



THE UNIVERSITY OF
NEW SOUTH WALES



CENTRE FOR CLINICAL GOVERNANCE RESEARCH IN HEALTH

Selected abstracts and citations



Recent work on Patient Safety for the Patient Safety Research Network

The Centre for Clinical Governance Research in Health undertakes strategic research, evaluations and research-based projects of national and international standing with a core interest to investigate health sector issues of policy, culture, systems, governance and leadership.

Recent work on Patient Safety Selected abstracts and citations

Duration of project

February 2004

Search period

1995 - 10th February 2004

Key words searched

Patient Safety; Clinical harm; Harm reduction; Patient and harm (combined)

Databases searched

Medline; CINAHL (Cumulative index to nursing and allied health); IBSS (International Bibliography of the Social Sciences) and Sociological Abstracts

Criteria applied

Abstracts dealing with Patient Safety. Peer-reviewed articles were preferred, ie research, study or review articles.

Articles that met the criteria were included in the project. Miscalssified articles were removed. A bibliography including citations and abstracts of these articles is presented on the next pages.

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Overview of the literature

Background

In what follows we provide abstracts and citations, arranged alphabetically by author, for 396 articles we uncovered using the search strategy outlined above. Literature from 1995 to the present was searched using the key words *patient safety*, *clinical harm*, *harm reduction*, and *patient* and *harm* combined. This document will have utility for collaborative members who want to explore a topic of interest as part of their membership of the collaborative or as part of their other work.

Method

Two researchers (JB and NM) jointly analysed these abstracts and citations and categorised them using a grounded process. We sought to determine the kinds of categories by which the patient safety and harm reduction literature represented in this document could be appropriately described.

Findings

A number of abstracts and citations resisted ready classification. Table 1 exhibits the categories we could classify.

Table 1: Patient safety and harm reduction categories

Category	Article numbers	n	Comments
IT and technology	2, 17, 20, 26, 31, 35, 38, 44, 51, 60, 65, 70, 75, 77, 83, 95, 98, 103, 119, 120, 124, 129, 132, 137, 139, 146, 150, 153, 156, 157, 164, 170, 202, 206, 208, 216, 222, 231, 232, 237, 239, 242, 248, 249, 250, 253, 261, 294, 297, 311, 313, 317, 330, 340, 346, 352, 357, 365, 393	59	Includes articles on information management, software systems, medical devices, and technology-oriented patient safety issues
Error, adverse events	12, 29, 39, 45, 46, 48, 71, 85, 93, 97, 105, 108, 114, 123, 143, 168, 175, 177, 178, 180, 207, 230, 256, 257, 263, 274, 277, 282, 296, 303, 307, 309, 350, 362, 367, 368, 384, 385, 389, 394	40	Includes articles on medical error, medication error, error systems, incident reporting and management, human errors and human factors
Culture	15, 25, 57, 67, 74, 104, 111, 112, 116, 117, 122, 142, 144, 155, 161, 171, 190, 223, 227, 251, 262, 322, 341, 348, 359, 386	26	Includes articles on organisational, professional and team aspects of culture, change, and cultural attributes and characteristics
Legislative matters	33, 34, 50, 54, 58, 66, 92, 109, 110, 128, 163, 167, 182, 183, 184, 185, 240, 247, 252, 285, 286, 337, 371	23	Includes articles on legal aspects of safety including litigation, malpractice and insurance
Education, training	6, 9, 24, 56, 80, 84, 90, 96, 100, 101, 192, 193, 196, 198, 199, 210, 241, 298, 318, 364	20	Includes articles on patient education, staff education, training, competencies and standards

Discussion

We identified five categories covering 168 articles, or 42% of the total. The majority of articles (n=228, or 58%) did not fall into any readily-assignable category, which is perhaps indicative of the complexity of this topic area. They were often articles or general commentaries covering areas of interest such as macro and micro safety issues, policy issues or policy analysis related to safety and harm, peak bodies' positions on safety and harm, the implementation of safety programs or the cost of programs. There were also articles on topics such as teams, root cause analysis, communication and leadership. Some articles covered several of these types of ideas and hence the problem with classifying them.

- 1 Abrahamsen, C. (2002). "Revisit patient safety initiatives." *Nursing Management* 33(6): 47-8.**

Abstract Updated CMS and JCAHO patient safety recommendations cause health care facilities to question their existing policies and procedures.

- 2 Abrahamsen, C. (2003). "Tech update. Patient safety: take the informatics challenge." *Nursing Management*. 34(4): 48-51.**

Abstract To provide safe, efficient patient care, keep pace with the ever-evolving world of nursing informatics.

- 3 Adra, M. and E. L. Decker (2003). "Patient safety mandates: a means to an end?" *American Journal of Health-System Pharmacy* 60(13): 1379-81.**

- 4 Adye, B. (2001). "Quality surgery begets patient safety." *American Journal of Surgery* 181(5): 389-92.**

- 5 Affonso, D. D. and D. Doran (2002). "Cultivating discoveries in patient safety research: a framework." *International Nursing Perspectives*. 2(1): 33-47.**

Abstract Introduction: A science of patient safety is rapidly evolving under public pressure to discover new and better ways to deliver patient care more safely. This paper proposes a new vision of patient safety that moves beyond the predominant themes of error detection and risk management to a broader perspective of what constitutes patient safety. A conceptual framework is presented to guide innovations in patient safety research, practice and education., Main issue: In this new vision, patient safety embodies protecting people from harm (real or potential) and nurturing the human capacity for life sustenance through processes that assist, heal and enhance responses toward health and well being when providing care for experiences with diseases, illness and health-related events. A conceptual framework is proposed that identifies four action blocks for patient safety research, education and practice. These include a) building technological tools to create safer ways for dealing with drugs and devices, b) applying human factors design to create safer work environments, c) reforming organizational culture to create the conditions for critical thinking, ethical practice, and opportunities for learning, and d) delivering processes to optimize safe care. Four categorical outcomes are targeted for measurement in this model: quality care; optimal communications & working relationships; evidence based practice to transform current clinical services, and establishment of premier teaching/learning environments for educating a new generation of health scientists and health providers accountable to patient safety., Conclusion: The conceptual framework establishes a holistic agenda for scholarship and practice that transcends disciplinary boundaries.

- 6 **Agrawal, J. and J. P. Rising (2002). "Resident education and patient safety." American Family Physician 66(8): 1569-70, 1572, 1575.**
- 7 **Alhand, E. A. (2001). "Alhand: patient safety is a financial issue." Healthcare Financial Management 55(9): 30, 32-4, 36.**
- 8 **Anthony, M. K. and G. Preuss (2002). "Models of care: the influence of nurse communication on patient safety." Nursing Economics 20(5): 209-15, 248.**
- 9 **Anthony, R., F. Miranda, Z. Mawji, R. Cerimele, R. Davis and S. Lawrence (2003). "John M. Eisenberg Patient Safety Awards. The LVHHN patient safety video: patients as partners in safe care delivery." Joint Commission Journal on Quality & Safety 29(12): 640-5.**

Abstract BACKGROUND: In fall 2002, Lehigh Valley Hospital and Health Network (LVHHN), an 800-bed, three-site academic community hospital, embarked on an initiative to produce an educational patient safety video. IMPLEMENTING THE INITIATIVE: The video addresses six topics relevant to optimum patient safety: treatment plan, medication safety, falls, surgical site identification, hand washing, and discharge planning. Each segment outlines strategies that patients may employ or observations they should make to improve patient safety. RESULTS: Analysis of the patient survey data, which were based on 217 surveys, indicated that patients felt more comfortable talking with their health care workers about questions or concerns after viewing the video and that they rated their knowledge of patient safety higher. Patients generally rated the six sections as helpful. DISCUSSION: The video was intended to become an important step in the preadmission process. Releasing the video to patients and staff helped to normalize some practices that initially were not comfortable for staff (repeatedly asking an inpatient for his or her name and date of birth before administering all medications) or patients (inquiring whether a staff member has washed his or her hands). Additional methods were in development to share the video with current and prospective patients and assess its impact. The LVHHN patient safety council plans to share the video with the community at large.

- 10 **Arceci, R. J. (2003). "The challenge and cost of patient safety." Journal of Pediatric Hematology/Oncology 25(10): 757-8.**
- 11 **Assael, L. A. (2003). "Patient safety in anesthesia practice: partnerships that make the impossible routine." Journal of Oral & Maxillofacial Surgery 61(9): 981-2.**
- 12 **Astion, M. L., K. G. Shojania, T. R. Hamill, S. Kim and V. L. Ng (2003). "Classifying laboratory incident reports to identify problems that**

jeopardize patient safety." American Journal of Clinical Pathology 120(1): 18-26.

Abstract We developed a laboratory incident report classification system that can guide reduction of actual and potential adverse events. The system was applied retrospectively to 129 incident reports occurring during a 16-month period. Incidents were classified by type of adverse event (actual or potential), specific and potential patient impact, nature of laboratory involvement, testing phase, and preventability. Of 129 incidents, 95% were potential adverse events. The most common specific impact was delay in receiving test results (85%). The average potential impact was 2.9 (SD, 1.0; median, 3; scale, 1-5). The laboratory alone was responsible for 60% of the incidents; 21% were due solely to problems outside the laboratory's authority. The laboratory function most frequently implicated in incidents was specimen processing (31%). The preanalytic testing phase was involved in 71% of incidents, the analytic in 18%, and the postanalytic in 11%. The most common preanalytic problem was specimen transportation (16%). The average preventability score was 4.0 (range, 1-5; median, 4; scale, 1-5), and 94 incidents (73%) were preventable (score, 3 or more). Of the 94 preventable incidents, 30% involved cognitive errors, defined as incorrect choices caused by insufficient knowledge, and 73% involved noncognitive errors, defined as inadvertent or unconscious lapses in expected automatic behavior.

13 Bagian, J. P. (2001). "Patient safety--the VA's experience." Michigan Health & Hospitals 37(4): 62-3.

Abstract An overarching principle of medicine is "First Do No Harm." Indeed, as the Institute of Medicine recently highlighted, without safety, there is no quality. The Veterans Health Administration of the Department of Veterans Affairs (VA), the nation's largest integrated health system, has made a commitment to safe patient care. Programmatic responsibility for supporting this commitment resides in the National Center for Patient Safety (NCPS).

14 Bagian, J. P. (2002). "James P. Bagian on patient safety initiatives. Interview by Deborah Mears." Journal for Healthcare Quality 24(1): 15-6, 24.

Abstract James P. Bagian, MD, is director of the Veterans Health Administration (VHA) National Center for Patient Safety (NCPS). With a focus on systems and an emphasis on "prevention not punishment," NCPS is working to improve patient safety, prevent health care errors, and nurture a culture of safety throughout the 173 VHA medical centers. Previously, Dr. Bagian served as deputy director of the Regional and State Programs Division, Office of Mobile Sources, Environmental Protection Agency. From 1980 to 1995, Dr. Bagian served as a NASA astronaut. He took part in both the planning and provision of emergency medical and rescue support for the

first six Space Shuttle flights. In 1986, Dr. Bagian served as an investigator for the Space Shuttle Challenger accident. A veteran of two space flights (STS-29 in 1989 and STS-40 in 1991), Dr. Bagian has logged more than 337 hours in space. Dr. Bagian is currently an adjunct assistant professor of military and emergency medicine at the Uniformed Services University of Health Sciences at F. Edward Herbert School of Medicine and also a clinical assistant professor of preventive medicine and community health at the University of Texas Medical Branch. He is a Colonel in the U.S. Air Force Reserve where he is a pararescue flight surgeon with the 920th Air Rescue Group. He has received the American Medical Association's Nathan S. Davis Award for outstanding public service in the advancement of public health. The NCPS received the 2001 Innovations in American Government Award given by the Institute for Government Innovation at the John F. Kennedy School of Government of Harvard University. The NCPS was the only federal organization to be so identified in 2001.

15 Bagian, J. P. and J. W. Gosbee (2000). "Developing a culture of patient safety at the VA." *Ambulatory Outreach*: 25-9.

Abstract Patient safety is a topic that has become prominent in the minds of many, both within and outside the healthcare field over the past several months. But in fact, literature in medical journals describing this topic goes back decades. However, studying these issues is only the first step towards developing useful and practical tools to address errors and does little to change the safety culture that underlies these systems. The VA has taken several steps towards a safety culture and the development and implementation of tools, such as: 1) error reporting mechanisms; 2) tools for root cause and corrective action; and 3) management tools (e.g., safety awards).

16 Bagian, J. P., C. Lee, J. Gosbee, J. DeRosier, E. Stalhandske, N. Eldridge, R. Williams and M. Burkhardt (2001). "Developing and deploying a patient safety program in a large health care delivery system: you can't fix what you don't know about." *Joint Commission Journal on Quality Improvement* 27(10): 522-32.

Abstract BACKGROUND: The Veterans Administration (VA) identified patient safety as a high-priority issue in 1997 and implemented the Patient Safety Improvement (PSI) initiative throughout its entire health care system. In spring 1998 the External Panel on Patient Safety System Design recommended alternative methods to enhance reporting and thereby improve patient safety. REDESIGNING THE PSI INITIATIVE: The VA began redesigning the PSI initiative in late 1998. The dedicated National Center for Patient Safety (NCPS) was established. Using the panel's recommendations as a jumping-off point, NCPS began to identify known and suspected obstacles to implementation (such as possible punitive consequences and

additional workload). NCPS adopted a prioritization scoring method, the Safety Assessment Code (SAC) Matrix, for close calls and adverse events, which requires assessing the event's actual or potential severity and the probability of occurrence. The SAC Matrix specifies actions that must be taken for given scores. Use of the SAC score permits a consistent handling of reports throughout the VA system and a rational selection of cases to be considered. A system for performing a root cause analysis (RCA) was developed to guide caregivers at the frontline. This system includes a computer-aided tool, a flipbook containing a series of six questions, and reporting of the findings back to the reporter. The final step requires that the facility's chief executive officer "concur" or "nonconcur" on each recommended corrective action. The RCA team outlines how the effectiveness of the corrective action will be evaluated to verify that the action has had the intended effect, and it ascertains that there were no unintended negative consequences. IMPLEMENTATION: Based on successful implementation in two pilots, full-scale national rollout to the 173 facilities began in April 2000 and was concluded by the end of August 2000. NCPS supplied 3 days of training for individuals at each facility. The training included didactic components, an introduction to human factors engineering concepts, and small- and large-group simulation exercises. Facility leaders were reminded of the necessity to reinforce the point that assignment to an RCA team was considered an important duty. DISCUSSION: It is essential to design and implement a system that takes into account the concerns of the frontline personnel and is aimed at being a tool for learning and not accountability. The system must have as its primary focus the dissemination of positive actions that reduce or eliminate vulnerabilities that have been identified, not a counting exercise of the number of reports. [References: 7]

17 Baldwin, F. D. (2002). "It's all in the wrist: bedside bar-code scanning and unit-dose drug packaging are keys to patient safety, and more." *Healthcare Informatics*. 19(10): 57-9.

18 Ball, M. J. and J. V. Douglas (2002). "Redefining and improving patient safety." *Methods of Information in Medicine* 41(4): 271-6.

Abstract OBJECTIVES: The Institute of Medicine (IOM) has focused attention on patient safety in the United States. Other countries share these concerns. METHODS: Governmental agencies and professional organizations are redefining approaches to safety, calling upon the use of information and communication technology as an enabler and expanding the range of evidence admissible in documenting success. RESULTS: Efforts to understand medical errors have used retrospective chart review, incident reporting, and computerized surveillance; the result is an evolving picture of the number, nature, and cause of errors. Approaches used to prevent errors include computerized physician order entry, decision support tools, computerized monitoring, and evidence-based practice; varying levels of

evidence document their success. CONCLUSIONS: Technology offers challenging capabilities, not simple solutions. New evidence and new tools demand new approaches and attention to human factors.

19 Ball, M. J. and J. V. Douglas (2002). "IT, patient safety, and quality care." *Journal of Healthcare Information Management* 16(1): 28-33.

Abstract The growing understanding of medical errors as systemic in nature underscores the importance of analyzing and redesigning systems. Best practices in medication safety that promise rapid payback include computerized physician order entry, ongoing tracking and benchmarking, and the creation by leadership of nonpunitive environments where this new culture of safety can thrive.

20 Ball, M. J., C. Weaver and P. A. Abbott (2003). "Enabling technologies promise to revitalize the role of nursing in an era of patient safety." *International Journal of Medical Informatics* 69(1): 29-38.

Abstract The application of information technology (IT) in health care has the potential to transform the delivery of care, as well as the health care work environment, by streamlining processes, making procedures more accurate and efficient, and reducing the risk of human error. For nurses, a major aspect of this transformation is the refocusing of their work on direct patient care and away from being a conduit of information and communication among departments. Several of the technologies discussed, such as physician order entry and bar code technology, have existed for years as standalone systems. Many others are just being developed and are being integrated into complex clinical information systems (CISs) with clinical decision support at their core. While early evaluation of these systems shows positive outcome measurements, financial, technical, and organizational hurdles to widespread implementation still remain. One major issue is defining the role nurses, themselves, will play in the selection and implementation of these systems as they become more steeped in the knowledge of nursing informatics. Other challenges revolve around issues of job satisfaction and the attraction and retention of nursing staff in the midst of a serious nursing shortage. Despite these concerns, it is expected that, in the long run, the creation of an electronic work environment with systems that integrate all functions of the health care team will positively impact cost-effectiveness, productivity, and patient safety while helping to revitalize nursing practice. Copyright 2002 Elsevier Science Ireland Ltd. [References: 21]

21 Barach, P. (2003). "The end of the beginning: lessons learned from the patient safety movement." *Journal of Legal Medicine* 24(1): 7-27.

22 Barach, P. and S. D. Small (2001). "Enhancing patient safety: beginning the dialogue in health services research." *Journal of Health Services & Research Policy* 6(2): 67-9.

23 Barnard, B. M. (2002). "Lessons from others: integration in patient safety programs." *American Journal of Infection Control* 30(5): 259-60.

24 Barrett, J., C. Gifford, J. Morey, D. Risser and M. Salisbury (2001). "Enhancing patient safety through teamwork training." *Journal of Healthcare Risk Management* 21(4): 57-65.

Abstract The effective reduction of medical errors depends on an environment of safety for patients in both clinically-based and systems-oriented arenas. Formal teamwork training is proposed as a systems approach that will achieve these ends. In a study conducted by Dynamics Research Corporation, weaknesses and error patterns in Emergency Department teamwork were assessed, and a prospective evaluation of a formal teamwork training intervention was conducted. Improvements were obtained in five key teamwork measures, and most importantly, clinical errors were significantly reduced.

25 Basanta, W. E. (2003). "Changing the culture of patient safety and medical errors: a symposium introduction and overview." *Journal of Legal Medicine* 24(1): 1-6.

26 Battles, J. B. and M. A. Keyes (2002). "Technology and patient safety: a two-edged sword." *Biomedical Instrumentation & Technology* 36(2): 84-8.

Abstract The Agency for Healthcare Research and Quality (AHRQ) is now the world's largest funder of patient safety research. Part of AHRQ's research focus is to examine evidence to help determine which technologies can be used to effectively minimize harm and improve patient safety. The report of the Institute of Medicine (IOM). To Err is Human stressed the importance of automating repetitive, time-consuming, and error-prone tasks through the use of technology. While automation holds substantial promise for improved safety, error experts caution that all technology introduces the potential for new and different errors. It is critical that any new automated system be tested in actual operational settings to determine what, if any, unanticipated failures exist. Field-based research is essential in the emerging field of patient safety to create the evidence as to which technologies actually improve patient safety and those that may well increase the potential for harm.

27 Beach, C., P. Croskerry and M. Shapiro (2003). "Profiles in patient safety: emergency care transitions." *Academic Emergency Medicine*. 10(4): 364-7.

Abstract A 59-year-old man presented to the emergency department (ED) with the chief complaint of "panic attacks." In total, he was evaluated by 14 faculty physicians, 2 fellows, and 16 residents from emergency medicine, cardiology, neurology, psychiatry, and internal medicine. These multiple transitions were responsible, in part, for the perpetuation of a failure to accurately diagnose the patient's underlying medical illness. The case illustrates the discontinuity of care that occurs at transitions, which may threaten the safety and quality of patient care. Considerable effort must be directed at making transitions effective and safe. Recommendations to improve transitions include a heightened awareness of cognitive biases operating at these vulnerable times, improving team situational awareness and communication, and exploring systems to facilitate effective transfer of relevant data.

28 Bender, N. L. (2000). "Action to improve patient safety: "safety" prone health care systems." *Ambulatory Outreach*: 6-13.

Abstract The error prone health care system is complex, tightly coupled and hierarchical. Who's at fault when an error occurs? How do we keep patients safe and prevent errors in this error prone system? There will continue to be health care mistakes, it is inevitable in an error prone system but things can be done to increase patient safety. The communication between and among health care providers and patients that work toward building better relationship ties have demonstrated the potential for greater patient safety. In fact, starting from the discussion point of patient safety, rather than starting from error, has the most profound chance to benefit patients. An overview of efforts to increase patient safety through research and clinical practice are discussed. Ironically, examples of errors in health care have caught the attention of the American public. In the long run, patient safety must be the intrinsic cause for improvement. Many errors in health care are unknown and the total number may be unknowable. A well-known study from Harvard reported that about 4 percent of hospitalized patients had iatrogenic injuries; 13 percent of those were fatal (Leape et al, 1991). The principle investigator in that study, Dr. Lucien Leape, said "Errors are system flaws, not character flaws". In 95 percent of the cases, errors are not the result of carelessness or lack of concern. The worse errors are sometimes made by the best doctors and nurses (Leape et al, 1991). Although technology is helping in some ways, it is also causing a growing risk of new unexpected adverse events. This is a problem that must be addressed. Even though not a popular problem in health care, if not critically tackled, it will get worse in the future. This article examines: why this problem needs to be addressed, what has been done so far, and the major components of health care, systems, technology, and humans, that make it error prone and complex. This article will also examine these three areas of interest where mistakes are made.

