have been made to integrate patient safety and quality improvement as a part of undergraduate and graduate medical education curricula, achieving meaningful involvement of trainees in safety and quality improvement efforts has remained an elusive goal. The authors discuss how bidirectional alignment—a concept from the IT industry, where it represents part of a business approach in which input from customers guides organizational strategic planning and priority setting—could be applied to efforts to more fully engage medical students and residents in health care system design and improvement.

8. Extent of Diagnostic Agreement among Medical Referrals

Van Such M, Lohr R, Beckman T, Naessens JM.

J Eval Clin Pract. 2017(Apr 4). [Published online ahead of print.]

Abstract free; full text requires subscription. http://onlinelibrary.wiley.com/doi/10.1111/jep.12747/abstract

In this study, the authors compared referral and final diagnoses for 286 patients who were referred by primary care providers for further evaluation by specialists, showing that the diagnosis remained unchanged in only 12% of the cases examined: in most cases the original diagnosis was expanded or refined, but in 21% of cases the final diagnosis was "distinctly different" from the referral diagnosis. The study provides insight into challenges and possible areas of focus for efforts to improve diagnostic accuracy and to prevent diagnostic error.

9. High Prevalence of Inappropriate Benzodiazepine and Sedative Hypnotic Prescriptions among Hospitalized Older Adults

Pek EA, Remfry A, Pendrith C, Fan-Lun C, Bhatia RS, Soong C.

J Hosp Med. 2017(May); 12(5):310–316.

Abstract free; full text requires subscription. https://dx.doi.org/10.12788/jhm.2739

Benzodiazepine drugs are frequently used to treat anxiety and sleeplessness in hospitalized older adult patients, but concerns about risks associated with the use of these drugs have led to recommendations to limit their use in this patient population. In this analysis at an academic medical center, more than 75% of benzodiazepine prescriptions for patients over age 65 were found to be potentially inappropriate according to established criteria. Most of these prescriptions were for the treatment of insomnia, and rates of potentially inappropriate prescribing were significantly higher among first-year residents than among more senior physicians.

10. How Participation in Surgical Mortality Audit Impacts Surgical Practice

Lui CW, Boyle FM, Wysocki AP, et al.

BMC Surg. 2017(Apr 19); 17(42).

Full text free. https://bmcsurg.biomedcentral.com/articles/10.1186/s12893-017-0240-z

In Australia and New Zealand, hospital review of surgical patient deaths is governed by a national framework and is carried out within facilities by a peer-review process. In this study, a survey of surgeons in Queensland, Australia, showed that 39% of respondents reported that participation in institutional surgical mortality audit processes had influenced their individual clinical practice, and that beneficial effects of involvement were perceived especially by practitioners who had comparatively extensive involvement in the audit procedure. The study provides insight into the potential uses of mortality audits as a tool for professional learning and development.

11. Implementation of the Trigger Review Method in Scottish General Practices: Patient Safety Outcomes and Potential for Quality Improvement

de Wet C, Black C, Luty S, McKay J, O'Donnell CA, Bowie P.
BMJ Qual Saf. 2017(Apr); 26(4):335–342.
Abstract free; full text requires subscription. http://qualitysafety.bmj.com/content/26/4/335

Use of a trigger-based review method to perform systematic monitoring and reporting of safety-related incidents has been implemented by general practices throughout Scotland as part of an incentive-based national improvement initiative. Presenting the first published analysis of results from this initiative, this study provides evidence that the trigger review method is feasible to implement and has the potential to improve the detection, monitoring, and management of a wide range of safety problems in the primary care setting.

12. Merging Video Coaching and an Anthropologic Approach to Understand Health Care Provider Behavior toward Hand Hygiene Protocols

Boudjema S, Tarantini C, Peretti-Watel P, Brouqui P.
Am J Infect Control. 2017(May); 45(5):487–491.
Abstract free; full text requires subscription. http://www.ajicjournal.org/article/S0196-6553(16)31176-2/abstract

In this study, the authors used video recordings and in-depth interviews to examine attitudes and behaviors related to compliance with hand hygiene requirements among health care workers at a French hospital. The study shows that deviations from hand hygiene protocols (which often involved improper use of gloves) were common and occurred in spite of health care providers' understanding of infection prevention practices and awareness of contamination risk. The study emphasizes the importance of designing policies and protocols that are adaptable to care providers' actual work practices within the constraints imposed by the clinical environment.

13. A Model for the Departmental Quality Management Infrastructure within an Academic Health System

Mathews SC, Demski R, Hooper JE, et al.
Acad Med. 2017(May); 92(5):608–613.
Abstract free; full text requires subscription. http://journals.lww.com/academicmedicine/Abstract/2017/05000/A_Model_for_the_Departmental_Quality_Management.29.aspx

As patient safety and quality improvement play an increasingly salient role in the activities of academic medical institutions, there is a need for the development of organizational structures to support effective management and oversight of these programs. This article describes the system developed by Johns Hopkins Medicine to address this need and discusses the steps involved in implementation of such an approach.