29 Benjamin, D. M. (2003). "Reducing medication errors and increasing patient safety: case studies in clinical pharmacology." *Journal of Clinical Pharmacology* 43(7): 768-83.

Abstract Today, reducing medication errors and improving patient safety have become common topics of discussion for the president of the United States, federal and state legislators, the insurance industry, pharmaceutical companies, health care professionals, and patients. But this is not news to clinical pharmacologists. Improving the judicious use of medications and minimizing adverse drug reactions have always been key areas of research and study for those working in clinical pharmacology. However, added to the older terms of adverse drug reactions and rational therapeutics, the now politically correct expression of medication error has emerged. Focusing on the word error has drawn attention to "prevention" and what can be done to minimize mistakes and improve patient safety. Webster's New Collegiate Dictionary has several definitions of error, but the one that seems to be most appropriate in the context of medication errors is "an act that through ignorance, deficiency, or accident departs from or fails to achieve what should be done." What should be done is generally known as "the five rights": the right drug, right dose, right route, right time, and right patient. One can make an error of omission (failure to act correctly) or an error of commission (acted incorrectly). This article now summarizes what is currently known about medication errors and translates the information into case studies illustrating common scenarios leading to medication errors. Each case is analyzed to provide insight into how the medication error could have been prevented. "System errors" are described, and the application of failure mode effect analysis (FMEA) is presented to determine the part of the "safety net" that failed. Examples of reengineering the system to make it more "error proof" are presented. An error can be prevented. However, the practice of medicine, pharmacy, and nursing in the hospital setting is very complicated, and so many steps occur from "pen to patient" that there is a lot to analyze. Implementing safer practices requires developing safer systems. Many errors occur as a result of poor oral or written communications. Enhanced communication skills and better interactions among members of the health care team and the patient are essential. The informed consent process should be used as a patient safety tool, and the patient should be warned about material and foreseeable serious side effects and be told what signs and symptoms should be immediately reported to the physician before the patient is forced to go to the emergency department for urgent or emergency care. Last, reducing medication errors is an ongoing process of quality improvement. Faculty systems must be redesigned, and seamless, computerized integrated medication delivery must be instituted by health care professionals adequately trained to use such technological advances. Sloppy handwritten prescriptions should be replaced by computerized physician order entry, a very effective technique for reducing prescribing/ordering errors, but another far less expensive yet effective change would involve

writing all drug orders in plain English, rather than continuing to use the elitists' arcane Latin words and shorthand abbreviations that are subject to misinterpretation. After all, effective communication is best accomplished when it is clear and simple.

- 30 Benson, H. and L. C. Barbret (2002). "Position paper. Impact on quality and patient safety: the new shortage of healthcare professionals." *Journal for Healthcare Quality*. 24(2): 45-7.**
- 31 Berci, G. (1997). "How new technology affects practice and patient safety." *Journal of the American Association of Gynecologic Laparoscopists* 4(4): 419-21.**
- 32 Berman, S. (2000). "The AMA clinical quality improvement forum on addressing patient safety." *Joint Commission Journal on Quality Improvement* 26(7): 428-33.**

Abstract BACKGROUND: More than 200 health care policy makers and researchers, clinicians, quality professionals, and other representatives of health care organizations, government, and academia attended the Division of American Medical Association Clinical Quality Improvement's conference, "Addressing Patient Safety," April 28, 2000, in Chicago--the first national conference to respond to the recent Institute of Medicine (IOM) report, *To Err Is Human: Building a Safer Health System*. ADDRESSING PATIENT SAFETY--PUBLIC AND PRIVATE PERSPECTIVES: John M. Eisenberg, MD, stated that research on errors is needed to describe the scope and nature of the problem, understand the barriers to and benefits of improvement, and develop and test strategies for improvement. Kenneth W. Kizer, MD, MPH, stated that the National Quality Forum will develop a compendium of best practices and will develop core measures for serious adverse events, and health care organizations and government health programs should act now to make a clear organizational commitment to patient safety, create a nonpunitive health care culture of safety, and implement known safe medication practices. Alan R. Nelson, MD, stated that the IOM report places its emphasis on continuous quality improvement and technology that can be used to mitigate the risks in a complex health system. HOSPITAL AND ACCREDITATION AGENCY ACTIVITIES ON PATIENT SAFETY ISSUES: Donald M. Nielsen, MD, discussed the American Hospital Association's (AHA's) Medication Safety Initiative, which promised to provide its members with successful practices, tools, and resources and to track progress of implementation of the recommended successful practices. Dennis S. O'Leary, MD, stated that when a hospital reports a sentinel event, the hospital is expected to implement improvements to reduce risk and monitor their effectiveness. The National Committee for Quality Assurance is considering changes to its accreditation standards to further address patient safety.

- 33 Beu, B. (2002). "Current federal legislation on patient safety." *AORN Journal* 76(3): 516-9.
- 34 Beu, B. (2003). "Patient safety legislation." *AORN Journal* 78(4): 667-9.
- 35 Beyea, S. C. (2002). "Finding patient safety Internet resources." *AORN Journal* 75(6): 1171-3.
- 36 Beyea, S. C. (2002). "Patient safety in surgical settings: what do we know?" *AORN Journal* 75(1): 200-2.
- 37 Beyea, S. C. (2002). "Patient safety first. Ensuring correct site surgery." *AORN Journal*. 76(5): 880-2.
- 38 Beyea, S. C. (2002). "Patient safety first. Addressing problems with medical devices." *AORN Journal*. 76(4): 668-70.
- 39 Beyea, S. C. (2002). "Patient safety first. Systems that reduce the potential for patient identification errors." *AORN Journal*. 76(3): 504-6.
- 40 Beyea, S. C. (2002). "Patient safety first. A call to action for perioperative nurses." *AORN Journal*. 75(6): 1168-70.
- 41 Beyea, S. C. (2002). "Patient safety first. Nurses making a difference one life at a time." *AORN Journal*. 75(5): 1005-7.
- 42 Beyea, S. C. (2003). "Patient identification--a crucial aspect of patient safety." *AORN Journal* 78(3): 478, 481-2.
- 43 Beyea, S. C. (2003). "The national patient safety goals and their implications for perioperative nurses." *AORN Journal* 77(6): 1241-5.
- 44 Beyea, S. C. (2003). "Tracking medical devices to ensure patient safety." *AORN Journal* 77(1): 192-4.

Abstract Registered nurses in perioperative settings and managers of perioperative departments must work together to implement policies and procedures to ensure compliance with these very important federal regulations. If the information is not recorded in the proper manner and shared with the manufacturer, patients' safety is at risk. Without the ability to contact physicians and patients, manufacturers cannot alert individuals appropriately if problems arise with a certain device. Tracking devices in the correct manner ensures that patients can be notified expediently. Nurses and managers should examine their current practices to ensure that they are consistent with federal regulations. A regular assessment should be conducted to ensure that tracking forms are completed in an accurate, timely

manner, that permission to release a patient's social security number is obtained, and that the hospital is compliant with the FDA's most up-to-date list of devices that must be tracked. All perioperative staff members must receive education about the tracking process in their particular institution and receive updates when the process or FDA regulations change. Maintain patient safety by ensuring that the medical device tracking process is followed accurately and meets federal regulations.

45 Beyea, S. C. (2003). "Patient safety first. Keeping patients safe from infection." AORN Journal. 78(1): 133-4.

46 Billings, C. E. and D. D. Woods (2001). "Human error in perspective. The patient safety movement." Postgraduate Medicine 109(1): 13-7.

47 Blair, P. D. (2003). "Continuous assessment and regular communication foster patient safety." Nursing Management 34(8): 22-3, 60.

Abstract Develop strategies to promote patient safety despite staffing crises.

48 Blendon, R. J., C. M. DesRoches, M. Brodie, J. M. Benson, A. B. Rosen, E. Schneider, D. E. Altman, K. Zapert, M. J. Herrmann and A. E. Steffenson (2002). "Patient safety: views of practicing physicians and the public on medical errors." New England Journal of Medicine. 347(24): 1933-40.

49 Blewett, L. A., S. T. Parente, E. Peterson and M. D. Finch (2003). "The role of the private sector in monitoring health care quality and patient safety." Joint Commission Journal on Quality & Safety 29(8): 425-33.

Abstract BACKGROUND: As payers, purchasers, and providers, both the public and private sectors have a stake in developing sound methods of measuring health care quality and patient safety. However, the role of the private sector in a national quality monitoring system remains largely underdeveloped. PRIVATE SECTOR ROLE IN HEALTH CARE QUALITY MONITORING: There have been some attempts to pool private-sector data through health care industry efforts to measure and monitor the quality of health care services. Yet despite a number of public/private partnerships, no standard method exists for measuring and monitoring health care quality and safety across public and private payers. THE AHRQ WORKSHOP ON PRIVATE-SECTOR QUALITY MONITORING: The Agency for Healthcare Research and Quality (AHRQ) sponsored a workshop in fall 2000 to address the private sector's role in monitoring quality in the health care system. National experts developed a conceptual framework and recommendations on the design and scope of a private-sector data monitoring system. Ten key attributes of the monitoring system, such as timeliness of reports, flexibility, efficiency, and linkability, were identified. Barriers and gaps to the

development of such a system include the cost of data collection, the diversity of the units of data collection, data privacy, and limitations of administrative data elements. SUMMARY: A comprehensive, public/private data collection system would address the multidimensional nature of quality and use data to effectively represent this complexity to the extent possible.

- 50 Blouin, A. S. and N. J. Brent (2000). "Legal insights. Above all, do no harm: patient and staff safety." *Journal of Nursing Administration*. 30(12): 571-3.**
- 51 Bogner, M. S. (2003). "Patient safety focus. Helping to reduce human error in health care technology." *Biomedical Instrumentation & Technology*. 37(1): 61-4.**
- 52 Bonifazi, W. L. (2000). "Seeking better ways to improve patient safety." *Or Manager* 16(5): 1, 13-4.**
- 53 Bonomo, Y. and G. Bowes (2001). "Putting harm reduction into an adolescent context." *Journal of Paediatrics & Child Health* 37(1): 5-8.**

Abstract Drug use is now widespread amongst Australian youth. Substance abuse and dependence are becoming increasingly significant health problems. Approximately 50% of 17-year-old Australians report regular consumption of alcohol and nearly 30% report tobacco smoking. The age of onset of substance use is reported to be decreasing. Between 1993 and 1995 the proportion of heroin users who had used the drug before the age of 16 years increased from 2% to 14%. The debate about youth substance use tends to be polarized between the views of Zero Tolerance and Legalization of drugs. The harm reduction approach spans between these two extremes. Examples of harm reduction strategies, such as education campaigns on safe injecting and needle exchange programs, have been effective in curbing the spread of blood-borne viruses such as HIV amongst intravenous drug using youth. The harm reduction approach, taking social context and developmental stage of the individual into account, may also be applied to adolescents at the less extreme end of the substance use spectrum. It is proposed that the harm reduction framework used in this way enables a rational, relevant and consistent response to contemporary youth substance use, aiming to minimize drug related harm.

- 54 Bovbjerg, R. R., R. H. Miller and D. W. Shapiro (2001). "Paths to reducing medical injury: professional liability and discipline vs. patient safety-- and the need for a third way." *Journal of Law, Medicine & Ethics* 29(3-4): 369-80.**
- 55 Bower, J. O. (2002). "Designing and implementing a patient safety program for the OR." *AORN Journal* 76(3): 452-6.**

Abstract Surgery has a high potential for adverse outcomes. An error involving a retained retractor caused perioperative nurses at the University of Washington Medical Center, Seattle, to take another look at their department's patient safety practices and risk management procedures. Using another department's successful program as a model, the nurses considered the frameworks of risk management, quality improvement, and OR culture to develop a new patient safety quality improvement program for the OR. This article details the process of designing and implementing the program, which has energized staff members, enhanced teamwork, and resulted in improved patient outcomes.

- 56 Bradley-Springer, L. (1996). "Patient education for behavior change: help from the Transtheoretical and Harm Reduction models." *Journal of the Association of Nurses in AIDS Care* 7(Suppl 1): 23-33; discussion 34-40.**

Abstract Promoting healthy behaviors at all levels of prevention is an important component of nursing care in the HIV epidemic. This paper explores two models that can be used to support behavior change efforts: the Transtheoretical Model, which describes stages in the change process, and the Harm Reduction Model, which offers an incremental approach to helping clients move toward safer and healthier habits. A review of the literature shows that these holistic and caring models can be combined effectively to assist clients who are dealing with HIV-related issues. The resulting theory-based approach can help nurses maintain consistency and direction in educational interventions for behavior change.

- 57 Brehm, J., P. Ruddick and T. Lundquist (2003). "The culture of safety. Clinical knowledge and even the right IT aren't enough to guarantee patient safety. A fundamental cultural shift is required." *Health Management Technology* 24(7): 41-2.**

- 58 Brennan, T. A. and M. M. Mello (2003). "Patient safety and medical malpractice: a case study." *Annals of Internal Medicine* 139(4): 267-73.**

Abstract The system of tort liability for medical malpractice is frequently criticized for poorly performing its theoretical functions of compensating injured patients, deterring negligence, and dispensing corrective justice. Working from an actual malpractice case involving serious injury but no apparent negligence, the authors explore these criticisms from the perspectives of both the plaintiff-patient and the defendant-physician. They then examine the tort system through the lens of patient safety and conclude that the tensions between the system and patient safety initiatives suggest a need to reexamine our attachment to adversarial dispute resolution in health

care. They propose targeted reforms that could improve the functioning of the system and create incentives to improve safety and quality.

59 Brett, J. and J. Bocala-Korbas (2002). "Reporting of mistakes must be encouraged 'National Patient Safety Agency and the reporting of errors' (Vol 11(12): 808-10)." British Journal of Nursing. 11(16): 1058.

60 Briggs, B. (2003). "Electronic records. Protection on the road to patient safety." Health Data Management 11(5): 34-8, 40.

61 Brocato, J. and E. F. Wagner (2003). "Harm reduction: a social work practice model and social justice agenda." Health & Social Work 28(2): 117-25.

Abstract Efforts in the United States to eradicate drug use through supply reduction (that is, the War on Drugs) have increasingly violated the principles of social justice and human rights, both locally and globally. This has created ethical conflicts for social workers in policy making, practice, and research. Harm reduction has been conceptualized as a peace movement and is aligned with the humanistic values around which social work is organized. The authors examine how social workers may reduce the ethical conflicts associated with efforts to address substance abuse by adopting a harm reduction approach to policy, practice, and research. They examine current drug policies, the consequences of the policies, and, in particular, how the policies affect social workers as practitioners, agents of social control, and guardians of social justice.

62 Burke, J. P. (2003). "Patient safety: infection control - a problem for patient safety." New England Journal of Medicine 348(7): 651-6.

63 Burrington-Brown, J. (2002). "Working smart: on the line. Leaping ahead with patient safety." Journal of Ahima. 73(4): 59-60.

64 Carthey, J., S. Woodward, S. Adams, M. Fletcher and M. Rejman (2003). "Patient safety. Safe and sound." Health Service Journal 113(5881): suppl 2-6.

65 Carver, P. and J. Roessner (2003). "IHI launches new online quality resource to improve patient safety and care." Medicine on the Net. 9(6): 11-2.

66 Casciotti, J. A. and J. L. Walters (2001). "Military health system patient safety program: a legal foundation for preventing medical errors." Legal Medicine. 12p 29.

- 67 Cassirer, C., D. Anderson, S. Hanson and H. Fraser (2000). "Abusive behavior is barrier to high-reliability health care systems, culture of patient safety." QRC Advisor 17(1): 1-6.**

Abstract Addressing abusive behavior in the medical workplace presents an important opportunity to deliver on the national commitment to improve patient safety. Fundamentally, the issue of patient safety and the issue of abusive behavior in the workplace are both about harm. Undiagnosed and untreated, abusive behavior is a barrier to creating high reliability service delivery systems that ensure patient safety. Health care managers and clinicians need to improve their awareness, knowledge, and understanding of the issue of workplace abuse. The available research suggests there is a high prevalence of workplace abuse in medicine. Both administrators at the blunt end and clinicians at the sharp end should consider learning new approaches to defining and treating the problem of workplace abuse. Eliminating abusive behavior has positive implications for preventing and controlling medical injury and improving organizational performance.

- 68 Catalano, K. A. (2002). "Health policy. JCAHO's National Patient Safety Goals." Surgical Services Management. 8(5): 53-8.**

- 69 Cavorous, C. A. (2003). "Workforce management. Fatigue and patient safety." Journal of Clinical Systems Management. 5(4): 12-3.**

- 70 Chaiken, B. P. (2001). "Information systems & technology. Enhancing patient safety with clinically intelligent physician order entry." Nursing Economics. 19(3): 119-20.**

- 71 Chaiken, B. P. and D. L. Holmquest (2003). "Patient safety: Modifying processes to eliminate medical errors." Nursing Outlook 51(3): S21-4.**

- 72 Classen, D. (2000). "Patient safety, thy name is quality." Trustee 53(9): 12-5, 1.**

Abstract Trustees must take the lead in communicating the importance of an organization-wide quality program. Patient safety is a natural outgrowth of an aggressive and nonpunitive approach to quality.

- 73 Classen, D. C. and P. M. Kilbridge (2002). "The roles and responsibility of physicians to improve patient safety within health care delivery systems." Academic Medicine 77(10): 963-72.**

Abstract A steady stream of high-visibility medical accidents keeps patient safety on the front page of health care. Controversy about the exact size of the medical error problem continues, but there is little debate about the enormous opportunity for improvement in the safety and reliability of health

care. Anesthesia-related deaths have declined from as many as 50 to just 3.4 per million inductions. This level of reliability is on par with the best safety records in other industries and far below those in the rest of health care. Achieving such a level of safety across health care will require considerable effort on the part of health care delivery systems and integration of physicians into such efforts. Indeed, the relationships between physicians, health delivery organizations, and patients lie at the crux of efforts to implement measurable improvements in patient safety. Previous experience of physicians' quality improvement efforts at delivery organizations and the current chaotic evolution of physician-health care delivery system relationships hold little hope for significant improvement in safety. The authors propose a new model of an organizational approach to safety and quality that can be used to accomplish these goals, and outline recommendations for the health care system to begin to alter the relationship between physicians and delivery systems to improve patient safety.

74 Cohen, M. M., M. A. Eustis and R. E. Gribbins (2003). "Changing the culture of patient safety: leadership's role in health care quality improvement." *Joint Commission Journal on Quality & Safety* 29(7): 329-35.

Abstract BACKGROUND: For two decades health care workers have been struggling, with varying degrees of success, to use the principles of continuous quality improvement (CQI) to improve the quality of patient care. The Institute of Medicine report *To Err Is Human* prompted most hospitals to turn their attention to the pandemic of medical errors and to the realization that without changing the culture of blame, and thus releasing an avalanche of information, major improvement would not be possible. This article describes one community hospital's approach to changing its organizational culture and the critical role of leadership in that transformation. THE REALITIES: The places to look for trouble when diagnosing organizational problems are purpose, structure, rewards, helpful mechanisms, relationships, and leadership. Hospitals are professional bureaucracies in that the real power resides with clinical staff. Improvement requires that effective relationships be built within the executive suite. Relationship and team building must be part of the organizational culture. Quality improvement will not occur unless it is clearly aligned with the organization's core objectives. CONCLUSIONS: Managing the five realities is essential to creating a suitable environment for sustaining clinical or more general CQI efforts within health care organizations. This is particularly crucial if the basic culture of the organization is to be changed. All five realities must be addressed on a continual basis, which takes time, and positive outcomes can be expected only over a longer rather than shorter time frame.

75 Cook, A. F., H. Hoas and K. Guttmannova (2003). "Not by technology alone. Project seeks to assess and aid patient safety in rural areas." *Biomedical Instrumentation & Technology* 37(2): 128-30.

76 Cook, R. I. (2001). "The end of the beginning: complexity and craftsmanship and the era of sustained work on patient safety." *Joint Commission Journal on Quality Improvement* 27(10): 507-8.

77 Cook, R. I. (2002). "Patient safety. Safety technology: solutions or experiments?" *Nursing Economics*. 20(2): 80-2.

Abstract The emphasis on technology in improving safety in health care has been pervasive. XXABXX The real problem with safety technology applications is not so much that they possess undesirable side effects but rather that these side effects have been so difficult to discover, characterize, and assess. XXABXX Nurses play an integral role in this discovery and assessment process leading to a safer health care delivery system.

78 Cook, R. I., M. Render and D. D. Woods (2000). "Gaps in the continuity of care and progress on patient safety." *BMJ* 320(7237): 791-4.

79 Coombes, R. (2002). "Is it au revoir to patient safety?" *Nursing Times*. 98(28): 10-1.

Abstract A new directive aims to give nurses in the European Union the freedom to work in any EU country without filling in any pesky registration forms... but at what cost? Rebecca Coombes reports.

80 Cosby, K. S. and P. Croskerry (2003). "Patient safety: a curriculum for teaching patient safety in emergency medicine." *Academic Emergency Medicine* 10(1): 69-78.

Abstract The last decade has witnessed a growing awareness of medical error and the inadequacies of our health care delivery systems. The Harvard Practice Study and subsequent Institute of Medicine Reports brought national attention to long-overlooked problems with health care quality and patient safety. The Committee on Quality of Health Care in America challenged professional societies to develop curriculums on patient safety and adopt patient safety teaching into their training and certification requirements. The Patient Safety Task Force of the Society for Academic Emergency Medicine (SAEM) was charged with that mission. The curriculum presented here offers an approach to teaching patient safety in emergency medicine. [References: 74]

81 Cranfill, L. W. (2003). "Approaches for improving patient safety through a safety clearinghouse." *Journal for Healthcare Quality* 25(1): 43-7.

Abstract Creating this type of a program is a challenge and takes the time and commitment of key players. Most healthcare facilities have had systems and processes in place for years to "ensure quality." Inherent in those systems has been some ability to detect errors and to identify opportunities for improving quality of care. The next evolution of ensuring quality requires healthcare organizations to become far more proactive with error detection and correction systems. How? Becoming more openly and honestly communicative internally is an important first step. That means creating a nonpunitive environment that encourages staff members to report known or suspected problems. To do this most successfully requires not only involving members of the hospital staff who become aware of concerns, but also engaging patients and families as partners in the process. Healthcare organizations can learn much from patients and families about things that actually or almost go wrong. In turn, healthcare organizations owe patients and their families honesty when they know something has gone wrong that could or should have been prevented. Many healthcare organizations throughout the country are struggling with these new expectations from accreditors and consumers about disclosing medical errors to patients (and/or their families). Some may still even be questioning the need and/or the value of doing so. The Lexington VA Medical Center has been disclosing errors for approximately 10 years. The center has also been piloting proactive approaches to identifying and eliminating threats to patient safety (i.e., error-prone systems and processes). VAMC's experiences have demonstrated that both are clearly worth the effort.

82 Cross, M. (2003). "Patient safety. Message in a bottle." *Health Service Journal* 113(5866): 41-2.

83 Curtin, L. L. (2002). "Patient safety and I.T.--it's everyone's concern!" *Seminars for Nurse Managers* 10(2): 136-8.

84 Cushen, N., A. Bacon and M. Roddis (2002). "Using an interactive chemotherapy training package to improve patient safety." *Hospital Medicine (London)* 63(5): 301-3.

Abstract All health-care professionals involved in the use of cytotoxic chemotherapy, if they are to avoid serious harm to patients, can benefit from an interactive training package in the safe use of these drugs. This article discusses a pilot study of a training CD-ROM which was undertaken in a cancer unit.

85 Davis, R. M. and P. Barach (2000). "Enhancing patient safety and reducing medical error. The role of preventive medicine." *American Journal of Preventive Medicine* 19(3): 202-5.

86 Delbanco, S. (2001). "Leaping into patient safety." Michigan Health & Hospitals 37(2): 28-30.

Abstract Last November, the Leapfrog Group unveiled an ambitious effort to improve patient safety across the nation. Sponsored by the Business Roundtable, the Leapfrog Group is a consortium of Fortune 500 companies and other large private and public health care purchasers. The group is working to mobilize employer purchasing power to affect big "leaps" in patient safety by educating consumers and rewarding health care providers who meet defined safety standards.

87 DeWolf, L. K., M. J. Hatlie, G. Pugliese and N. J. Wilson (2003). "What is working in patient safety?" Joint Commission Journal on Quality & Safety 29(7): 327-8, 325.

Abstract The authors discuss the purpose and themes of Partnership Symposium 2002: Smart Designs for Patient Safety, which was held in Washington, DC, October 14-16, 2002.

88 Diamond, L., K. Fickenscher, M. Fitzpatrick, C. Fox, J. Foy, J. King, G. Mecklenburg, M. R. Rocklage, T. Royer, B. Sadler, R. Spoltore and C. Welch (2001). "CEO/supplier dialogue on patient safety. Panel discussion." Health Forum Journal 44(6): 45-55.

Abstract Leaders and vendors candidly explore new opportunities for industry standards, work-force training, and patient-focused care.

89 Diamond, L. H. (2000). "Patient safety: the challenges and opportunities for the ESRD program." Advances in Renal Replacement Therapy 7(4 Suppl 1): S100-4.

Abstract The Institute of Medicine's report, issued December 1999, entitled "To Err is Human; Building a Safer System," describes the magnitude of the problem of errors in medicine and charts an agenda for improving patient safety. The essential features include establishing patient safety as a national focus, identifying and learning from errors, passing legislation to protect reporting, and adopting the patient safety sciences. The presidential report of February 2000, issued by the Quality Interagency Task Force (QITF), formulates a federal government response across all federal agencies. The challenges and opportunities facing the end-stage renal disease (ESRD) Program and the ESRD Network Organizations include taking a leadership role, raising awareness, conducting educational programs, and facilitating making errors visible, for the purposes of learning and improvement. Copyright 2000 by the National Kidney Foundation, Inc.

- 90 Dickey, N. W. (2002). "Patient safety and medical education: a partnership for the future." Texas Medicine 98(8): 55-9.**
- 91 Dickey, N. W. and C. A. Ley (2000). "Patient safety: renewing the call for action." QRC Advisor 16(10): 1-4.**
- 92 Dimond, B. (2001). "Legal issues. The National Patient Safety Agency." British Journal of Midwifery. 9(8): 511-4.**

Abstract Following its report on An Organisation with a Memory the Department of Health has now published plans to set up a National Patient Safety Agency. These are considered and their implications for midwives discussed.

- 93 Dimond, B. (2002). "National Patient Safety Agency and the reporting of errors." British Journal of Nursing 11(12): 808-10.**
- 94 Dunn, J. D. (2000). "Patient safety in America: comparison and analysis of national and Texas patient safety research." Texas Medicine 96(10): 66-74.**

Abstract The Institute of Medicine (IOM) report on patient safety in late 1999, To Err is Human, attracted great national attention when it announced that 44,000 to 98,000 patients die each year in American hospitals because of patient safety problems and that a patient safety crisis exists in American health care and American hospitals. The report relied heavily on a Harvard group's study of hospital care in New York in 1984 and another Harvard group's study of hospital care in Utah and Colorado in 1992. This article reviews and compares American hospital inpatient safety research and corresponding Texas hospital patient safety research. It focuses on the major patient safety research of the last two decades that led to the IOM report, and compares information from the major studies with the work of the Texas Medical Foundation (TMF). The Harvard patient safety studies that have received great national attention are compared here with a stronger, broader, and more robust database from TMF, the peer review organization for Texas. The TMF studies of 300,000 patient admissions during 3 years in more than 400 hospitals are compared with the Harvard studies of 30,000 charts in 51 hospitals in New York in 1984 and 15,000 charts in 28 hospitals in Utah and Colorado in 1992. The TMF data and a close look at the Harvard data show a positive patient safety picture that has been ignored too often in the current debate, with low rates of significant injury and death caused by any medical care or hospital care safety or negligence problems. [References: 28]

- 95 Dzik, W. H., H. Corwin, L. T. Goodnough, M. Higgins, H. Kaplan, M. Murphy, P. Ness, I. A. Shulman and R. Yomtovian (2003). "Patient safety**

and blood transfusion: new solutions." *Transfusion Medicine Reviews* 17(3): 169-80.

Abstract Current risk from transfusion is largely because of noninfectious hazards and defects in the overall process of delivering safe transfusion therapy. Safe transfusion therapy depends on a complex process that requires integration and coordination among multiple hospital services including laboratory medicine, nursing, anesthesia, surgery, clerical support, and transportation. The multidisciplinary hospital transfusion committee has been traditionally charged with oversight of transfusion safety. However, in recent years, this committee may have been neglected in many institutions. Resurgence in hospital oversight of patient safety and transfusion efficacy is an important strategy for change. A new position, the transfusion safety officer (TSO), has been developed in some nations to specifically identify, resolve, and monitor organizational weakness leading to unsafe transfusion practice. New technology is becoming increasingly available to improve the performance of sample labeling and the bedside clerical check. Several technology solutions are in various stages of development and include wireless handheld portable digital assistants, advanced bar coding, radiofrequency identification, and imbedded chip technology. Technology-based solutions for transfusion safety will depend on the larger issue of the technology for patient identification. Devices for transfusion safety hold exciting promise but need to undergo clinical trials to show effectiveness and ease of use. Technology solutions will likely require integration with delivery of pharmaceuticals to be financially acceptable to hospitals. [References: 32]

96 Ebright, P. R., E. S. Patterson and M. L. Render (2002). "The "New Look" approach to patient safety: a guide for clinical nurse specialist leadership." *Clinical Nurse Specialist* 16(5): 247-53; quiz, 254-5.

Abstract This article describes a complex system model based on human performance factors that is borrowed from other industries but can be used by clinical nurse specialists for making progress in patient safety. Traditional approaches to investigation and follow-up of errors in healthcare organizations have not resulted in improvement in patient safety. The New Look approach described in this article emphasizes the complexity in which healthcare workers make decisions about patient care every day and how increased learning about the resiliency of healthcare workers in the face of multiple system gaps and discontinuities will lead to long-lasting improvements in safety. The article describes how the clinical nurse specialist can lead efforts using the New Look human performance-based approach in 4 areas: changing to a nonpunitive culture, learning about system complexity, learning about healthcare worker resiliency, and preparing for the complexity of introducing change.

- 97 Edlin, M. (2002). "Improving patient safety. Support systems help prevent medical errors." Healthplan 43(3): 54, 58-60.**
- 98 Effken, J. A. and B. Carty (2002). "The era of patient safety: implications for nursing informatics curricula." Journal of the American Medical Informatics Association 9(6 Suppl): S120-3.**
- 99 Eikel, C. and S. Delbanco (2003). "John M. Eisenberg Patient Safety Awards. The Leapfrog Group for Patient Safety: rewarding higher standards." Joint Commission Journal on Quality & Safety 29(12): 634-9.**

Abstract BACKGROUND: The Leapfrog Group is a consortium of more than 145 large health care purchasers committed to a common set of purchasing principles through which to leverage dramatic improvements in the safety, quality, and overall value of health care. Leapfrog purchasers mobilize consumers to seek out higher-quality providers, and they reward higher-quality providers. Leapfrog is primarily operationalized through Regional Roll-Outs--locally led purchaser efforts. PATIENT SAFETY RECOMMENDATIONS: The Leapfrog Group purchasers first focused on three patient safety practices, or "safety leaps," to reduce preventable medical errors--computer physician order entry, evidence-based hospital referral, and intensive care unit (ICU) physician staffing. Leapfrog's leaps are refined and updated annually on the basis of evidence and input from experts in the field. IMPACT ON PATIENT SAFETY: On the basis of survey results from the first 22 Regional Roll-Outs, as of September 2003, 4% of 633 hospitals reporting from the 22 regions fully met the CPOE standard, and an additional 17% of the 633 said they would meet the standard by 2005. Survey results also showed that 22% of the 605 hospitals in the 22 regions with ICUs met Leapfrog's ICU staffing recommendations and that an additional 5% would meet the standard by 2004. NEXT STEPS: In 2004 Leapfrog will launch new Regional Roll-Outs, bringing Leapfrog consumer education, hospital-specific information, and purchasing strategies to more communities nationwide.

- 100 Eisenberg, J. M. (2000). "Continuing education meets the learning organization: the challenge of a systems approach to patient safety." Journal of Continuing Education in the Health Professions 20(4): 197-207.**

Abstract Since the release of the report of the Institute of Medicine on medical errors and patient safety in November 1999, health policy makers and health care leaders in several nations have sought solutions that will improve the safety of health care. This attention to patient safety has highlighted the importance of a learning approach and a systems approach to quality measurement and improvement. Balanced with the need for public disclosure of performance, confidential reporting with feedback is one of the

prime ways that nations such as the United States, Canada, the United Kingdom, and Australia have approached this challenge. In the United States, the Quality Interagency Coordination Task Force has convened federal agencies that are involved in health care quality improvement for a coordinated initiative. Based on an investment in a strong research foundation in health care quality measurement and improvement, there are eight key lessons for continuing education if it is to parlay the interest in patient safety into enhanced continuing education and quality improvement in learning health care systems. The themes for these lessons are (1) informatics for information, (2) guidelines as learning tools, (3) learning from opinion leaders, (4) learning from the patient, (5) decision support systems, (6) the team learning together, (7) learning organizations, and (8) just-in-time and point-of-care delivery.

- 101 Elkin, P. L. and P. N. Gorman (2002). "Continuing medical education and patient safety: an agenda for lifelong learning." *Journal of the American Medical Informatics Association* 9(6 Suppl): S128-32.**
- 102 Ellis, W. M. (2001). "Pharmacists can look to national effort for help in improving patient safety." *Journal of the American Pharmaceutical Association* 41(2): 341-3.**
- 103 Eskew, A., M. Geisler, L. O'Connor, G. Saunders and R. Vinci (2002). "Enhancing patient safety: clinician order entry with a pharmacy interface." *Journal of Healthcare Information Management* 16(1): 52-7.**

Abstract The electronic pharmacy interface is the unique aspect of Boston Medical Center's new clinician order entry system, which electronically transmits clinicians' orders to the laboratory, radiology, and pharmacy. The interface and several other enhancements create a platform for clinicians that provides for efficiency, standardization, documentation compliance, and most important, improved patient safety.

- 104 Etchells, E. and M. Bernstein (2001). "Improving patient safety: just do it!" *Healthcarepapers* 2(1): 59-65, discussion 86-9.**

Abstract Clinicians must celebrate and study medical errors. The dark culture of blame must be replaced by a scholarly culture of safety. This commentary presents six cases that show what we can learn from errors. The first step to identifying and understanding patient safety problems is to develop a common language for discussing patient safety. Latent unsafe conditions are ongoing circumstances of daily practice that reduce the safety of patients. An error is the failure of a planned action to be completed as intended (error of execution), or the use of a wrong plan to achieve an aim (error of planning). Errors can be intercepted by appropriate action that minimizes the threat to patient safety. An adverse event is any unintended

result of medical treatment that results in prolonged hospital stay, morbidity or mortality. If an adverse event is caused by an error, or series of errors, then it is a preventable adverse event. The teaching hospital is the first place where students (physicians, nurses, pharmacists and all other disciplines) are exposed to the culture of healthcare. It is essential to expose students to a culture of safety early in their training. Clinicians can make safety an academically important activity. Clinicians will find it difficult to undertake major safety initiatives given the existing constraints on time and energy. Although clinicians can identify the safety problems, there must also be a commitment to understand safety problems and make improvements. It is strongly recommended that hospitals train, implement and support Patient Safety Consultation Teams.

- 105 Etchells, E., C. O'Neill and M. Bernstein (2003). "Patient safety in surgery: error detection and prevention." *World Journal of Surgery* 27(8): 936-41; discussion 941-2.**

Abstract Error in medicine is becoming a well recognized phenomenon. The U.S. Institute of Medicine's publication in 1999 included estimations that medical error is the eighth leading cause of death in the United States and results in up to 100,000 deaths annually. Retrospective studies and a few prospective studies are shedding more light on this challenging problem. Strategies to reduce error and increase patient safety have not been widely developed or embraced by surgeons for a variety of reasons. We provide a review on patient safety aimed at surgeons that includes definitions, incidence of errors including those in the surgical literature, causes of error, methods of error detection, and strategies to minimize errors and maximize patient safety.

- 106 Feinstein, K. W., N. Grunden and E. I. Harrison (2002). "A region addresses patient safety." *American Journal of Infection Control* 30(4): 248-51.**

Abstract The Pittsburgh Regional Healthcare Initiative (PRHI) is a coalition of 35 hospitals, 4 major insurers, more than 30 major and small-business health care purchasers, dozens of corporate and civic leaders, organized labor, and partnerships with state and federal government all working together to deliver perfect patient care throughout Southwestern Pennsylvania. PRHI believes that in pursuing perfection, many of the challenges facing today's health care delivery system (eg, waste and error in the delivery of care, rising costs, frustration and shortage among clinicians and workers, financial distress, overcapacity, and lack of access to care) will be addressed. PRHI has identified patient safety (nosocomial infections and medication errors) and 5 clinical areas (obstetrics, orthopedic surgery, cardiac surgery, depression, and diabetes) as ideal starting points. In each of these areas of work, PRHI partners have assembled multifacility/multidisciplinary groups charged with defining perfection, establishing region-wide reporting

systems, and devising and implementing recommended improvement strategies and interventions. Many design and conceptual elements of the PRHI strategy are adapted from the Toyota Production System and its Pittsburgh derivative, the Alcoa Business System. PRHI is in the proof-of-concept phase of development.

- 107 Ferguson, S. L. (2001). "To err is human: strategies for ensuring patient safety and quality when caring for children." *Journal of Pediatric Nursing* 16(6): 438-40.**
- 108 Ferman, J. (2000). "Medical errors spur new patient-safety measures." *Healthcare Executive* 15(2): 55-6.**
- 109 Ferman, J. H. (2002). "Patient safety legislation." *Healthcare Executive* 17(6): 62-3.**
- 110 Ferris, L. E. (1998). "Protecting the public from risk of harm: Ontario's forthcoming regulatory law protects doctors, public, and the patient." *British Medical Journal*. 316(7137): 1033-4.**
- 111 Firth-Cozens, J. (2001). "Cultures for improving patient safety through learning: the role of teamwork." *Quality in Health Care* 10(Suppl 2): ii26-31.**

Abstract Improvements in patient safety result primarily from organisational and individual learning. This paper discusses the learning that can take place within organisations and the cultural change necessary to encourage it. It focuses on teams and team leaders as potentially powerful forces for bringing about the management of patient safety and better quality of care.

- 112 Foley, G. (1999). "The multidisciplinary team partners in patient safety." *Cancer Practice* 7(3): 108.**
- 113 Frankel, A., T. K. Gandhi, D.W. Bates (2003). "Improving patient safety across a large integrated health care delivery system." *Int J Qual Health Care* 15 Suppl 1: i31-40.**

Abstract OBJECTIVE: Patient safety is moving up the list of priorities for hospitals and health care delivery systems, but improving safety across a large organization is challenging. We sought to create a common patient safety strategy for the Partners HealthCare system, a large, integrated, non-profit health care delivery system in the United States. DESIGN: Partners identified a central Patient Safety Officer, who then formed a Patient Safety Advisory Group with local expert members, as well as a Patient Safety Leaders Group comprised of personnel responsible for patient safety at each member institution. The latter group meets monthly to help determine future

projects and to share the results of piloting and implementation. There was broad consensus that interventions should include the areas of culture change, process change, and process measurement. **SETTING:** A large, integrated health care delivery system in the Boston, Massachusetts, area. **RESULTS:** Key milestones to date include implementation of Executive WalkRounds, development of accountability principles, agreement to create a common system-wide adverse event reporting system, and agreement to implement computerized physician order entry in all hospitals. These efforts have heightened awareness of patient safety considerably within the network. Most influenced to date have been the senior leaders of the hospitals, which has resulted in substantial support for patient safety initiatives. **CONCLUSIONS:** This loosely integrated delivery system represents a daunting landscape for the development and institution of patient safety concepts. Many projects aimed at different components of patient safety must occur at the same time for significant change, yet culture and care-related beliefs vary substantially within the system, and measurement is especially challenging. Moreover, with many potential interventions, and limited resources, prioritization and selection is difficult. Nonetheless, consensus about some issues has been reached, in particular because of a well delineated patient safety structure. We believe the net result will be substantial improvement in patient safety.

114 Frankel, A., E. Graydon-Baker, C. Neppl, T. Simmonds, M. Gustafson and T. K. Gandhi (2003). "Patient Safety Leadership WalkRounds." Joint Commission Journal on Quality & Safety 29(1): 16-26.

Abstract **BACKGROUND:** In the WalkRounds concept, a core group, which includes the senior executives and/or vice presidents, conducts weekly visits to different areas of the hospital. The group, joined by one or two nurses in the area and other available staff, asks specific questions about adverse events or near misses and about the factors or systems issues that led to these events. **ANALYSIS OF EVENTS:** Events in the Walkrounds are entered into a database and classified according to the contributing factors. The data are aggregated by contributing factors and priority scores to highlight the root issues. The priority scores are used to determine QI pilots and make best use of limited resources. Executives are surveyed quarterly about actions they have taken as a direct result of WalkRounds and are asked what they have learned from the rounds. **RESULTS:** As of September 2002, 47 Patient Safety Leadership WalkRounds visited a total of 48 different areas of the hospital, with 432 individual comments. **DISCUSSION:** The WalkRounds require not only knowledgeable and invested senior leadership but also a well-organized support structure. Quality and safety personnel are needed to collect data and maintain a database of confidential information, evaluate the data from a systems approach, and delineate systems-based actions to improve care delivery. Comments of frontline clinicians and executives suggested that WalkRounds helps educate leadership and frontline staff in patient safety

concepts and will lead to cultural changes, as manifested in more open discussion of adverse events and an improved rate of safety-based changes.

- 115 Gaba, D. M. (2000). "Education and debate. Anaesthesiology as a model for patient safety in health care." *British Medical Journal*. 320(7237): 785-8.**
- 116 Gaba, D. M. and S. K. Howard (2002). "Patient safety: fatigue among clinicians and the safety of patients." *New England Journal of Medicine*. 347(16): 1249-55.**
- 117 Gandhi, T. K., E. Graydon-Baker, J. N. Barnes, C. Neppl, C. Stapinski, J. Silverman, W. Churchill, P. Johnson and M. Gustafson (2003). "Creating an integrated patient safety team." *Joint Commission Journal on Quality & Safety* 29(8): 383-90.**

Abstract CREATING A PATIENT SAFETY TEAM: In May 2001 Brigham and Women's Hospital (Boston) created the Patient Safety Team, which was incorporated into the pre-existing safety and quality infrastructure. ESTABLISHING THE PATIENT SAFETY TEAM'S GOALS AND INITIATIVES: The goal was to create the safest possible environment for patients and staff by creating a culture of safety, increasing the capacity to measure and evaluate processes, committing to change unsafe processes, and adopting new technologies. To achieve this mission, the following initiatives were established: create a culture of safety, increase event identification, improve event analysis, close the feedback loop, assess risk proactively, improve medication safety, and involve the patient. DISCUSSION: Integrating the Patient Safety Team into pre-existing committees and departments facilitated its work while helping to reinforce the multidisciplinary nature of safety efforts. It is critical that pre-existing groups feel that patient safety represents value added and is not a threat to their current roles. SUMMARY AND CONCLUSIONS: If a patient safety strategy and team are to be effective, commitment from the organization's leaders is essential. This team should also work with individual departments and pre-existing quality structures to drive changes to the systems of care to enable health care to become as safe as possible.