14. Non-Technical Skills of Surgical Trainees and Experienced Surgeons

Gostlow H, Marlow N, Thomas MJ, et al.
Br J Surg. 2017(May); 104(6):777–785.
Abstract free; full text requires subscription. http://onlinelibrary.wiley.com/doi/10.1002/bjs.10493/abstract

Although surgical education traditionally has focused on the acquisition of technical skill and knowledge, growing recognition of the importance of nontechnical skills—such as those related to teamwork, communication, leadership, and decision-making—has led to an increased emphasis on these proficiencies in training programs and assessment instruments. In this study, a simulation-based evaluation that compared more-experienced and less-experienced surgeons showed that, contrary to expectations, nontechnical skills generally declined with increased years of professional experience. The study suggests that opportunities for development of nontechnical skills could be of benefit to surgeons at all levels of professional practice.

15. Our Current Approach to Root Cause Analysis: Is It Contributing to Our Failure to Improve Patient Safety?

Kellogg KM, Hettinger Z, Shah M, et al.
BMJ Qual Saf. 2017(May); 26(5):381–387.
Full text free. http://qualitysafety.bmj.com/content/26/5/381

This study of root cause analyses (RCAs) conducted during an 8-year period at a large academic medical center showed that the types of solutions most frequently proposed by RCA teams were those considered by safety scientists to be relatively weak types of interventions (such as staff education and reinforcement of existing policies) rather than the system-level and design changes considered most effective. The authors also found that several types of serious adverse events (such as unintended retention of surgical objects in patients) occurred multiple times during the period examined despite the performance of RCAs examining such incidents. An accompanying editorial underscores the need for greater support and investment of resources to advance efforts to improve the RCA process: *http://qualitysafety.bmj.com/content/26/5/350*

16. Patient Safety [Theme Issue]

Todd DW, Bennett JD, eds.
Oral Maxillofac Surg Clin North Am. 2017(May); 29(2):121–244.
Abstracts free; full text requires subscription. http://www.sciencedirect.com/science/journal/10423699/29/2

This theme issue presents a collection of review articles that discuss basic concepts, current issues, and recommended practices for ensuring patient safety in oral and maxillofacial surgical care. Topics covered include preoperative preparation and planning, medication- and anesthesia-related safety concerns, prevention of wrong-site surgery, fire and equipment safety, simulation-based training for improvement, and the use of incident reporting systems.

17. The Problem with Root Cause Analysis

Peerally MF, Carr S, Waring J, Dixon-Woods M.
BMJ Qual Saf. 2017(May); 26(5):417–422.
Full text free. http://qualitysafety.bmj.com/content/26/5/417

The authors argue that although the use of root cause analysis (RCA) in the health care industry has the potential to serve as a valuable tool to promote learning and improvement following the occurrence of adverse incidents, applications of RCA by health care organizations often fall far short of these goals. This article describes common problems that limit the utility of RCA in health care organizations and discusses possible approaches for increasing its effectiveness.
Editor's note: A previously published report from the National Patient Safety Foundation has identified best practices, guidelines, and recommendations for improving the RCA process: *http://www.npsf.org/RCA2*

18. Reducing Preventable Harm: Observations on Minimizing Bloodstream Infections

Pronovost PJ, Weaver SJ, Berenholtz SM, et al.
J Health Organ Manage. 2017(Mar); 31(1):2–9.
Abstract free; full text requires subscription. http://dx.doi.org/10.1108/JHOM-10-2016-0197

In contrast to the slow and uncertain progress that has been observed in many patient safety efforts undertaken during the past 2 decades, nationwide reductions in rates of central line–associated bloodstream infections (CLABSIs) in intensive care units stand out as a noteworthy example of improvement. In this perspective article, the authors further develop a proposed framework of interventions for preventing health care–related harm, drawing on evidence from published literature and from the experiences of hospitals that were highly successful in achieving and sustaining reductions in CLABSI rates.

19. The Role of Morbidity and Mortality Rounds in Medical Education: A Scoping Review

Benassi P, MacGillivray L, Silver I, Sockalingam S.
Med Educ. 2017(May); 51(5):469–479.
Full text free. http://onlinelibrary.wiley.com/doi/10.1111/medu.13234/full

Although morbidity and mortality rounds (MMRs) have traditionally functioned as an important part of professional educational activities in academic medical institutions, only relatively recently has attention been focused on the role that MMRs can play in patient safety and quality improvement. This scoping review shows that while a number of individual studies examined provide evidence of the usefulness of MMRs as a tool for medical education and for patient safety and quality improvement, overall evidence about the impact on educational and safety-related outcomes remains limited.

20. What Constitutes "Competent Error Disclosure"? Insights from a National Focus Group Study in Switzerland

Hannawa AF.
Swiss Med Wkly. 2017(May 3); 147:w14427.
Full text free. https://smw.ch/article/doi/smw.2017.14427

Although disclosure of adverse incidents in medical care to the patients involved is now generally recognized as imperative for the provision of safe and effective patient care, evidence suggests that disclosure as it is actually performed in practice frequently fails to meet patients' needs. This study uses a theoretical model from communication sciences as a framework for examining patients' expectations regarding error disclosure by clinicians, providing insights that could help guide the design of future disclosure training programs.

Current Awareness Literature Alert is published 22 times per year.

Editor: Anita Spielman, CPPS, aspielman@ihi.org
Associate Editor: Elma Sanders, PhD, esanders@ihi.org