- 118 Gerberding, J. L. (2002). "Hospital-onset infections: a patient safety issue." *Annals of Internal Medicine* 137(8): 665-70.**

Abstract Hospital-onset infections, particularly those involving the urinary tract, lung, and bloodstream, are common and costly and cause substantial morbidity. This article analyzes the case of a 78-year-old man with lung cancer who died after developing hospital-onset pneumonia and urinary catheter-related infection during hospitalization for elective removal of a cerebellar metastasis. The field of infection control could benefit by adopting

several approaches advocated by patient safety adherents, such as root-cause analysis. For example, hospital-onset infections that are implicated as attributable causes of death should perhaps be reviewed by local infection control teams regardless of the institution's overall infection rates. The patient safety movement can also learn from the traditions of infection control and hospital epidemiology. Specifically, applying infection control-based practices to safety problems may enhance safety. Such practices include establishing clear definitions of adverse events, standardizing methods for detecting and reporting events, creating appropriate rate adjustments for case-mix differences, instituting evidence-based intervention programs, and relying on skilled professionals to promote ongoing improvements in care.

119 Goldstein, D. (2002). "Using IT to enhance patient safety." *Managed Care Interface* 15(12): 46-7.

120 Goldstein, D. (2002). "Medical Internet. Using IT to enhance patient safety." *Managed Care Interface*. 15(12): 46-7.

121 Goldstein, M. K., B. B. Hoffman, R. W. Coleman, S. W. Tu, R. D. Shankar, M. O'Connor, S. Martins, A. Advani and M. A. Musen (2002). "Patient safety in guideline-based decision support for hypertension management: ATHENA DSS.mission." *Journal of the American Medical Informatics Association*. 9(6): Suppl: S11-6.

Abstract The Institute of Medicine recently issued a landmark report on medical error. In the penumbra of this report, every aspect of health care is subject to new scrutiny regarding patient safety. Informatics technology can support patient safety by correcting problems inherent in older technology; however, new information technology can also contribute to new sources of error. We report here a categorization of possible errors that may arise in deploying a system designed to give guideline-based advice on prescribing drugs, an approach to anticipating these errors in an automated guideline system, and design features to minimize errors and thereby maximize patient safety. Our guideline implementation system, based on the EON architecture, provides a framework for a knowledge base that is sufficiently comprehensive to incorporate safety information, and that is easily reviewed and updated by clinician-experts.

122 Goode, L. D., C. M. Clancy, H. R. Kimball, G. Meyer and J. M. Eisenberg (2002). "When is "good enough"? The role and responsibility of physicians to improve patient safety." *Academic Medicine* 77(10): 947-52.

Abstract In September 2001, the Agency for Healthcare Research and Quality (AHRQ) and the ABIM Foundation jointly sponsored an invitational conference entitled "The Role and Responsibility of Physicians to Improve

Patient Safety." The goal of the conference was to begin a national conversation focusing on the individual clinician's role and strategies physicians might employ to advance patient safety. The authors summarize the main themes and issues that emerged at the conference. The authors draw from work by the Institute of Medicine (IOM) to support the need for greater emphasis on quality improvement. To date, most of the work in this area has involved a systems-level approach, and physicians are often viewed as obstacles to improvement programs. By contrast, physicians may view population- or systems-based approaches to health care as interfering with the delivery of care to specific patients. The authors argue that physicians, individually and collectively, have a key role in quality improvement efforts, albeit a role that is yet fully defined. After reviewing successful examples involving physicians, the authors explore the major levers to achieve change—removing barriers, creating incentives, emphasizing collaboration, increasing education, and promulgating regulation—and summarize ten recurring themes, including both current and near-term opportunities, for physicians to exercise leadership in quality improvement and patient safety. Finally, they assert that even modest change can lead to substantial improvements, particularly if medical societies and the profession's standard-setting bodies work together.

123 Gosbee, J. (2002). "Human factors engineering and patient safety." *Quality & Safety in Health Care* 11(4): 352-4.

Abstract The case study and analyses presented here illustrate the crucial role of human factors engineering (HFE) in patient safety. HFE is a framework for efficient and constructive thinking which includes methods and tools to help healthcare teams perform patient safety analyses, such as root cause analyses. The literature on HFE over several decades contains theories and applied studies to help to solve difficult patient safety problems and design issues. A case study is presented which illustrates the vulnerabilities of human factors design in a transport monitor. The subsequent analysis highlights how to move beyond the more obvious contributing factors like training to design problems and the establishment of informal norms. General advice is offered to address these issues and design issues specific to this case are discussed.

124 Goss, L. and R. Carrico (2002). "Get a grip on patient safety: outcomes in the palm of your hand." *Journal of Infusion Nursing* 25(4): 274-9.

Abstract Documentation of what nurses do and the consequential impact on the care and safety of the patient is essential for the optimal use of intravascular devices. The University of Louisville Hospital's infection control department collaborated with the infusion therapy team on a project designed to provide an easier and more reliable way to quantify what the infusion therapy team did and the resultant patient outcomes. This project was based

on software developed by the infection control department for use with the handheld personal digital assistant (PDA). This article will discuss how use of the PDA and software meet individual departmental needs and impact patient outcomes and patient safety by using evidence-based decision-making.

- 125 Gournay, K. and L. Bowers (2000). "Suicide and self-harm in in-patient psychiatric units: a study of nursing issues in 31 cases." *Journal of Advanced Nursing* 32(1): 124-31.**

Abstract A significant number of incidents of suicide and self-harm occur whilst patients are in receipt of care as in-patients. This audit comprises 31 cases which were referred to the first author for expert opinion, each case being the subject of legal action brought by patients and/or their families. The cases were referred from 31 different NHS trusts across England. All concerned suicide/serious self-harm in people in receipt of in-patient care. The aims of this audit were to carry out a detailed assessment of the 31 individual cases, so as to provide a nursing dimension to already established enquiries in this area and also to examine whether specific issues might be the subject of more systematic research. Further, this paper aims to provide some insights in the area of litigation, where nurses are becoming increasingly involved. The same broad approach to information-gathering and analysis was used, comprising a systematic review of case records, trust policies, expert reports and, where appropriate, inquest transcriptions. The sample comprised 12 suicides and 19 cases of serious self-harm. Factors associated with these events include: being male, having a dual diagnosis of mental illness and drug/alcohol abuse, and age between 21 and 30 years. Of the 12 deaths, five occurred in hospital, four by hanging and one by drowning. The audit highlighted environmental factors associated with these events which, arguably, could be simply addressed. There was a considerable variation in the content and quality of observation policy and practice. The results of this audit point to the need for further research but, above all, provide evidence requiring urgent action by the Department of Health regarding the setting of national standards.

- 126 Gray, J. E. (1998). "Lower radiation exposure improves patient safety." *Diagnostic Imaging* 20(9): 61-4.**
- 127 Greene, J. (2002). "Patient safety. Jump on board." *Hospitals & Health Networks* 76(11): 16, 18.**
- 128 Greene, J. (2003). "Patient safety. It's an infection. Is it a lawsuit?" *Hospitals & Health Networks* 77(4): 14.**
- 129 Greengold, N. L. (2002). "A Web-based program for implementing evidence-based patient safety recommendations." *Joint Commission Journal on Quality Improvement* 28(6): 340-8.**

Abstract **BACKGROUND:** In response to increasing national concerns about medical safety, product developers from a health services research and software group recently created a commercial Web-based program to address a wide variety of patient safety issues in the acute care setting. They also wanted to provide a program with credible, referenced, and up-to-date content, not just a technology infrastructure for reporting errors. **SAFETY OPTIMIZER:** This Web-based program, which has evolved over time, now features seven modules for assessing organizational risk and for implementing strategies to reduce risk. The Literature Module features detailed synopses that are graded and organized into summary statements to provide recommendations for improving patient safety. The Implementation/Tracking Module includes numerous risk-reduction strategies. The Incident Reporting Module enables the collection of data at the point of care on a variety of incidents, using either paper-based or on-line forms. Other modules offer opportunities to assess adherence to JCAHO patient safety standards, forecast the benefits of certain evidence-based guidelines, evaluate staff competency, and obtain information from a variety of key safety Web sites. **EXPERIENCE TO DATE:** The program is in use at more than 30 health care organization facilities and systems. It is still too early to provide quantitative data on the impact of this program on patient safety. **CONCLUSIONS:** It is hoped that vendor solutions such as the one described in this article will help organizations develop a practical and effective framework for addressing the wide range of issues in patient safety.

130 Greenwood, L. (2003). "Patient safety. Slip gloss." Health Service Journal 113(5866): 35-7.

131 Gui, G. P., C. V. Cheruvu, I. Subak-Sharpe, M. Shiew, L. Bidlake and A. G. Fiennes (1999). "Communication between hospital and general practitioners after day case surgery: a patient safety issue." Annals of the Royal College of Surgeons of England 81(1 Suppl): 8-9, 12.

132 Gunasekaran, S., K. Knecht and D. Garets (2003). "To HYPE is human. Practical IT approaches to patient safety should come before a leap into CPOE." Healthcare Informatics 20(8): 49-50.

133 Gunn, I. P. (2000). "Patient safety and human error: the big picture." CRNA 11(1): 41-8.

Abstract For most of the past century, health care literature including many books written about health care and its quality have documented the problems of errors in health care delivery. That outcomes of care have differed significantly among hospitals has also inferred that perhaps the "best practices" or the appropriate resources may not have been used, although most of these study results have be adjusted for case mix. The Institute of Medicine's recent publication, "To Err is Human," represents their review of

studies quantifying medical errors in health care and their recommendations for eliminating such errors to the extent possible. One should note that, while using the term "medical," it does not infer that all errors are made by physicians. It recommends shifting the focus of study from blaming the health providers to studying the "system" in which health care is provided, believing that most of the errors committed are not reckless but rather result from system variables. The Institute of Medicine's recommendations are broad and cover a variety of quality assurance mechanisms. It recommends mandatory reporting of these errors to a central agency via a state mechanism, with better and broader legislation to make peer review, for purposes of studying errors with a view toward making change in the system, privileged information, and not subject to subpoena. The American Medical Association and American Nurses Association, in their testimony before the US Senate Committee on Appropriations, Subcommittee on Labor, Health and Human Services, Education and Related Agencies, on December 13, 1999, support the recommendations in general with a few reservations. [References: 9]

- 134 Gunnarsson, T., A. Theodorsson, P. Karlsson, S. Fridriksson, S. Bostrom, J. Persliden, I. Johansson and J. Hillman (2000). "Mobile computerized tomography scanning in the neurosurgery intensive care unit: increase in patient safety and reduction of staff workload." *Journal of Neurosurgery* 93(3): 432-6.**

Abstract OBJECT: Transportation of unstable neurosurgical patients involves risks that may lead to further deterioration and secondary brain injury from perturbations in physiological parameters. Mobile computerized tomography (CT) head scanning in the neurosurgery intensive care (NICU) is a new technique that minimizes the need to transport unstable patients. The authors have been using this device since June 1997 and have developed their own method of scanning such patients. METHODS: The scanning procedure and radiation safety measures are described. The complications that occurred in 89 patients during transportation and conventional head CT scanning at the Department of Radiology were studied prospectively. These complications were compared with the ones that occurred during mobile CT scanning in 50 patients in the NICU. The duration of the procedures was recorded, and an estimation of the staff workload was made. Two patient groups, defined as high- and medium-risk cases, were studied. Medical and/or technical complications occurred during conventional CT scanning in 25% and 20% of the patients in the high- and medium-risk groups, respectively. During mobile CT scanning complications occurred in 4.3% of the high-risk group and 0% of the medium-risk group. Mobile CT scanning also took significantly less time, and the estimated personnel cost was reduced. CONCLUSIONS: Mobile CT scanning in the NICU is safe. It minimizes the risk of physiological deterioration and technical mishaps linked to intrahospital transport, which may aggravate secondary brain injury. The

time that patients have to remain outside the controlled environment of the NICU is minimized, and the staff's workload is decreased.

- 135 Gutman, M. E. (2001). "The risk manager's role in creating an organizational patient safety strategy." *Journal of Healthcare Risk Management* 21(4): 13-8.**
- 136 Habal, M. B. (2000). "Reporting of errors in surgery: a new trend or real patient safety issue--to err is human." *Journal of Craniofacial Surgery* 11(3): 209-10.**
- 137 Hagland, M. (2003). "Reduced errors ahead. Organizations are moving down the road to patient safety, despite bumps and curves." *Healthcare Informatics* 20(8): 31-4, 36, 38 passim.**
- 138 Hammons, T., N. F. Piland, S. D. Small, M. J. Hatlie and H. R. Burstin (2003). "Ambulatory patient safety. What we know and need to know." *Journal of Ambulatory Care Management* 26(1): 63-82.**

Abstract While safety risks are widespread in ambulatory settings, there has been insufficient attention directed at developing the evidence base that is needed to improve ambulatory safety. In this article, the current state of knowledge about ambulatory safety is reviewed. A research agenda in ambulatory safety is proposed, as well as a series of potential interventions that could be used to improve safety in the ambulatory setting. [References: 128]

- 139 Harvey, B. E. and S. Alpert (1997). "Patient safety and efficacy as measured by clinical trials and regulatory policy." *Studies in Health Technology & Informatics* 39: 75-9.**

Abstract Virtual Reality and other technological innovations in medicine provide new challenges to the regulatory framework of the premarket review process for medical devices. By reinventing the government-academia-industry partnership, clinical trial data necessary for a medical device to enter the market can be more efficiently obtained.

- 140 Healzer, J. M., S. K. Howard and D. M. Gaba (1998). "Attitudes toward production pressure and patient safety: a survey of anesthesia residents." *Journal of Clinical Monitoring & Computing* 14(2): 145-6.**
- 141 Heard, S. R., C. Roberts, S. J. Furrows, M. Kelsey, L. Southgate and M. General Medical Council. Specialty Assessment Working Group for Medical (2003). "Corridor consultations and the medical microbiological record: is patient safety at risk?" *Journal of Clinical Pathology* 56(1): 43-7.**

Abstract The performance procedures of the General Medical Council are aimed at identifying seriously deficient performance in a doctor. The performance procedures require the medical record to be of a standard that enables the next doctor seeing the patient to give adequate care based on the available information. Setting standards for microbiological record keeping has proved difficult. Over one fifth of practising medical microbiologists (including virologists) in the UK (139 of 676) responded to a survey undertaken by the working group developing the performance procedures for microbiology, to identify current practice and to develop recommendations for agreement within the profession about the standards of the microbiological record. The cumulative frequency for the surveyed recording methods used indicated that at various times 65% (90 of 139) of respondents used a daybook, 62% (86 of 139) used the back of the clinical request card, 57% (79 of 139) used a computer record, and 22% (30 of 139) used an index card system to record microbiological advice, suggesting wide variability in relation to how medical microbiologists maintain clinical records.

- 142 Heget, J. R., J. P. Bagian, C. Z. Lee and J. W. Gosbee (2002). "John M. Eisenberg Patient Safety Awards. System innovation: Veterans Health Administration National Center for Patient Safety." Joint Commission Journal on Quality Improvement 28(12): 660-5.**

Abstract BACKGROUND: In 1998 the Veterans Health Administration (VHA) created the National Center for Patient Safety (NCPS) to lead the effort to reduce adverse events and close calls systemwide. NCPS's aim is to foster a culture of safety in the Department of Veterans Affairs (VA) by developing and providing patient safety programs and delivering standardized tools, methods, and initiatives to the 163 VA facilities. A NOVEL APPROACH: To create a system-oriented approach to patient safety, NCPS looked for models in fields such as aviation, nuclear power, human factors, and safety engineering. Core concepts included a non-punitive approach to patient safety activities that emphasizes systems-based learning, the active seeking out of close calls, which are viewed as opportunities for learning and investigation, and the use of interdisciplinary teams to investigate close calls and adverse events through a root cause analysis (RCA) process. Participation by VA facilities and networks was voluntary. NCPS has always aimed to develop a program that would be applicable both within the VA and beyond. KEY ACTION ITEMS AND RESULTS RELATED TO RCA: NCPS's full patient safety program was tested and implemented throughout the VA system from November 1999 to August 2000. Program components included an RCA system for use by caregivers at the front line, a system for the aggregate review of RCA results, information systems software, alerts and advisories, and cognitive aids. Following program implementation, NCPS saw a 900-fold increase in reporting of close calls of high-priority events, reflecting the level of commitment to the program by VHA leaders and staff.

143 Hellman, R. (2001). "Commentary. Improving patient safety in diabetes care: the importance of reducing medical errors." Cd(Clinical Diabetes). 19(4): 190-2.

144 Hemman, E. A. (2002). "Creating healthcare cultures of patient safety." Journal of Nursing Administration 32(7-8): 419-27.

Abstract With the release of the Institute of Medicine's report on patient safety, a national agenda was set to rebuild the public's trust and create cultures of safety within all healthcare organizations. This vision of improvement is driving changes in healthcare organizations, educational institutions, and regulatory agencies to remove the blame and improve their systems. Understanding historical events, strategies for organization change, and current patient safety initiatives will assist nursing leaders to become active participants at the local, state, and national level as cultures are changed and solutions are developed to prevent patient injuries.

145 Hensinger, R. N. (2001). "Thoughts on patient safety: how hospitals can become safe houses." Journal of Pediatric Orthopedics 21(2): 268-9.

146 Herman, D. C. and J. P. Abenstein (2001). "Communication technology: patient safety and the patient-physician relationship." Mayo Clinic Proceedings 76(1): 7-8.

147 Hickner, J. (2003). "Patient safety after hours: time for action." Journal of Family Practice 52(3): 227-8.

148 Hildebrandt, D. E., J. M. Westfall and P. C. Smith (2003). "After-hours telephone triage affects patient safety." Journal of Family Practice 52(3): 222-7.

Abstract OBJECTIVE: To describe the management of after-hours calls to primary care physicians and identify potential errors that might delay evaluation and treatment. STUDY DESIGN: Survey of primary care practices and audit of after-hours phone calls. Ninety-one primary care offices (family medicine, internal medicine, obstetrics, and pediatrics) were surveyed in October and November 2001. Data collected included number of persons answering the calls, information requested, instructions to patients, who decided whether to contact the on-call physician, and subsequent handling of all calls. We evaluated all after-hours calls to an index office that were not forwarded to the on-call physician. Four family physicians independently reviewed the calls while unaware that these calls had not been forwarded to the physician on call to determine the appropriate triage. POPULATION: Primary care physicians and their telephone answering services. OUTCOME MEASURES (1) Who decided to initiate immediate contact with the physician? (2) Percentage of calls identified as emergent or nonemergent by

patients. (3) Independent physician ratings of nonemergent calls. RESULTS: More than two thirds of the offices used answering services to take their calls. Ninety-three percent of the practices required the patient to decide whether the problem was emergent enough to require immediate notification of the on-call physician. Physician reviewers reported that 50% (range, 22%-77%) of the calls not forwarded to the on-call physician represented an emergency needing immediate contact with the physician. CONCLUSIONS: After-hours call systems in most primary care offices impose barriers that may delay care. All clinical patient calls should be sent to appropriately trained medical personnel for triage decisions. We urge all clinicians that use an answering service to examine their policies and procedures for possible sources of medical error.

149 Hinkle, A. J. (1997). "Patient safety and scented pediatric anesthesia facemasks." *Journal of Clinical Anesthesia* 9(6): 521-2.

150 Holmes, J. H., E. A. Balas and S. A. Boren (2002). "A guide for developing patient safety curricula for undergraduate medical education." *Journal of the American Medical Informatics Association* 9(6 Suppl): S124-7.

151 Hornsby, L. G. (2002). "Anesthesia's new frontier: ensuring patient safety in the office setting." *Plastic Surgical Nursing* 22(3): 112-4.

Abstract Advancements in technology and pharmacology, as well as improved techniques and instrumentation have allowed for much greater flexibility in how and where surgical and anesthesia care can be provided safely. Many procedures now take but a fraction of the time they used to take to complete and can be performed with minimal risk of blood loss and far less postoperative pain. Office-based surgery has emerged as a safe and viable alternative to traditional in-hospital surgery. This article provides an overview of the comprehensive "Standards for Office-Based Anesthesia Practice" developed by the American Association of Nurse Anesthetists (AANA).

152 Jacott, W. (2003). "Medical errors and patient safety. Despite widespread attention to the issue, mistakes continue to occur." *Postgraduate Medicine* 114(3): 15-6, 18.

153 Johnson, C. L., R. A. Carlson, C. L. Tucker and C. Willette (2002). "Using BCMA software to improve patient safety in Veterans Administration Medical Centers." *Journal of Healthcare Information Management* 16(1): 46-51.

Abstract Bar Code Medication Administration (BCMA) software, as developed by the Veterans Health Administration, is an innovative, automated system that uses wireless, point-of-care technology with an integrated bar

code scanner. The system can dramatically reduce medication administration errors by letting clinicians verify a patient's identity and validate medications against active orders.

154 Jones, D. J. (2003). "Patient safety--a rallying point for quality." American Journal of Medical Quality 18(5): 179-80.

155 Kaissi, A., T. Johnson and M. S. Kirschbaum (2003). "Measuring teamwork and patient safety attitudes of high-risk areas." Nursing Economics 21(5): 211-8, 207.

Abstract Patient care leaders recognize that substantial reductions in health care errors will not come until more attention is given to human solutions, such as improving teamwork in health care teams. The authors introduce a short, valid, and reliable instrument to measure teamwork and patient safety attitudes in hospital high-risk areas, namely the emergency department, the operating room, and the intensive care unit. The instrument was tested among nurses in four hospitals and the results showed that the nurses favored the team approach, while recognizing that teamwork in their departments is not very advanced and that communication with some key team members is problematic. This situation seems ideal for the design of a team training intervention in these settings.

156 Kaushal, R., K. N. Barker and D. W. Bates (2001). "How can information technology improve patient safety and reduce medication errors in children's health care?" Archives of Pediatrics & Adolescent Medicine 155(9): 1002-7.

Abstract BACKGROUND: Medication errors are common, costly, and injurious to patients. OBJECTIVE: To review the role of information technology in decreasing pediatric medication errors in both inpatient and outpatient settings. DESIGN: We performed a literature review of current information technology interventions. RESULTS: Several types of information technology will likely reduce the frequency of medication errors, although insufficient data exists for many technologies, and most available data come from adult settings. Computerized physician order entry with decision support substantially decreases the frequency of serious inpatient medication errors in adults. Certain other inpatient information technologies may be beneficial even though less evidence is currently available. These include computerized medication administration records, robots, automated pharmacy systems, bar coding, "smart" intravenous devices, and computerized discharge prescriptions and instructions. In the outpatient setting, where adherence is especially important, personalized Web pages and World Wide Web-based information have substantial potential. CONCLUSIONS: Medication errors are an important problem in pediatrics. Information technology interventions have great potential for reducing the frequency of errors. The magnitude of benefits

may be even greater in pediatrics than in adult medicine because of the need for weight-based dosing. Further development, application, evaluation, and dissemination of pediatric-specific information technology interventions are essential. [References: 45]

- 157 Keil, O. (2003). "Device dangers. Complying with the JCAHO's patient safety goals for clinical/biomedical equipment." *Health Facilities Management* 16(11): 31-3.**

Abstract A relatively new requirement of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) accreditation process is compliance with several National Patient Safety Goals (NPSGs) selected from the list of alerts by the JCAHO's Sentinel Event Alert Advisory Group.

- 158 Kern, K. A. (1998). "The National Patient Safety Foundation: what it offers surgeons." *Bulletin of the American College of Surgeons* 83(11): 24-7, 46.**

- 159 Ketring, S. P. and J. P. White (2002). "Developing a systemwide approach to patient safety: the first year." *Joint Commission Journal on Quality Improvement* 28(6): 287-95.**

Abstract BACKGROUND: Health care organizations face an imperative to ensure that care is provided to patients in the safest manner possible. In 2000 INTEGRIS Health, an Oklahoma City-based health system including ten acute care organizations, developed a patient safety framework that was built on the foundation of a culture of patient safety and began implementation in January 2001. IMPORTANCE OF LEADERSHIP IN PATIENT SAFETY: The first step in establishing a culture of safety was to ensure that leadership and the entire organization understand the rationale for a focus on patient safety. The traditional blaming approach will not prevent human error; staff need to speak freely, to talk about errors that happen and those that almost happen, and to identify where mistakes are likely and where systems allow mistakes to get through. Systems and processes should make it difficult for staff to make mistakes and easy for them to do things correctly. EXPERIENCE TO DATE: Since our efforts began, staff have helped identify multiple accidents waiting to happen. For example, an anesthesiologist, the service chief at one of our large hospitals, prepared a list of safety issues immediately after hearing a presentation to the Medical Executive Committee. Many system flaws have been identified as a result of our discussions; some of the solutions are easy and some much more complex. CHALLENGES: Challenges include keeping patient safety highly visible and demonstrating progress in our implementation, developing effective mechanisms for communicating safety solutions and ensuring that they are implemented in all the facilities, and figuring out how to measure success in a meaningful way.

160 Kizer, K. W. (2001). "Patient safety: a call to action: a consensus statement from the National Quality Forum." *Medgenmed, Medscape General Medicine* 3(2): 10.

Abstract OBJECTIVE: The Institute of Medicine (IOM) and the Presidential Advisory Commission on Consumer Protection and Quality in the Healthcare Industry have both recently highlighted healthcare errors as a serious public health problem. An in-depth review of the issue was conducted by the National Quality Forum (NQF) in preparation for work the federal government has asked the NQF to do. PARTICIPANTS: The membership of the NQF includes a wide array of public and private health agencies, healthcare provider organizations, consumer groups, healthcare purchasers, and research and quality improvement organizations. EVIDENCE: Published literature, including more than 350 journal articles and over 30 books and monographs, were reviewed, and input was solicited from individuals and organizations known to be knowledgeable on the topic, including the Harvard University Executive Session on Medical Error, the VA National Patient Safety Center, the Joint Commission on Accreditation of Healthcare Organizations, the National Patient Safety Foundation, and the IOM. The principal observations and findings were collated; 10 high-priority strategic areas needing action were identified; and specific recommendations for each area were crafted. CONSENSUS PROCESS: A draft statement was prepared and submitted to the NQF membership and Directors, as well as to external reviewers. The statement was revised following subsequent rounds of review and comment, after which it was approved by the NQF Board of Directors. CONCLUSIONS: There is an urgent need to reduce healthcare errors; however, numerous barriers impede progress in this regard, including widespread misunderstanding about why healthcare errors occur, the prevailing culture of "name and blame" surrounding these events, lack of user-friendly error-reporting mechanisms, and fear of litigation if errors are acknowledged and reported. To eliminate these barriers, and to begin to reduce healthcare errors, the NQF recommends that concerted action be taken in the 10 strategic areas identified here.

161 Kliger, A. S. and L. H. Diamond (2001). "Patient safety in end-stage renal disease: How do we create a safe environment?" *Advances in Renal Replacement Therapy* 8(2): 131-7.

Abstract The Institute of Medicine estimated that 44,000 to 98,000 hospitalized patients die annually as a direct result of preventable medical errors. Errors occur because competent practitioners are human, and the systems we design are imperfect. Improving patient safety requires acknowledging medical errors, encouraging the reporting of errors, and improving systems to reduce the likelihood of future errors. Several challenges must be addressed to accomplish this goal. The definition of medical errors must be widely agreed on and accepted. Adverse outcomes

are often the result of multiple systems failures. Therefore systems analysis, not blaming an individual, should be the focus of error reduction. A "culture of safety" should be created, which encourages reporting errors and "near-misses." An effective reporting system has 2 components, one for public accountability for errors that result in serious injury and another for confidential reporting of mistakes that have the potential for serious injury. Regulatory protection from discovery must be established for voluntary error and near-miss reporting systems. In the nephrology community, novel uses of technology should be sought to prevent errors, human factors leading to errors should be identified and anticipated, and patterns of interaction at the machine-human interface should be studied. Progress in improving patient safety has occurred in some areas, such as pharmacy services. Such known and tested patient safety practices should be deployed in dialysis facilities. Success in improving patient safety will require leadership, collaborative efforts among the many stakeholders in the ESRD program, and adequate allocation of resources.

- 162 Knox, G. E., M. Kelley, S. Hodgson, K. R. Simpson, L. Carrier and D. Berry (1999). "Downsizing, reengineering and patient safety: numbers, newness and resultant risk." *Journal of Healthcare Risk Management* 19(4): 18-25.**

Abstract Downsizing and reengineering are facts of life in contemporary healthcare organizations. In most instances, these organizational changes are undertaken in an attempt to increase productivity or cut operational costs with results measured in these terms. Less often considered are potential detrimental effects on patient safety or strategies, which might be used to minimize these risks.

- 163 Kraman, S. S., L. Cranfill, G. Hamm and T. Woodard (2002). "John M. Eisenberg Patient Safety Awards. Advocacy: the Lexington Veterans Affairs Medical Center." *Joint Commission Journal on Quality Improvement* 28(12): 646-50.**

Abstract BACKGROUND: After the Veterans Affairs Medical Center (VAMC) in Lexington, Kentucky, lost two major malpractice cases in the mid-1980s, leaders started taking a more proactive approach to identifying and investigating incidents that could result in litigation. An informal risk management team met regularly to discuss litigation-prone incidents. During one in-depth review, the team learned that a medication error had caused the patient's death. Although the family would probably never have found out, the team decided to honestly inform the family of exactly what had happened and assist in filing for any financial settlement that might be appropriate. This decision evolved into an organization wide full disclosure policy and procedure. DISCLOSURE POLICY AND PROCEDURE: The Lexington VAMC's policy on full disclosure includes informing patients and/or their

families of adverse events known to have caused harm or injury to the patient as a result of medical error or negligence. The disclosure includes discussions of liability and also includes apology and discussion of remedy and compensation. RESULTS: Full disclosure is the right thing to do and the moral and ethical thing to do. Moreover, doing the right thing actually seems to have mitigated the financial repercussions of inevitable adverse events that result in injury to patients. As reported in 1999, Lexington VAMC was in the top quarter of medical centers for number of tort claims filed but was in the lowest quarter for malpractice payouts resulting from these torts.

- 164 Kuperman, G. J., J. M. Teich, T. K. Gandhi and D. W. Bates (2001). "Patient safety and computerized medication ordering at Brigham and Women's Hospital." Joint Commission Journal on Quality Improvement 27(10): 509-21.**

Abstract BACKGROUND: Medications are important therapeutic tools in health care, yet creating safe medication processes is challenging for many reasons. Computerized physician order entry (CPOE), one important way that technology can be used to improve the medication process, has been in place at Brigham and Women's Hospital (BWH; Boston) since 1993. CPOE AT BWH: The CPOE application, designed and developed internally by the BWH information systems team, allows physicians and other clinicians to enter all patient orders into the computer. Physicians enter 85% of orders, with the remainder entered electronically by other clinicians. CPOE AND SAFE MEDICATION USE: The CPOE application at BWH includes several features designed to improve medication safety--structural features (for example, required fields, use of pick lists), enhanced workflow features (order sets, standard scales for insulin and potassium), alerts and reminders (drug-drug and drug-allergy interaction checking), and adjunct features (the pharmacy system, access to online reference information). RESULTS AT BWH: Studies of the impact of CPOE on physician decision making and patient safety at BWH include assessment of CPOE's impact on the serious medication error and the preventable adverse drug event rate, the impact of computer guidelines on the use of vancomycin, the impact of guidelines on the use of heparin in patients at bed rest, and the impact of dosing suggestions on excessive dosing. CONCLUSION: CPOE and several forms of clinical decision support targeted at increasing patient safety have substantially decreased the frequency of serious medication errors and have had an even bigger impact on the overall medication error rate. [References: 36]

- 165 Landis, N. T. (2000). "Health care purchasers should reward hospitals for patient safety practices, says business group." American Journal of Health-System Pharmacy 57(24): 2250, 2253.**

- 166 Landry, M. D. and W. J. Sibbald (2002). "Changing physician behavior: a review of patient safety in critical care medicine." *Journal of Critical Care* 17(2): 138-45.**

Abstract The publication of the Agency for Healthcare Research and Quality (AHRQ) report in July 2001 entitled "Making Health Care Safer: A Critical Analysis of Patient Safety Practices," represents a significant perceptual change in health care ideology. It can be argued that this compilation recognizes not only that medical errors occur in the health care system, but also that there are significant learning opportunities that may arise in the identification of these errors that are otherwise known as medical misadventures. The report concluded and outlined a series of 11 highly rated practices whose usage are associated with increased safety. The AHRQ report also articulated that there is a need to investigate methods used to align medical practice with evidence regarding patient safety. In other words, after the identification of the 11 priority safety practices, it is thus important to determine the most effective methods to change physician behavior toward these practices that will intuitively result in increased safety performance. Five different educational-based strategies have been identified as techniques to change physician behavior: (1) Academic Detailing, (2) Audit and Feedback, (3) Local Opinion Leaders, (4) Reminder Systems, and (5) Printed Material. This article reviews these strategies in the context of critical care medicine and offers some opinions regarding setting the future research agenda in this investigative field. Copyright 2002, Elsevier Science (USA). All rights reserved. [References: 26]

- 167 Lang, N. P. (2001). "Professional liability, patient safety, and first do no harm." *American Journal of Surgery* 182(6): 537-41.**

- 168 Lanham, B. and P. Maxson-Cooper (2003). "Is Six Sigma the answer for nursing to reduce medical errors and enhance patient safety?" *Nursing Economics* 21(1): 39-41, 38.**

- 169 Lannon, C. M., B. J. Coven, F. Lane France, G. B. Hickson, P. V. Miles, J. T. Swanson, J. I. Takayama, D. L. Wood, L. Yamamoto and C. National Initiative for Children's Health Care Quality Project Advisory (2001). "Principles of patient safety in pediatrics." *Pediatrics* 107(6): 1473-5.**

Abstract The American Academy of Pediatrics and its members are committed to improving the health care system to provide the best and safest health care for infants, children, adolescents, and young adults. In response to a 1999 Institute of Medicine report on building a safer health system, a set of principles was established to guide the profession in designing a health care system that maximizes quality of care and minimizes medical errors through identification and resolution. This set of principles provides direction

on setting up processes to identify and learn from errors, developing performance standards and expectations for safety, and promoting leadership and knowledge.

170 Lanser, E. G. (2001). "Fulfilling the promise: technology's role in improving patient safety." *Healthcare Executive* 16(5): 6-11.

171 Larson, L. (2001). "Creating the patient safety mindset." *Trustee* 54(9): 18-23, 1.

Abstract Two health care systems--Intermountain Health Care in Salt Lake City and Baptist Memorial Health Care in Memphis--have made patient safety an organization-wide priority, which has given both systems comprehensive cultures of safety.

172 Larson, L. (2003). "Putting patient safety in the blueprint." *Hospitals & Health Networks* 77(2): 46-50, 52-3, 2.

Abstract When St. Joseph's Community Hospital of West Bend (Wis.) decided to build a replacement facility, CEO John Reiling proposed a novel approach: Let improving patient safety guide the entire design process. Before ground was broken, St. Joseph's convened a learning lab that attracted some of the nation's leading experts on patient safety. Since then, staff from every sector of the hospital have helped to identify where errors occur, how work flow and processes can change to enhance safety and how a building can be designed to incorporate those improvements. Although St. Joseph's leaders say the goal is simply to provide the best facility for their community, it's likely that their patient-safety-driven design process will become a model for hospitals across the country.

173 Layde, P. M., L. A. Maas, S. P. Teret, K. J. Brasel, E. M. Kuhn, J. A. Mercy and S. W. Hargarten (2002). "Controversies. Patient safety efforts should focus on medical injuries." *JAMA*. 287(15): 1993-7.

174 Leape, L., A. M. Epstein and M. B. Hamel (2002). "A series on patient safety." *New England Journal of Medicine* 347(16): 1272-4.

175 Leape, L. L. (2002). "Patient safety: reporting of adverse events." *New England Journal of Medicine*. 347(20): 1633-8.

176 Leape, L. L., D. M. Berwick and D. W. Bates (2002). "What practices will most improve safety? Evidence-based medicine meets patient safety." *JAMA* 288(4): 501-7.

177 Leape, L. L., D. D. Woods, M. J. Hatlie, K. W. Kizer, S. A. Schroeder and G. D. Lundberg (1998). "Promoting patient safety by preventing medical error." JAMA 280(16): 1444-7.

178 LeGros, N. and J. D. Pinkall (2002). "The new JCAHO patient safety standards and the disclosure of unanticipated outcomes. Joint Commission on Accreditation of Healthcare Organizations." Journal of Health Law 35(2): 189-210.

Abstract This article looks at the newly-issued JCAHO standards and their increased focus on patient safety in performance standards for healthcare organizations. As part of these standards, hospitals are required to inform patients of outcomes of care, including unanticipated outcomes. This article examines this requirement and suggests varying interpretations of it. After looking at the current legal and ethical standards requiring disclosure of errors or negligent acts, the article suggests that hospitals are faced with many difficulties in implementing the standard. Specifically, the article argues that more details are necessary regarding what events must be reported and what hospitals are required to do when members of the medical staff refuse to inform patients of medical error.

179 Lenert, L. A., H. Burstin, L. Connell, J. Gosbee and G. Phillips (2002). "Federal patient safety initiatives panel summary." Journal of the American Medical Informatics Association 9(6 Suppl): S8-10.

180 LeRoy, L. and K. M. Treanor (2001). "Patient safety: grantmakers join the effort to reduce medical errors." Health Affairs 20(2): 287-90.

181 Levy, J. and D. R. Lancaster (2001). "Collaboration to improve patient safety: the first domain of quality." Journal for Healthcare Quality. 23(1): 9-14.

182 Liang, B. A. (2002). "Patient information privacy: HIPAA provisions and patient safety issues." Hospital Physician. Internal & Family Medicine Ed.. 38(7): 43-6.

Abstract The privacy of patient health care information is a major concern. Inappropriate use of private, patient-identifiable information has resulted in significant federal legislation attempting to address this matter, specifically, the Health Insurance Portability and Accountability Act (HIPAA). This article outlines the HIPAA provisions and uses a case presentation format to illustrate how these requirements may affect providers' progress in the area of patient safety. The costs of compliance with the HIPAA rules, as well as the legal penalties associated with their violation, are also discussed.

- 183 Liang, B. A. (2003). "Layperson and physician perceptions of the malpractice system: implications for patient safety." *Social Science & Medicine* 57(1): 147-53.**

Abstract The malpractice tort system functions upon the assumption that the medical profession defines its own standard of care. Hence, clinical assessments should theoretically mirror legal ones. However, if there is a conflict between the two, this conflict may reflect a perceived bias of the system either for or against a party. This exploratory study attempts to determine whether such a bias could exist. Physicians and layperson jury pool members were asked to review 10 jury verdict case scenarios. Respondents were asked first to assess whether the defendant physician provided clinically appropriate care; they were then asked to predict what the jury in the case actually decided. Laypersons showed significantly better agreement with actual jury verdicts on clinical assessment and success in jury verdict prediction than physicians. Both physicians and laypersons switched the favored party from clinical assessment to verdict prediction, with a vast majority of these changes being made from defendant to plaintiff. These results were consistent overall and when parsing assessments by case verdicts. Thus, laypersons and physicians may perceive a similar bias toward plaintiffs in the malpractice system. If these results can be generalized, the malpractice system may be inducing behavior that has a negative impact on patient safety.

- 184 Liang, B. A. and K. M. Coulson (2002). "Legal issues in performing patient safety work." *Nursing Economics* 20(3): 118-25.**
- 185 Liang, B. A. and D. J. Cullen (1999). "The legal system and patient safety: charting a divergent course: the relationship between malpractice litigation and human errors." *Anesthesiology* 91(3): 609-11.**
- 186 Lilford, R. J. (2002). "Patient safety research: does it have legs?" *Quality & Safety in Health Care* 11(2): 113-4.**
- 187 Loeb, J. M. (1999). "Patient safety is not an oxymoron." *Ambulatory Outreach*: 6-9.**
- 188 Lorberblatt, M. (2003). "Examining patient safety in fire incidents." *Health Estate* 57(4): 31-4.**

Abstract Hippocrates, Galienni, Maimonides, and their contemporaries used to reveal the illness by conversing with the patient, by observing, palpating and even smelling him. The tools available to the ancient doctors were very simple. Today there is a complete arsenal of laboratory and X-ray equipment available for diagnostic purposes. This is the case for an enormous number of medical instruments necessary for the purpose of medical treatment. Almost

all of them are electrically operated. Who can imagine today a hospital functioning without power, medical gases and many other systems? Yet, only 40 years ago, who would have imagined hospital computerisation? Today, like in many sectors, we fear that computers become a super power that may run our lives. It is very difficult to predict what surprises and revolutionary changes the future holds for us. However, it can be easily assumed that electro-mechanical systems will be expanded and new systems will appear and become most essential. The policy of transferring patients during a fire to other protected wards inside the building requires assuring the functioning of essential systems in these cases as well, and also enabling their efficient selective disconnection. Standards and routine solutions do not necessarily provide an answer for all the problems. However, we have many tools that make it possible to set creative tailor-made solutions. We can do it, and we must do it while looking forward to the future.

189 Lovern, E. (2001). "Minding hospitals' business. Purchasing coalition pushes hospitals to improve patient safety through process measures, but industry says standards are too expensive." *Modern Healthcare* 31(22): 30-3.

190 Luther, K. M., L. Maguire, J. Mazabob, J. B. Sexton, R. L. Helmreich and E. Thomas (2002). "Engaging nurses in patient safety." *Critical Care Nursing Clinics of North America* 14(4): 341-6.

Abstract Critical care nurses can be instrumental in developing and implementing changes to improve patient safety. Targeted interventions, based on nurse-identified issues, can yield measurable results. There were several keys to engaging and sustaining nurses in this effort. Leaders at all levels of the organization consistently demonstrated their enthusiasm and support for every aspect of the initiative. Topics addressed-clarification of orders, establishing care protocols, strengthening chain of command, improving staff levels and staff education, and eliminating the overflow of nonspecialty patients to specialty units-arose from suggestions made by nurses through formal surveys, informal focus groups, clinical practice groups, or root cause analyses. Progress is measured, and feedback is frequent. The culture remains one of collaboration and continuous problem solving with nurses viewed as central to the process.

191 Mack, P. (2002). "Patient safety and medical errors--a Singapore perspective." *Singapore Medical Journal* 43(5): 263-4.

192 Maddox, P. J., M. Wakefield and J. Bull (2001). "Patient safety and the need for professional and educational change." *Nursing Outlook* 49(1): 8-13.

Abstract Questionable quality of health care delivered in the United States has become a front-line issue, taking a strong place alongside more traditional concerns such as increasing costs and access to care. Given that nurses comprise the largest component of the health care workforce, safety and error reduction in health care are central concerns for the profession.

- 193 Mamaril, M. E. (2003). "Standards of perianesthesia nursing practice: advocating patient safety." *Journal of Perianesthesia Nursing* 18(3): 168-72.**

Abstract The practice continuum of perianesthesia nursing interacts in concert with other nursing and medical professional organizations. Professional standards of care establish frameworks that guide these practitioners in the delivery of care. ASPAN is charged with the ethical responsibility of defining and promulgating minimum standards of perianesthesia nursing practice. This article discusses the various definitions and uses of standards, as well as the vital importance of using ASPAN Standards. How standards differ from position statements, laws, and regulations, and how standards advocate for patient safety and protect the nurses in their specialty practice are also discussed. In addition, case scenarios will be presented to show how the American Society of Anesthesiologists' (ASA) standards play a major role in the surgical patient's care.

- 194 Manasse, H. R., Jr. (2003). "Not too perfect: hard lessons and small victories in patient safety." *American Journal of Health-System Pharmacy* 60(8): 780-7.**

- 195 Manasse, H. R., Jr., J. Eturnbull and L. H. Diamond (2002). "Patient safety: review of the contemporary American experience." *Singapore Medical Journal* 43(5): 254-62.**

- 196 Manning, L., A. Palmer and M. Yonekura (2003). "Coaching nurses to improved patient safety." *Nursing New Zealand(Wellington)*. 9(5): 18-9.**

Abstract Waitemata District Health Board's medical nursing services established a new clinical support role for staff nurses. Now other nursing services are looking at introducing it.

- 197 Marck, P., D. Allen and D. Phillipchuk (2001). "Patient safety is pressing concern for RNs: review of AARN practice consultations, January 12 - September 7, 2001: part 1: supporting safe practice environments and good nursing care." *Alberta RN*. 57(7): 4-6.**

Abstract AARN practice consultations are regularly reviewed to identify and respond to significant trends and issues that affect nursing practice and the

health system. Timely reviews of practice consultations help the AARN design services that support practice environments and the delivery of safe, competent, ethical care. XXABXX Part 2 of this review will report on the remaining categories of consultations on legal and ethical issues, health care reform, and other categories and will be published in the January 2002 issue of Alberta RN.

- 198 Martin, M., B. Scalabrini, A. Rioux and M. A. Xhignesse (2003). "Training fourth-year medical students in critical invasive skills improves subsequent patient safety." American Surgeon 69(5): 437-40.**

Abstract Complications after procedures performed by residents are thought to occur most often early in the first postgraduate year (PGY-1). We evaluated the number of pneumothoraces (PTXs) caused by central venous line insertion (CVLI) by two groups of PGY-1 residents in both the first 3 months of residency and the entire year from 1996 through 2000 to determine the impact of CVLI training on PTX. From 1996 through 1998 fourth-year medical students had no specific training in CVLI and learned on the job as residents. Starting with the Class of 1999 we replaced this approach with a structured program in CVLI. Didactic sessions detailing anatomy and technique were followed by skill performance in a fresh cadaver model. Students performed skills initially under the direct supervision of a faculty member, who provided immediate feedback. Videotapes of this performance were reviewed with the students by both surgeons and kinesiologists to correct deficits before repeat sessions. Skills were repeated until competence was attained. Graduating students have made up greater than 90 per cent of our two hospitals' PGY-1 residents since 1996. Because these residents are responsible for CVLI we are able to obtain performance follow-up in actual clinical settings. We obtained the number of PTXs caused by CVLI for the years 1996 through 2000 as well as for the first 3 months of each academic year (July through September) to determine the impact of our program on this serious complication. The number of PTXs during the first 3 months of 1996-1998 remained stable. After the introduction of our teaching program the number decreased significantly in the years 1999-2000 when compared with 1996-1998 ($P = 0.004$, t test). The overall yearly decrease for 1999 versus 1996-1998 approached significance ($P = 0.06$). The introduction of a structured teaching program of CVLI skills appears to have a positive impact in reducing morbidity of PTX. The greatest impact occurs within the first 3 months of the new PGY-1 academic year.

- 199 Martin, M., B. Vashisht, E. Frezza, T. Ferone, B. Lopez, M. Pahuja and R. K. Spence (1998). "Competency-based instruction in critical invasive skills improves both resident performance and patient safety." Surgery 124(2): 313-7.**

Abstract BACKGROUND: Correct performance of invasive skills is essential, but residents often undertake such procedures after no or minimal instruction. METHODS: We instructed eight postgraduate year 1 (PGY1) residents in the cadaver laboratory using a competency-based approach (CBI). Each resident had been evaluated before the laboratory during patient encounters. Group instruction in endotracheal tube insertion (ET), venous cutdown (VC), and chest tube insertion (CT) was followed by individual pretesting and hands-on teaching, with 100% competency the goal. Failure was considered an inability to perform the task correctly or within 120 seconds. After the laboratory, residents were evaluated for correctness and rapidity of performance. RESULTS: Prelaboratory failures consisted of ET, 7; CT, 5; VC, 7. Postlaboratory failures were 0 for all. Prelaboratory complications consisted of ET, 3.3 +/- 1.1; CT, 1.9 +/- 1.0; VC, 3 +/- 1.0. Postlaboratory complications were 0 for all. Prelaboratory times (seconds) were ET, 66.5 +/- 30.8; CT, 104 +/- 4.1; VC, 116.3 +/- 0.7. Postlaboratory times were ET, 25 +/- 7; CT, 65.5 +/- 10.7; VC, 81.3 +/- 2.5. Changes were statistically significant for all ($P < .03$, nonparametric). Residents performed 20 CTs with 1 pneumothorax, 80 ETs with 2 failures, and 20 VCs with no complications. Initial trauma resuscitation time decreased from 25 to 10 minutes. CONCLUSIONS: (1) Residents' skills rapidly improve with CBI; (2) skills learned through CBI in the laboratory can be translated to and sustained in the clinical setting; (3) CBI produces competent residents who perform skills rapidly and with minimal complications.

200 Massaro, R. (2003). "Investing in patient safety. An ethical and business imperative." *Trustee* 56(6): 20-3, 1.

Abstract Currently, hospital management has no financial incentive to invest in patient safety initiatives. That's where the board comes in. By focusing on five strategies, the board can make both the ethical and business case for patient safety.

201 Mawji, Z., P. Stillman, R. Laskowski, S. Lawrence, E. Karoly, T. A. Capuano and E. Sussman (2002). "First do no harm: integrating patient safety and quality improvement." *Joint Commission Journal on Quality Improvement* 28(7): 373-86.

Abstract BACKGROUND: Lehigh Valley Hospital's (LVH's; Allentown, Penn) interdisciplinary quality improvement program Primum Non Nocere (PNN), or First Do No Harm, is composed of 12 quality improvement (QI) projects that are a combination of ongoing operations improvement projects and new projects in patient safety. The projects stress delivery of cost-effective medical care while reducing preventable adverse events through improved communication, process redesign, and evidence-based protocol use. EXAMPLE: WRONG-SITE SURGERY: In response to an initial alert warning in 1998, LVH developed a policy of marking "yes" on the surgical site and "no"

on the other side. However, several near misses occurred, and a root cause analysis indicated that the policy was not always followed for some very specific reasons. For example, the operative record included no prompt to address laterality, and the procedures in which laterality should be addressed were never specified. Interventions to address these issues were quickly developed that were in keeping with the recommendations outlined in a second alert warning on the issue in December 2001. A year after these stepwise changes, compliance with the policy is almost 100%, and there have been no further near misses. DISCUSSION: Specific project barriers included the initial challenge of changing the mindset in the institution from gradual change on a grand scale to smaller, more rapid changes, analyses, and actions. Another issue identified early in the initiative was the tendency of project groups to outline elaborate process improvements without determining how to measure and monitor success. A project sustainability is inherently linked to its initial strengths and the successful solutions to barriers that are encountered.

202 May, S. (2002). "Computerized physician order entry. Patient safety drives refinement of systems." *Healthcare Informatics* 19(2): 32-3.

203 McCarthy, J. L. (2003). "The evolution from risk management to patient safety - case studies from the Harvard medical system." *Japan and the World Economy* 15(4): 459-468.

204 McElhinney, J. and O. Heffernan (2003). "Using clinical risk management as a means of enhancing patient safety: the Irish experience." *International Journal of Health Care Quality Assurance Incorporating Leadership in Health Services* 16(2-3): 90-8.

Abstract This paper outlines the process and context in which the Clinical Risk Modification Project at Sligo Hospital, Ireland was established and focuses on the issues encountered from conception to implementation. The project is based in the emergency and orthopaedic departments and is of two years duration. The stated aim of this project is to design and test a framework incorporating the core components of a workable Clinical Risk Modification programme in the context of an Irish general hospital. This involved making an explicit commitment to the principles of a learning organisation including blame free risk reporting, providing education and awareness training to promote understanding of clinical risk management locally, and developing a clinical incident/near miss reporting system to address clinical risk in both a proactive and reactive way.

205 McLaughlin, S. (2001). "Safety first. JCAHO's new patient safety standards to affect environment of care." *Health Facilities Management* 14(9): 26-8, 30.

- 206 McMullin, S. T., R. M. Reichley, L. A. Watson, S. A. Steib, M. E. Frisse and T. C. Bailey (1999). "Impact of a Web-based clinical information system on cisapride drug interactions and patient safety." Archives of Internal Medicine 159(17): 2077-82.**

Abstract BACKGROUND: Most commercially available drug-interaction screening systems have important limitations that fail to protect patients from dangerous drug combinations. We attempted to overcome the limitations of our commercial program by developing a Web-based clinical information system to serve as a safety net. This system identifies drug interactions with newly marketed medications not screened by our commercial program, and generates a second alert on dangerous interactions that were overridden during order processing. METHODS: The Web-based system uses patient-specific pharmacy, laboratory, and demographic data to generate detailed alerts on patients receiving potentially dangerous drug combinations. The system's impact on the use of dangerous drug combinations and related adverse events was evaluated by a retrospective analysis of patients receiving cisapride with contraindicated medications in the 2 years before and after implementation. RESULTS: The rate of dangerous drug combinations declined by 66% after implementing the system, from 9.0% of cisapride orders in 1994 and 1995 to 3.1% in 1996 and 1997 ($P < .001$). The mean [SD] duration of contraindicated therapy (4.1 [3.8] vs 1.6 [1.4] days, $P < .001$) and proportion of patients being discharged under treatment with a dangerous drug combination (36.2% vs 7.7%, $P < .001$) was also significantly reduced during the study period. Three patients (1.7%) during the control period experienced serious adverse events that may have been related to the targeted drug interactions. No symptomatic cardiac events were identified during the study period ($P = .21$). CONCLUSIONS: An automated system running as a safety net can be an efficient method of detecting contraindicated drug combinations and serves an important role in the avoidance of potentially serious adverse drug events.

- 207 McNutt, R. A., R. Abrams, D. C. Arons and C. Patient Safety (2002). "Patient safety efforts should focus on medical errors." JAMA 287(15): 1997-2001.**

- 208 Meadows, G. and B. P. Chaiken (2002). "Computerized physician order entry: a prescription for patient safety." Nursing Economics 20(2): 76-7, 87.**

Abstract Clinician adoption of CPOE/CDS solutions is crucial to helping caregivers reduce medical errors and enhance patient safety. The LeapFrog Group CPOE/CDS report can be a helpful guide, but as clinicians concerned about the quality of health care and the well-being of our patients, we must play an active role in the successful adoption of these solutions by: 1. Making sure that your institution is committed to having the appropriate people

involved in the entire process, including nurse leaders. 2. Selecting a vendor that has the knowledge and clearly understands the importance of implementing this type of system. 3. Ensuring that your organization is selecting a system that actually meets the criteria defined by the LeapFrog Group.

- 209 Meaney, M. (2003). "Case management and patient safety." Case Manager 14(1): 28-9.**
- 210 Messenger, J. C., J. S. Rumsfeld, J. D. Carroll, J. Combes and S. Y. J. Chen (2002). "Enhancing patient safety during cardiac catheterization using simulation-based training." Topics in Health Information Management. 23(2): 82-93.**
- 211 Meyer, G. S. and L. Arnheim (2002). "Improving patient care. The power of two: improving patient safety through better physician-patient communication." Family Practice Management. 9(7): 47-8.**
- 212 Meyer, G. S. and J. M. Eisenberg (2002). "The end of the beginning: the strategic approach to patient safety research." Quality & Safety in Health Care 11(1): 3-4.**
- 213 Meyer, G. S. and C. Rall (2002). "Use of evidence-based data to drive your patient safety program." American Journal of Infection Control 30(5): 314-7.**

Abstract Helping patients become more informed and involved in their care could be your best strategy for reducing medical errors.

Abstract The Agency for Health Care Research and Quality (AHRQ) is committed to conducting and supporting health services research and promoting technical improvements that enhance the quality of health care delivered in the United States. A significant focus of AHRQ's efforts has been its work on patient safety, and it had depended on numerous collaborative efforts both inside and outside of the federal government to exponentially increase what it could accomplish alone. In 2001 fiscal year, Congress appropriated \$50 million for the AHRQ's patient safety research initiatives that were collectively aimed at expanding the nation's capacity to conduct research in this field. The portfolio is guided by a user-driven patient safety research agenda that was developed at the September 2000 National Summit on Medical Errors and Patient Safety Research. The research results generated by this initiative will provide an evidentiary base for system improvements that, when implemented, will greatly enhance the safety of the nation's health care system.

- 214 Millenson, M. L. (2002). "Pushing the profession: how the news media turned patient safety into a priority." *Quality & Safety in Health Care* 11(1): 57-63.**

Abstract The problem of patient safety has been repeatedly identified in the medical literature since the mid 1950s, but regular revelations about patient deaths and injuries resulting from treatment have had almost no effect on the actual practice of medicine. Only very recently has the medical profession made a systematic effort to reduce or eliminate the many preventable deaths and injuries that occur in hospitals each year. This review traces the diffusion of innovation in medical error reduction to the public shaming of the profession that occurred as a result of stories that appeared in the news media. The focus is on the USA, but news stories about patient safety are sparking a similar process throughout the western world. [References: 37]

- 215 Miller, M. R., A. Elixhauser and C. Zhan (2003). "Patient safety events during pediatric hospitalizations." *Pediatrics* 111(6 Pt 1): 1358-66.**

Abstract OBJECTIVE: Our objective was to describe potential patient safety events for hospitalized children, using the patient safety indicators (PSIs), and examine associations with these events. METHODS: PSI algorithms, developed by researchers at the Agency for Healthcare Research and Quality to identify potential in-hospital patient safety problems using administrative data, were applied to 3.8 million discharge records for children under 19 years from 22 states in the 1997 Healthcare Cost and Utilization Project. Prevalence of PSI events and associations with patient-level and hospital-level characteristics, length of stay, in-hospital mortality, and total charges were examined. RESULTS: The prevalence of pediatric patient safety events is significant with the highest rate found for birth trauma at 1.5 cases per every 100 births. The majority of these events for birth trauma consist of long bone and skull fractures, excluding the clavicle. Compared with records without PSI events, discharges with PSI events had 2- to 6-fold longer lengths of stay, 2- to 18-fold higher rates of in-hospital mortality, and 2- to 20-fold higher total charges. Bivariate and multivariate analyses found that all PSI events except birth trauma were directly associated with factors related to greater severity of illness and large urban teaching institutions. Birth trauma, however, was directly associated with black and Hispanic ethnicity but was not consistently associated with technologically sophisticated teaching institutions. CONCLUSIONS: The prevalence of birth trauma and other potential patient safety events for hospitalized children is high and comparable to hospitalized adults. These events are associated with increased length of stay, in-hospital mortality, and total charges. Associated factors differ significantly for birth trauma compared with other PSI events. Institutional application of the PSIs may be useful to identify processes of care that warrant further evaluation as the health care industry tackles the problem of patient safety, particularly for children.

- 216 Miller, M. W., A. A. Brayman and J. S. Abramowicz (1998). "Obstetric ultrasonography: a biophysical consideration of patient safety--the "rules" have changed." American Journal of Obstetrics & Gynecology 179(1): 241-54.**

Abstract We address the issue of health and safety in relation to exposure to diagnostic ultrasound, with particular emphasis given to obstetrics. In terms of fetal and maternal outcomes, the epidemiologic record of diagnostic ultrasound is exemplary but is primarily made on the basis of data derived from clinical devices whose outputs were relatively low compared with what is now allowable and available. The power outputs of clinical devices have been increasing over the past decade such that the potential for thermal and nonthermal insults is increased. For obstetric devices that use these higher outputs, the Food and Drug Administration now requires the presentation of 2 on-screen indexes, the thermal index and the mechanical index, in recognition of the 2 major mechanisms by which ultrasonography is known to affect cells and tissues. Greater responsibility for patient safety is now placed on the diagnostician; for the new indexes to be meaningful the diagnostician must be cognizant of the health and safety implications. The purpose of this article is to provide some guidance to the obstetrician in interpreting the indexes and to review the current status of ultrasonography biophysics in relation to the use of diagnostic ultrasound in obstetrics. [References: 66]

- 217 Miller, R. H. and R. R. Bovbjerg (2002). "Efforts to improve patient safety in large, capitated medical groups: description and conceptual model." Journal of Health Politics, Policy & Law 27(3): 401-40.**

Abstract Medical care should be safer. Inpatient problems and solutions have received the most attention; this outpatient qualitative case study addresses a gap in knowledge. We describe safety improvements among large physician groups, model the key influences on their behavior, and identify beneficial public and private policies. All groups were trying to reduce medical injury, which was part of the sample design. The most commonly targeted problems are those that are similar across groups: shortcomings in diagnosis, abnormal tests follow-up, scope of practice and referral patterns, and continuity of care. Medical group innovators vary greatly, however, in implementation of improvements, that is, in the extent to which they implement process changes that identify events/problems, analyze and track incidents, decide how to change clinical and administrative practices, and monitor impacts of the changes. Our conceptual model identifies key determinants: (1) demand for safety comes from external factors: legal, market, and professional; (2) organizational responses depend on internal factors: group size, scope, and integration; leadership and governance; professional culture; information-system assets; and financial and intellectual capital. Further, safety is an aspect of quality (the same tools, decision making, interventions, and monitoring apply), and safety management

benefits from prior efficiency management (similar skills and culture of innovation). Observed variation in even simple safeguards shows that existing safety incentives are too weak. Our model suggests that the biggest improvement would come from boosting the demand for quality and safety from both private and public larger group purchasers. Current policy relies too much on litigation and discipline, which have sometimes helped, but not solved, problems because they are inefficient, tend to drive needed information underground, and complicate needed cultural change. Patients' safety demand is also weak for want of information and market power. Big purchasers' demands, however, quickly influence the internal environment of medical groups, helping managers advance quality safety toward the top of groups' congested decision-making "queues."

218 Mitchell, P. (2002). "Nursing is essential to improving patient safety." *Journal of Advanced Nursing* 38(2): 109-10.

219 Mitka, M. (2000). "Patient safety: from research to practice." *JAMA* 284(18): 2305-6.

220 Mohr, J. J., H. T. Abelson and P. Barach (2002). "Creating effective leadership for improving patient safety." *Quality Management in Health Care* 11(1): 69-78.

Abstract Leadership has emerged as a key theme in the rapidly growing movement to improve patient safety. Leading an organization that is committed to providing safer care requires overcoming the common traps in thinking about error, such as blaming individuals, ignoring the underlying systems factors, and blaming the bureaucracy of the organization. Leaders must address the system issues that are at work within their organizations to allow individual and organizational learning to occur.

221 Mohr, J. J., P. Barach, J. P. Cravero, G. T. Blike, M. M. Godfrey, P. B. Batalden and E. C. Nelson (2003). "Microsystems in health care: Part 6. Designing patient safety into the microsystem." *Joint Commission Journal on Quality & Safety* 29(8): 401-8.

Abstract BACKGROUND: This article explores patient safety from a microsystems perspective and from an injury epidemiological perspective and shows how to embed safety into a microsystem's operations.

MICROSYSTEMS PATIENT SAFETY SCENARIO: Allison, a 5-year-old preschooler with a history of "wheezy colds," and her mother interacted with several microsystems as they navigated the health care system. At various points, the system failed to address Allison's needs. The Haddon matrix provides a useful framework for analyzing medical failures in patient safety, setting the stage for developing countermeasures. CASE STUDY: The case study shows the types of failures that can occur in complex medical care

settings such as those associated with pediatric procedural sedation. Six patient safety principles, such as "design systems to identify, prevent, absorb, and mitigate errors," can be applied in a clinical setting. In response to this particular case, its subsequent analysis, and the application of microsystems thinking, the anesthesiology department of the Children's Hospital at Dartmouth developed the PainFree Program to provide optimal safety for sedated patients. CONCLUSION: Safety is a property of a microsystem and it can be achieved only through thoughtful and systematic application of a broad array of process, equipment, organization, supervision, training, simulation, and team-work changes.

222 Monahan, T. (2002). "Patient safety tools up. Construction of new policies, procedures, standards and systems is getting under way." *Healthcare Informatics* 19(3): 28-32, 34.

223 Morath, J. (2003). "Changing the healthcare culture: the consumer as part of the system of care." *Front Health Service Manage* 19(4): 17-28.

Abstract As more information on the poor quality of healthcare becomes available, consumers, purchasers, and health plans are asking questions that will change healthcare delivery and the practices of purchasers. Past practices that include fragmented approaches; fleeting incentives; short-term, transaction-based payment structures; and failure to engage the customer are coming to an end. They are being replaced by collaborative and systemic views. Consumers, through their purchasers of healthcare, are demanding new methods, new metrics, and a higher standard of accountability for all parties. Purchasers themselves are turning up the heat on providers to act with the consumer perspective in mind and are advocating continuous, consumer-driven healthcare delivery.

224 Morello, D. C., G. A. Colon, S. Fredricks, R. E. Iverson and R. Singer (1997). "Patient safety in accredited office surgical facilities." *Plastic & Reconstructive Surgery* 99(6): 1496-500.

Abstract The medical profession is besieged by concerns about cost containment. This in turn has focused attention on the use of ambulatory surgical facilities. However, the costs of hospital outpatient surgery programs usually prevent them from being competitive when compared with the costs of using office surgical facilities. To address the question of patient safety in office surgical facilities, the American Association for Accreditation of Ambulatory Surgery Facilities (AAAASF) sent a questionnaire to its accredited facilities. Two-hundred and forty-one (57.7 percent) of the 418 accredited facilities returned the anonymous questionnaires, a very high response rate. Of interest are the following findings: 400,675 operative procedures were reported during a 5-year period. Significant complications (hematoma, hypertensive episode, wound infection, sepsis, hypotension) were infrequent,

occurring in 1 in every 213 cases. Return to the operating room within 24 hours and preventive hospitalization were less frequent. A death occurred in 1 in 57,000 cases (0.0017 percent). The overall risk is comparable in an accredited office (plastic surgical facility) and in a free-standing or hospital ambulatory surgical facility. This study documents an excellent safety record for plastic surgery done in accredited office surgical facilities by board-certified plastic surgeons.

- 225 Mrayyan, M. T. and D. L. Huber (2003). "The nurse's role in changing health policy related to patient safety." JONA's Healthcare Law, Ethics, & Regulation 5(1): 13-8.**

Abstract Nurses' roles in shaping health policy in the United States related to patient safety have not been fully expanded. This article explores various patient safety issues and how nurses can become involved to shape health policy in this area.

- 226 Mulligan, M. and L. Faldmo (2000). "Patient safety issue: patient falls." QRC Advisor 16(9): 1-4.**

- 227 Mustard, L. W. (2002). "The culture of patient safety." JONA's Healthcare Law, Ethics, & Regulation 4(4): 111-5.**

Abstract Hospital patient safety culture is examined as a critical component of quality where preventable and identifiable adverse and sentinel events should not occur. The author, a former hospital executive, illustrates how culture helps illuminate patient safety practices using examples from hospital situations he encountered as a consultant. These cases demonstrate the hospital nurses' focuses on job requirements and training as opposed to actually doing the "right thing" at the "right time." The nurse hospitalist, an advanced practice nurse, is proposed as a daily teacher and facilitator for hospital nurses based on a curriculum of day-to-day examples of good patient care through training and observation of patient care as it is being given.

- 228 Mycek, S. (2001). "Patient safety: it starts with the board." Trustee 54(5): 8-12.**

Abstract Creating a non-punitive culture of safety--where everyone throughout the organization makes patient safety a number-one priority--means that the board has to set the tone. It must insist on a stringent safety plan and monitor it closely and continuously.

- 229 Myers, S. and J. Lynn (2002). "The Center for Patient Safety at the End of Life: seeking reliability and safety in the care of individuals nearing the end of life with serious illness." Topics in Health Information Management. 23(2): 13-21.**

- 230 Myers, S. S. and J. Lynn (2001). "Patients with eventually fatal chronic illness: their importance within a national research agenda on improving patient safety and reducing medical errors." *Journal of Palliative Medicine* 4(3): 325-32.**

Abstract In September 2000, the Quality Interagency Coordination (QuIC) Task Force invited the RAND Center to Improve Care of the Dying and Americans for Better Care of the Dying to testify at its National Summit on Medical Errors and Patient Safety Research. In their testimony, the organizations urged the QuIC to consider the special vulnerability and needs of individuals at the end of life in crafting their research agenda. Patients at the end of life are particularly vulnerable to medical errors and other lapses in patient safety for three reasons: (1) substantially increased exposure to medical errors; (2) more serious effects from errors because they cannot protect themselves from risks and have less reserve with which to overcome the effects; and (3) pervasive patterns of care that run counter to well-substantiated evidence-based practices. A national research agenda on preventing medical errors and increasing patient safety must include a focus on how to improve shortcomings affecting these vulnerable patients. The QuIC's preliminary research agenda, released in October 2000, included patients coming to the end of life. The Agency for Healthcare Research and Quality, the lead federal agency for researching patient safety and medical errors, released between November 2000 and April 2001 six Requests for Applications for research into medical errors.

- 231 Nadzam, D. M. and R. M. Macklis (2001). "Promoting patient safety: is technology the solution?" *Joint Commission Journal on Quality Improvement* 27(8): 430-6.**

Abstract BACKGROUND: On April 30, 2001, the Cleveland Clinic Foundation and Cleveland Clinic Health System Quality Institute sponsored a 1-day conference focused on technology in patient safety. PATIENT SAFETY-A CALL TO ACTION: Kenneth W. Kizer focused on ten high-priority patient safety strategies identified by the National Quality Forum-including implementing recognized "safe practices", recognizing and dealing with professional misconduct, and supporting efforts to create a nonpunitive environment for health care error reporting. CULTURAL IMPLICATIONS OF INTRODUCING NEW TECHNOLOGY: Randolph A. Miller described a computerized clinician order-entry system used to provide decision support, reduce excess test ordering, introduce cost savings, and meet regulations for inpatient radiology and cardiology tests. USING BAR CODES TO ELIMINATE MEDICATION ERRORS: Jeff Ramirez reported on the Veterans Health Administration's use of bar coding technology for point-of-care validation of medication administration, which has resulted in improvements in response time; the efficiency of the dispensing, delivery, and administration process; and patient care. HOW TO MAKE COMPUTERS TEAM PLAYERS: The

knowledge base exists to design computers as team players that expand human expertise and help health care practitioners better create safety. Yet David D. Woods challenged the audience to anticipate the changing shape of iatrogenic risk as a result of increasing dependence on automation in health care. **TECHNOLOGY AND MEDICATION SYSTEMS:** Mark Neuenschwander spoke about automating various steps within the medication use system, through computerized prescriber order entry and bedside scanning. **FUTURE TECHNOLOGICAL POSSIBILITIES:** Charles Denham suggested how technology may aid health care professionals in their care of patients, such as in using predictive modeling to identify the risks of therapeutic intervention.

- 232 Nadzam, D. M. and R. M. Macklis (2001). "Conference report. Promoting patient safety: is technology the solution?" Joint Commission Journal on Quality Improvement. 27(8): 430-6.**
- 233 Needleman, J. and P. Buerhaus (2003). "Nurse staffing and patient safety: current knowledge and implications for action." International Journal for Quality in Health Care 15(4): 275-7.**
- 234 Negrete, J. C. (2001). "Harm reduction: quo vadis?" Addiction 96(4): 543-5.**
- 235 Neily, J., G. Ogrinc, P. Mills, R. Williams, E. Stalhandske, J. Bagian and W. B. Weeks (2003). "Using aggregate root cause analysis to improve patient safety." Joint Commission Journal on Quality & Safety 29(8): 434-9, 381.**
- Abstract* The authors describe use of aggregate root cause analysis, which provides a systematic process for analyzing high-priority, frequent events.
- 236 Nester, T. M. and L. S. Hale (2002). "Effectiveness of a pharmacist-acquired medication history in promoting patient safety." American Journal of Health-System Pharmacy 59(22): 2221-5.**
- 237 Newell, L. M. and D. Christensen (2003). "Who's counting now? ROI for patient safety IT initiatives." Journal of Healthcare Information Management 17(4): 29-35.**

Abstract The impact and expectation of cost-justifying patient safety IT initiatives using a traditional ROI must evolve to focus beyond the financial benefit. It must encompass overall patient safety, patient satisfaction, and employee and physician satisfaction benefit categories. Computerized physician order entry (CPOE) and bar code medication administration (BCMA) systems are two particular clinical point-of-care products that will play a key role in addressing patient safety objectives. Integrating the two technologies can bring both financial and clinical benefits.

- 238 Nicklin, W. and J. E. McVeety (2002). "Canadian nurses' perceptions of patient safety in hospitals: Canadian nurses describe their perceptions of patient safety in teaching hospitals -- a wake up call!" Canadian Journal of Nursing Leadership. 15(3): 11-21.**

Abstract The topic of patient safety within the health care system is receiving increasing attention. The Academy of Canadian Executive Nurses conducted a national survey on nurses' perceptions of patient safety, using focus groups from Academic Health Science Centres. Over a three month time frame, 22 organizations, and 33 focus groups comprised of 503 nurses provided responses to six questions regarding patient safety in hospitals. The study was designed as a preliminary fact finding initiative resulting in this descriptive report of the concerns as identified within the focus groups. With each issue identification, they were coded and grouped into 23 themes. Nurses overwhelmingly responded that the health care environment, in which they provide care, presents escalating risk to their patients. In particular, Workload/Pace of Work, Human Resources, Nursing Shortage/Staffing, Restructuring/Bed Closures, Patients/Clients, Systems Issues, Physical Environment and Technology/Specialization were themes emphasized as contributing to increased risk in patient care. Health care leaders must play a key role in developing strategies to address the issues nurses have identified and demonstrate a commitment to controlling the situation. This study encourages research into a more explicit understanding of the issues and identification of strategies to address patient safety in health care.

- 239 Nobel, J. J. (1996). "Medical device accident reporting: does it improve patient safety?" Studies in Health Technology & Informatics 28: 29-35.**

Abstract A significant number of patient injuries and deaths are associated with the use of medical devices. After several decades of experience in device evaluation and accident investigation, ECRI believes that many of these adverse effects could not be predicted in advance, even with the most sophisticated design validation techniques. Reporting networks with investigational capability that identify problem devices and provide feedback about adverse effects to manufacturers and medical device users are essential to meet the health communities obligation to provide safe and effective products and patient care.

- 240 Noble, A. A. and T. A. Brennan (2001). "Managing care in the new era of "systems-think": the implications for managed care organizational liability and patient safety." Journal of Law, Medicine & Ethics 29(3-4): 290-304.**

241 Nolan, T. W. (2000). "Education and debate. System changes to improve patient safety." *British Medical Journal*. 320(7237): 771-3.

242 Nye, P. and J. Wilson (1998). "Patient safety and the reuse of single-use medical items." *British Journal of Nursing* 7(19): 1167-8.

Abstract Trusts owe a duty of care to patients, staff, the public and the environment. This article considers the risk issues associated with the reuse of medical devices. The practice of reusing medical devices labelled by the manufacturer for single-use only must be carefully considered by managers and clinicians responsible for patient safety, to ensure that account has been taken of outcomes which may adversely affect clinical procedure and be harmful to the patient.

243 O'Connor, T. (1996). "Patient safety under threat." *Nursing New Zealand (Wellington)* 2(6): 18-9.

244 Odom, J. (2001). "Patient safety: to do no harm." *Journal of Perianesthesia Nursing* 16(4): 243-5.

245 Oetgen, W. J. and P. M. Oetgen (2003). "A business case for patient safety." *Physician Executive* 29(5): 39-42.

246 O'Grady, N. P., J. L. Gerberding, R. A. Weinstein and H. Masur (2003). "Patient safety and the science of prevention: the time for implementing the Guidelines for the prevention of intravascular catheter-related infections is now." *Critical Care Medicine* 31(1): 291-2.

247 Oudeck, D. M. (2001). "Credentialing corner. The Patient Safety Act of 2001: an operational commentary." *Home Health Care Management & Practice*. 13(6): 484-6.

248 Ortiz, E., G. Meyer and H. Burstin (2001). "The role of clinical informatics in the Agency for Healthcare Research and Quality's efforts to improve patient safety." *Proceedings / AMIA*: 508-12.

Abstract In 1998, the Institute of Medicine (IOM) issued a report on medical errors, which estimated that up to 98,000 people die in U.S. hospitals each year from errors. This report raised concerns that medical errors have become a national public health problem that should be addressed in the same manner as other epidemics such as heart disease, diabetes, and obesity. In 2001, the IOM released a follow-up report encompassing a broader range of quality issues. They concluded that the U.S. healthcare system is outmoded and incapable of providing consistent, high-quality care. They outlined a strategy for redesigning U.S. healthcare delivery to achieve safe, dependable, high-quality care, which emphasizes information

technology as an integral part of the solution. AHRQ's fiscal year 2001 appropriation included an increase of \$50 million dollars for initiatives to reduce medical errors and improve patient safety. AHRQ responded to this mandate by developing a series of research solicitations that form an integrated set of activities to design and test best practices for reducing errors in multiple health care settings. This paper discusses the components of this program and the central role of medical informatics research in the Agency's efforts to improve the safety of medical care in America.

- 249 Ortiz, E., G. Meyer and H. Burstin (2002). "Clinical informatics and patient safety at the Agency for Healthcare Research and Quality." *Journal of the American Medical Informatics Association*. 9(6): Suppl: S2-7.**

Abstract In 1998, the Institute of Medicine (IOM) issued a report on medical errors, which estimated that up to 98,000 people die in U.S. hospitals each year from errors. This report raised concerns that medical errors have become a national public health problem that should be addressed in the same manner as other epidemics such as heart disease, diabetes, and obesity. In 2001, the IOM released a follow-up report encompassing a broader range of quality issues. They concluded that the U.S. healthcare system is outmoded and incapable of providing consistent, high-quality care. They outlined a strategy for redesigning U.S. healthcare delivery to achieve safe, dependable, high-quality care, which emphasizes information technology as an integral part of the solution. AHRQ's fiscal year 2001 appropriation included \$50 million dollars for initiatives to reduce medical errors and improve patient safety. AHRQ responded to this mandate by developing a series of research solicitations that form an integrated set of activities to design and test best practices for reducing errors in multiple health care settings. This paper discusses the components of this program and the central role of medical informatics research in the Agency's efforts to improve the safety of medical care in America.

- 250 Pakpahan, R., E. A. Balas and S. A. Boren (2002). "Computable decision modules for patient safety in child health care." *Proceedings / AMIA*: 592-6.**

Abstract OBJECTIVE: To identify controlled evidence from the child health literature on patient conditions and clinical procedures that resulted in unacceptable adverse outcomes. METHODS: Systematic searches of MEDLINE (1966 to 2001), and Cochrane Database of Systematic Reviews (2001) were done. Studies that met the eligibility criteria, were verified for quality of methodology and lack of conflicting studies. A knowledge base of Child Health Safety Modules was then developed. The knowledge base could be used to transfer controlled evidence on potentially harmful interventions into clinical decision support systems conforming with Arden Syntax, a widely

applied computer standard. RESULTS: The searches identified knowledge to create 41 Child Health Safety Modules for medications and procedures in child health care, from 29 randomized controlled trials and 12 non-randomized controlled studies. The modules are focused on 28 medication interventions and 13 other clinical procedures. Eighty five percent of the studies were published between 1997-2001. CONCLUSION: An increasing amount of controlled evidence on risks of adverse outcomes in child health is available to alert clinicians when potential planning errors are about to be overlooked.

251 Parisi, L. L. (2003). "Patient identification: the foundation for a culture of patient safety." *Journal of Nursing Care Quality* 18(1): 73-9.

Abstract Patients, consumer advocacy groups, and regulatory and accrediting bodies have spoken out about the importance of patient safety in the health care environment. Understandably, patient safety is a leading concern for both consumers and health care providers. These efforts have encouraged health care organizations and providers to review and revise, as necessary, routine practices that contribute to a culture of patient safety and avoid medical errors. This article outlines the process and outcome of a performance improvement initiative to develop a standard patient identification policy.

252 Parsons, D. W. (2000). "Federal legislation efforts to improve patient safety." *Effective Clinical Practice* 3(6): 309-12.

253 Patterson, E. S., R. I. Cook and M. L. Render (2002). "Improving patient safety by identifying side effects from introducing bar coding in medication administration." *Journal of the American Medical Informatics Association* 9(5): 540-53.

Abstract OBJECTIVE: In addition to providing new capabilities, the introduction of technology in complex, sociotechnical systems, such as health care and aviation, can have unanticipated side effects on technical, social, and organizational dimensions. To identify potential accidents in the making, the authors looked for side effects from a natural experiment, the implementation of bar code medication administration (BCMA), a technology designed to reduce adverse drug events (ADEs). DESIGN: Cross-sectional observational study of medication passes before (21 hours of observation of 7 nurses at 1 hospital) and after (60 hours of observation of 26 nurses at 3 hospitals) BCMA implementation. MEASUREMENTS: Detailed, handwritten field notes of targeted ethnographic observations of in situ nurse-BCMA interactions were iteratively analyzed using process tracing and five conceptual frameworks. RESULTS: Ethnographic observations distilled into 67 nurse-BCMA interactions were classified into 12 categories. We identified five negative side effects after BCMA implementation: (1) nurses confused by

automated removal of medications by BCMA, (2) degraded coordination between nurses and physicians, (3) nurses dropping activities to reduce workload during busy periods, (4) increased prioritization of monitored activities during goal conflicts, and (5) decreased ability to deviate from routine sequences. **CONCLUSION:** These side effects might create new paths to ADEs. We recommend design revisions, modification of organizational policies, and "best practices" training that could potentially minimize or eliminate these side effects before they contribute to adverse outcomes.

- 254 Perry, S. J. (2002). "Profiles in patient safety: organizational barriers to patient safety." *Academic Emergency Medicine* 9(8): 848-50.**
- 255 Peterson, B. M. (2002). "Veterans Affairs medical centers lead the way in patient safety." *Health It Advisory Report*. 3(2): 31-2.**
- 256 Petty, W. C., M. Kremer and C. Biddle (2002). "A synthesis of the Australian Patient Safety Foundation Anesthesia Incident Monitoring Study, the American Society of Anesthesiologists Closed Claims Project, and the American Association of Nurse Anesthetists Closed Claims Study." *AANA Journal* 70(3): 193-202.**

Abstract The study of anesthesia risk is fraught with methodological challenges and the epidemiological uncertainty peculiar to anesthesia: the true frequency of anesthetic mortality is unknown. If anesthesia mortality is as rare as 1 in 200,000 cases, the sample needed to study this phenomenon would be enormous. Existing studies provide insights to the genesis of damaging events and adverse outcomes in anesthesia. We examined research design, methodology, and findings to date in 3 studies of anesthesia risk. Limitations include self-report by providers in the Australian study and the retrospective nature of closed claims research in American studies. Respiratory events were the largest class of injury in all 3 studies; substandard care frequently was involved. Australian investigators noted a high rate of human error and equipment issues. American physician investigators found that death or brain damage occurred in 85% of respiratory cases, 72% of which were deemed preventable. Nurse anesthetist investigators had similar findings for respiratory claims. Patient acuity and procedure complexity may be less significant contributory factors to anesthesia risk than are provider vigilance and clinical decision making. Prospective multicenter studies conducted politically may be the only type of research that definitively addresses the myriad issues in anesthesia risk research.

- 257 Pierce, E. C., Jr. (2002). "Looking back on the anesthesia critical incident studies and their role in catalysing patient safety." *Quality & Safety in Health Care*. 11(3): 282-3.**

- 258 Piotrowski, M. M., S. Saint and D. B. Hinshaw (2002). "The Safety Case Management Committee: expanding the avenues for addressing patient safety." *Joint Commission Journal on Quality Improvement* 28(6): 296-305.**

Abstract **BACKGROUND:** The greatest gains in patient safety are likely to result from using a multifaceted framework of safety enhancement initiatives. The Safety Case Management Committee, which has been meeting at the VA Ann Arbor Healthcare System since early 1999, is one such initiative; it is directed at broadening organizational involvement in creating a safer clinical environment. The committee's objective is to address fundamental issues related to patient safety and quality of care. The committee aims to develop thematic approaches to improving major systems triggered by unsafe or risky incidents that demonstrate either iatrogenic harm or risk of harm to patients. **COMMITTEE STRUCTURE AND FUNCTIONING:** Committee members represent top management, middle management, and front-line employees, but membership is weighted toward those in direct patient care roles. The group also includes a consumer representative. Critical issues are addressed through rigorous case discussion, literature review, and expert consultation. **RESULTS:** In a 3-year period (Feb 1999 through Dec 2001), 85% of the group's 45 recommendations have been implemented. Topics have included reducing medication errors during emergency procedures, enhancing palliative care services, minimizing the risk of missed x-ray findings, optimizing anticoagulation management, reducing the risk of vascular catheter-related infection, and improving pain management. **SUMMARY:** The Safety Case Management Committee has successfully addressed actual and potential errors and has implemented strategic safety improvements. The dedicated efforts of highly motivated clinicians who serve on such a committee can augment and enhance risk management advances made through other channels.

- 259 Pittman, M. A. and F. S. Margolin (2001). "Community health. Patient safety: the community health connection." *Trustee* 54(9): 33-4.**

- 260 Pringle, M. (2001). "Ensuring patient safety." *British Journal of General Practice* 51(472): 876-7.**

- 261 Priselac, T. M. (2003). "Information technology's role in improving practice environments and patient safety." *Nursing Outlook* 51(3): S11-3.**

- 262 Reeder, J. M. (2001). "Patient safety: cultural changes needed." *Healthcarepapers* 2(1): 48-54, discussion 86-9.**

Abstract One essential aspect to improve patient safety and reduce medical errors focuses on the need for healthcare organizations to promote a patient-

safety culture, and to banish the blame and shame culture and "conspiracy of silence"--traditional approaches within organizations when reacting to medical errors. Culture change arises when physicians, pharmacists, nurses and other self-regulated professionals are encouraged and expected to report errors without fear of retribution. A culture of patient safety will evolve in healthcare organizations and regulatory agencies only if top leaders demonstrate their commitment to change by making this a personal priority by assimilating new knowledge about medical errors and human behavior. Leaders must also promote strategies to integrate patient safety into every process that supports the system of patient-care delivery. [References: 19]

263 Reeder, J. M. (2001). "Patient safety, errors and mistakes, and perioperative nursing." *Seminars in Perioperative Nursing*. 10(2): 115-8.

Abstract Today's world of advancing technology in health care represents complex diagnostic, operational, and administrative processes, all of which must be coordinated to ensure the delivery of safe, quality health care. Nonetheless, the health care industry's implementation and practice of quality measures fall below the standards of other industries, such as aerospace, telecommunications, or information technology. With health care performing at this lower level, it is no wonder that headline grabbers dwell on the deaths that occur as a result of medical errors. A new emphasis on quality management is essential in nursing education and in quality management to improve US health care. This article summarizes recent reports on medical errors and suggests strategies to improve patient safety. Copyright (c) 2001 by W.B. Saunders Company

264 Reiling, J., C. Breckbill, M. Murphy, S. McCullough and S. Chernos (2003). "Patient safety. Facility designing around patient safety and its effect on nursing." *Nursing Economics*. 21(3): 143-7.

Abstract Rather than looking at the flaws in the design of the health care system when errors occur, blame is often directed at the caregivers., One community hospital recognized the opportunity to improve patient safety through facility design., Safety-driven design principles were developed including designs to minimize the most prominent serious, precarious events., Safety design changes to the nursing environment were aimed at creating a safe, efficient, patient-centered environment.

265 Reiling, J. and K. Neal (2003). "Patient safety alert. Construction brings opportunity to boost patient safety." *Hospital Case Management* 11(1): suppl 1-3.

266 Reinbold, O. (2001). "Quality. Board leadership for patient safety: new JCAHO standards." *Trustee* 54(6): 35-6.

- 267 Roberts, K. H. (1999). "Five ingredients for patient safety." *Ambulatory Outreach*: 10-3.
- 268 Robinson, J. L. and D. B. Nash (2000). "Consumers' role in patient safety." *QRC Advisor* 17(2): 1-3.
- 269 Robinson, K. (2002). "'To err is human...' patient safety initiatives for EMS." *Journal of Emergency Nursing* 28(1): 47-8.
- 270 Rohrich, R. J. (2003). "Tort reform and state medical boards: an opportunity to enhance patient safety and promote the public trust." *Plastic & Reconstructive Surgery* 111(7): 2395-7.
- 271 Rohrich, R. J., J. A. Persing and L. Phillips (2003). "Mandating shorter work hours and enhancing patient safety: a new challenge for resident education." *Plastic & Reconstructive Surgery* 111(1): 395-7.
- 272 Rollins, G. (2001). "Report outlines evidence supporting 79 patient safety practices." *Report on Medical Guidelines & Outcomes Research* 12(16): 1-2, 5.
- 273 Rollins, G. (2001). "Quality, patient safety recognized in incentive plans, survey finds." *Report on Medical Guidelines & Outcomes Research* 12(15): 5-7.
- 274 Rollins, G. (2001). "New patient safety standards require up-front identification of likely medical errors." *Report on Medical Guidelines & Outcomes Research* 12(3): 5-7.
- 275 Rollins, G. (2003). "National quality forum endorses four new patient safety practices." *Report on Medical Guidelines & Outcomes Research* 14(10): 10, 12.
- 276 Romano, M. (2001). "Where the money goes. Two big insurers try different tacks on patient safety." *Modern Healthcare* 31(29): 4-5, 14.
- 277 Romano, M. (2002). "And the winner is.... Patient-safety awards abound, but do they represent real progress in the fight against medical errors, or are they just for show?" *Modern Healthcare* 32(16): 28-30.
- 278 Romano, P. S., A. Elixhauser, K. M. McDonald and M. R. Miller (2002). "Coding notes. HIM's role in monitoring patient safety." *Journal of Ahima*. 73(3): 72-4.

- 279 Romano, P. S., J. J. Geppert, S. Davies, M. R. Miller, A. Elixhauser and K. M. McDonald (2003). "A national profile of patient safety in U.S. hospitals." *Health Affairs* 22(2): 154-66.**

Abstract Measures based on routinely collected data would be useful to examine the epidemiology of patient safety. Extending previous work, we established the face and consensual validity of twenty Patient Safety Indicators (PSIs). We generated a national profile of patient safety by applying these PSIs to the HCUP Nationwide Inpatient Sample. The incidence of most nonobstetric PSIs increased with age and was higher among African Americans than among whites. The adjusted incidence of most PSIs was highest at urban teaching hospitals. The PSIs may be used in AHRQ's National Quality Report, while providers may use them to screen for preventable complications, target opportunities for improvement, and benchmark performance.

- 280 Rose, C. and M. Jagim (2003). "Emergency. Psychiatric triage RNs in the ED: a role that promotes patient safety and reduces bedlam in the ED." *AJN, American Journal of Nursing*. 103(9): 101-2.**

- 281 Royer, T. (2002). "Quality is a mandate. AHA task force latest bid to improve patient safety." *Modern Healthcare* 32(7): 38-9.**

- 282 Runciman, W. B. (2002). "Lessons from the Australian Patient Safety Foundation: setting up a national patient safety surveillance system--is this the right model?" *Quality & Safety in Health Care* 11(3): 246-51.**

Abstract The evolution of the concepts and processes underpinning the Australian Patient Safety Foundation's systems over the last 15 years are traced. An ideal system should have the following attributes: an independent organisation to coordinate patient safety surveillance; agreed frameworks for patient safety and surveillance systems; common, agreed standards and terminology; a single, clinically useful classification for things that go wrong in health care; a national repository for information covering all of health care from all available sources; mechanisms for setting priorities at local, national and international levels; a just system which caters for the rights of patients, society, and healthcare practitioners and facilities; separate processes for accountability and "systems learnings"; the right to anonymity and legal privilege for reporters; systems for rapid feedback and evidence of action; mechanisms for involving and informing all stakeholders. There are powerful reasons for establishing national systems, for aligning terminology, tools and classification systems internationally, and for rapid dissemination of successful strategies.

- 283 Runciman, W. B., M. J. Edmonds and M. Pradhan (2002). "Setting priorities for patient safety." *Quality & Safety in Health Care* 11(3): 224-9.**

Abstract BACKGROUND: Current "flags" for adverse events (AEs) are biased towards those with serious outcomes, potentially leading to failure to address mundane common problems. AIM: To provide a basis for setting priorities to improve patient safety by ranking adverse events by resource consumption as well as by outcome. This was done by classifying a set of AEs, according to how they may be prevented, into "Principal Natural Categories" (PNCs). SETTING: AEs associated with a representative sample of admissions to Australian acute care hospitals. DESIGN: AEs were classified into PNCs which were ranked by overall frequency, an index of resource consumption (a function of mean extended hospital stay and the number of cases in each PNC), and severity of outcome. RESULTS: The 1712 AEs analysed fell into 581 PNCs; only 28% had more than two cases. Most resource use (60%) was by AEs which led to minor disabilities, 36% was by those which led to major disabilities, and 4% by those associated with death. Most of the events with serious outcomes fell into fewer than 50 PNCs; only seven of these PNCs had more than six cases resulting in serious outcomes. CONCLUSIONS: If interventions for AEs are triggered only by serious outcomes by, for example, using recommended risk scoring methods, most problems would not be addressed, particularly the large number of mundane problems which consume the majority of resources. Both serious and mundane problems should be addressed. Most types of events occur too infrequently to be characterised at a hospital level and require large scale (preferably national) collections of incidents and events.

284 Runy, A. L. (2002). "Patient safety. Quest for quality: lessons learned, challenges met." *Hospitals & Health Networks* 76(11): 24-5.

285 Sage, W. M. (2002). "Putting the patient in patient safety: linking patient complaints and malpractice risk." *JAMA*. 287(22): 3003-5.

286 Sage, W. M. (2003). "Medical liability and patient safety." *Health Affairs* 22(4): 26-36.

Abstract Political debate over medical malpractice reform seldom takes meaningful account of its policy context, including the emerging science of patient safety. Instead, stakeholders on both sides use the rhetoric of patient safety to support entrenched positions on hardened proposals such as capping damages and limiting access to information about errors. Despite its *deja vu* quality, the current malpractice crisis can only be understood and addressed as the product of changes in the health care system since the last crisis nearly twenty years ago--changes that also informed the patient safety movement. Patient safety may therefore serve as a bridge between medical liability and health policy.

- 287 Sanford, K. (2002). "Don't be afraid to ask: patient safety campaign encourages consumers to 'speak up' about the care they receive." *Nurseweek California*. 15(12): 23-4.
- 288 Sarudi, D. (2001). "A commitment to safety. A toolkit for JCAHO's new patient safety standards." *Health Forum Journal* 44(4): 19-25.
- 289 Sarudi, D. (2001). "A commitment to safety. Tools for implementing JCAHO's new patient safety standards." *Trustee* 54(6): 15-21.
- 290 Sarudi, D. (2001). "Patient safety. File a plan, or else." *Hospitals & Health Networks* 75(2): 18, 20.
- 291 Saufl, N. M. (2002). "JCAHO's patient safety standards." *Journal of Perianesthesia Nursing* 17(4): 265-9.
- 292 Saunders, W. and A. Marsh (1999). "Harm reduction and the use of current illegal drugs: some assumptions and dilemmas." *Journal of Substance Use*. 4(1): 3-9.
- 293 Scarrow, P. K. (2003). "The Partnership Symposium 2002: Smart Designs for Patient Safety." *Journal for Healthcare Quality*. 25(3): 43-4.
- 294 Schaefer, D. J., J. D. Bourland and J. A. Nyenhuis (2000). "Review of patient safety in time-varying gradient fields." *Journal of Magnetic Resonance Imaging* 12(1): 20-9.

Abstract In magnetic resonance, time-varying gradient magnetic fields (dB/dt) may stimulate nerves or muscles by inducing electric fields in patients. Models predicted mean peripheral nerve and cardiac stimulation thresholds. For gradient ramp durations of less than a few milliseconds, mean peripheral nerve stimulation is a safe indicator of high dB/dt. At sufficient amplitudes, peripheral nerve stimulation is perceptible (i.e., tingling or tapping sensations). Magnetic fields from simultaneous gradient axes combine almost as a vector sum to produce stimulation. Patients may become uncomfortable at amplitudes 50%-100% above perception thresholds. In dogs, respiratory stimulation has been induced at about 300% of mean peripheral nerve thresholds. Cardiac stimulation has been induced in dogs by small gradient coils at thresholds near Reilly's predictions. Cardiac stimulation required nearly 80 times the energy needed to produce nerve stimulation in dogs. Nerve and cardiac stimulation thresholds for dogs were unaffected by 1.5-T magnetic fields.

- 295 Scheckler, W. E. (2002). "Healthcare epidemiology is the paradigm for patient safety." *Infection Control & Hospital Epidemiology* 23(1): 47-51.

- 296 Schenkel, S. (2000). "Promoting patient safety and preventing medical error in emergency departments." *Academic Emergency Medicine* 7(11): 1204-22.**

Abstract An estimated 108,000 people die each year from potentially preventable iatrogenic injury. One in 50 hospitalized patients experiences a preventable adverse event. Up to 3% of these injuries and events take place in emergency departments. With long and detailed training, morbidity and mortality conferences, and an emphasis on practitioner responsibility, medicine has traditionally faced the challenges of medical error and patient safety through an approach focused almost exclusively on individual practitioners. Yet no matter how well trained and how careful health care providers are, individuals will make mistakes because they are human. In general medicine, the study of adverse drug events has led the way to new methods of error detection and error prevention. A combination of chart reviews, incident logs, observation, and peer solicitation has provided a quantitative tool to demonstrate the effectiveness of interventions such as computer order entry and pharmacist order review. In emergency medicine (EM), error detection has focused on subjects of high liability: missed myocardial infarctions, missed appendicitis, and misreading of radiographs. Some system-level efforts in error prevention have focused on teamwork, on strengthening communication between pharmacists and emergency physicians, on automating drug dosing and distribution, and on rationalizing shifts. This article reviews the definitions, detection, and presentation of error in medicine and EM. Based on review of the current literature, recommendations are offered to enhance the likelihood of reduction of error in EM practice.

- 297 Schuerenberg, B. K. (2003). "CIOs make patient safety an I.T. priority. CIOs are using diverse I.T. strategies to help reduce medical errors." *Health Data Management* 11(8): 54, 57-60, 62.**

- 298 Schwartzberg, J. G. (2002). "Patient safety. Low health literacy: what do your patients really understand?" *Nursing Economics*. 20(3): 145-7.**

Abstract Health literacy refers to the ability to read, understand, and act on health care information. XXABXX Patients with low literacy skills are twice as likely to be hospitalized and twice as likely to report poor health. XXABXX Low health literacy is estimated to cost \$73 billion annually in excess hospitalization days alone. XXABXX The success or failure of medical care in the 21st century rests increasingly on the ability of patients (perhaps with help from their families) to carry out complex health instructions on their own.

- 299 Schyve, P. M. (2003). "What you can do: the trustee, patient safety, and JCAHO." *Trustee* 56(2): 19-21, 1.**

Abstract The Joint Commission has developed patient safety standards that hospital leaders, including trustees, are responsible for implementing, along with National Safety Goals and recommendations.

- 300 Seisser, M. A. (2003). "Patient safety initiatives explored at Third Annual Medical Errors and Patient Safety Conference." *Journal for Healthcare Quality* 25(2): 47-8.**
- 301 Servais, C. (2003). "HIM professionals key to patient safety." *Journal of Ahima* 74(8): 63-6.**
- 302 Sfikas, P. M. (2001). "Protecting your patients. Federal case on discharged employee centers on concerns about patient safety." *Journal of the American Dental Association* 132(2): 227-9.**
- 303 Shapiro, M. J., P. Croskerry and S. Fisher (2002). "Profiles in patient safety: sidedness error." *Academic Emergency Medicine* 9(4): 326-9.**

Abstract This case describes a 45-year-old woman with significant respiratory distress secondary to a left-sided pleural effusion that mandated an urgent thoracentesis. An adverse event occurred when the physician performed the procedure on the incorrect side of the patient. Results of the incident investigation followed by a discussion of medical errors models, common errors types, human factors considerations, and conditions that contribute to error are presented. Pertinent case-specific and general concepts of a system approach to reduce this type of medical error are discussed, and educational recommendations are offered.

- 304 Sherman, L. A. (2002). "Impact of nucleic acid testing for human immunodeficiency virus and hepatitis C virus on blood product availability, outdating, and patient safety: results of the 2001 AABB/CAP Viral Marker C Survey." *Archives of Pathology & Laboratory Medicine* 126(12): 1463-6.**

Abstract CONTEXT: Limited data are available about the impact of nucleic acid testing for human immunodeficiency virus and hepatitis C virus in donated blood as part of a nationwide investigational study that affected greater than 90% of the blood supply. OBJECTIVE: To assess the impact of nucleic acid testing on supply, outdating, and patient safety. DESIGN: Participants in the College of American Pathologists 2001 American Association of Blood Banks/College of American Pathologists Viral Marker C survey were asked questions about supply, outdating, and implementation of a full quarantine of blood pending nucleic acid testing results. The number of respondents for each question ranged from 197 to 219 for blood centers and from 462 to 504 for hospitals. RESULTS: Shortages were more common for platelets (29% and 23% of blood centers and hospitals, respectively) than for

red blood cells (13%, 11%). Similarly, outdating of platelets (13%, 11%) was more common than outdating of red blood cells; outdating of red blood cells was negligible for both blood centers and hospitals. Forty-two percent of blood centers did not meet the mid 2000 target date for quarantining red blood cells, and 18% were not quarantining as of September 2001. The hospital figures were 66% not quarantining in mid 2000 and 39% not quarantining as of September 2001. Higher proportions of centers and hospitals were not quarantining platelets at these 2 dates. **CONCLUSIONS:** Unfavorable trends in both blood shortages and outdating were attributed to nucleic acid testing. Greater effects may have been masked by delayed implementation of full quarantine nationwide. This delay meant continued patient risk, and lack of full benefit, in a trial that was in effect a national standard. In the future, added systems will be needed for similar new endeavors to ensure uniformity of care and to avoid shortages.

305 Sherwood, G., E. Thomas, D. S. Bennett and P. Lewis (2002). "A teamwork model to promote patient safety in critical care." *Critical Care Nursing Clinics of North America* 14(4): 333-40.

Abstract To create a safe health care system, providers must understand teamwork as a complementary relationship of interdependence. Continuing efforts to adopt the aviation model will enable health care providers to examine the role of human performance factors related to fatigue, leadership, and communication among all providers. The aviation model provides a basis for designing teamwork programs to reduce error and introduces human factor principles and key skills to be learned. Health care providers need explicit instruction in communication and teamwork rather than learning by trial and error, which can instill unintended values, attitudes, and behaviors. The growing research base continues to examine the problem of health care safety and to test the most effective team training approaches. What is the most effective pattern and timing of communication among providers? What system level changes are needed in the critical care area to improve communication through teamwork and thus create a safer health care system? What are potential points of error in the daily operation that could be alleviated through effective teamwork? Continuing to test the model will ultimately change patient safety.

306 Shojania, K. G., B. W. Duncan, K. M. McDonald and R. M. Wachter (2002). "Controversies. Safe but sound: patient safety meets evidence-based medicine." *JAMA*. 288(4): 508-13.

307 Shojania, K. G., H. Wald and R. Gross (2002). "Understanding medical error and improving patient safety in the inpatient setting." *Medical Clinics of North America* 86(4): 847-67.

Abstract Improving patient safety incorporates two complementary approaches. The first, inspired by research in cognitive psychology and the lessons of accident investigation in other industries, provides qualitative methods for anticipating errors, documenting critical incidents, and responding to them in a blame-free and structured manner. Using such qualitative methods, physicians can generate meaningful strategies for preventing similar occurrences in the future. Hospital-based physicians have an important role to play in promoting a culture of safety by championing incident-reporting initiatives and participating in multidisciplinary teams that analyze adverse events and promote change. The second approach involves applying the results of quantitative clinical research to reduce some of the common hazards of hospitalization. Hospitalists also have an important role to play in this arena because many of these safety targets and the associated clinical practices (e.g., early enteral nutritional support and fall prevention) are not on the radar screens of many hospital-based specialists. In both circumstances, physician participation in collaboration with nurses, pharmacists, nutritionists, and other health care professionals would likely produce important improvements in patient care. More important, physician involvement in these initiatives will undoubtedly contribute visible leadership in promoting a culture of patient safety in hospitals and in health care. [References: 60]

- 308 Shulkin, D. (2003). "Using a market model to track advances in patient safety." *Joint Commission Journal on Quality & Safety* 29(3): 146-51.**

Abstract The author proposes a four-stage model that may help hospitals and other health care providers recognize and anticipate market drivers of patient safety.

- 309 Shuren, A. W. (2001). "Health care delivery errors: patient safety falls prey to politics." *Journal of Pediatric Health Care* 15(1): 42-4.**

- 310 Sibbald, B. (1997). "Delegating away patient safety." *Canadian Nurse* 93(2): 22-6.**

- 311 Silver, M. R. and R. Lusk (2002). "Patient safety: a tale of two systems." *Quality Management in Health Care* 10(2): 12-22.**

Abstract Patient safety remains a major issue for health care delivery systems and the American public. One community hospital has kept pace with this issue using traditional quality management approaches. A national multihospital health care system has leveraged its electronic medical record system to facilitate data collection and analysis of events impacting patient safety. The article describes both approaches for addressing the complex issues surrounding patient safety.

- 312 Simpson, K. R. and G. E. Knox (2003). "Common areas of litigation related to care during labor and birth: recommendations to promote patient safety and decrease risk exposure." *Journal of Perinatal & Neonatal Nursing* 17(2): 110-25; quiz 126-7.**

Abstract Reducing the risk of liability exposure and avoiding preventable injuries to mothers and infants during labor and birth can be relatively easy when all members of the perinatal care team (nurses, nurse-midwives, and physicians) agree to follow two basic tenets of clinical practice: use applicable evidence and/or published standards and guidelines as the foundation for care and whenever a clinical choice is presented, choose patient safety rather than production. Adhering to these two principles could theoretically eliminate the need for extensive and overly detailed policy and procedure manuals. Most clinicians feel the need to have some written guidelines for practice. A summary of the most common foci of professional perinatal liability claims together with the most current applicable evidence and published standards and guidelines from professional associations and regulatory agencies is provided. The purpose is to provide a framework for reviewing existing institutional protocols and/or developing future policies and guidelines that decrease professional liability exposure and minimize the risk of iatrogenic injury to mothers and infants.

- 313 Simpson, R. L. (2001). "Information technology. Improve patient safety by leap(frog)s and bounds." *Nursing Management*. 32(9): 17-8.**

Abstract The Leapfrog Group recommends that payers, providers, and vendors collaborate to develop patient safety solutions.

- 314 Slonim, A. D. and F. P. Ognibene (2001). "Enhancing patient safety for pediatric bronchoscopy: alternatives to conscious sedation." *Chest* 120(2): 341-2.**

- 315 Small, S. D. and P. Barach (2002). "Patient safety and health policy: a history and review." *Hematology - Oncology Clinics of North America* 16(6): 1463-82.**

Abstract Policy initiatives on many fronts have converged to improve patient safety. A major tension that characterizes this process is the attempt to achieve a balance between learning and control in complex systems with technical, social, and organizational components. Efforts to improve learning are marked by better information flow, discovery, flexibility in thinking, embracing of failures as learning opportunities, and core incentives to promote voluntary participation of all stakeholders in the process. Efforts to improve accountability are traditionally marked by public disclosure, meeting of certain widely disseminated standards, availability of performance measures, exposure to legal liability, and compliance with mandated

directives (statutes, regulations, accreditation requirements). In some sense, these directions are mutually exclusive. Although a more collaborative regulatory-improvement model would be helpful in creating an industrywide safety culture, it is likely that learning and accountability functions will follow separate tracks. An exception would be policy that stimulates organizations to comply with regulation by showing how well and by what methods they are learning and how others can profit from these experiences. Any approach to improving patient safety should, at a minimum, include a nonpunitive in-depth mechanism for reporting incidents, postincident evaluations for identification of system changes to prevent subsequent occurrences, and state-guaranteed legislative protection from discovery for all aspects of information gathered to improve patient safety. Nonpunitive approaches have yielded useful results in other industries [43]. State and federal courts, state licensing boards, and accrediting bodies such as JCAHO all function to maintain accountability and standards; however, the very fear of existing legal liability or its misapplication are the greatest hurdles to pioneering patient-safety efforts. The health care system needs to transform the existing culture of blame and punishment that suppresses information about errors and adverse events into a culture of safety that focuses on openness and information sharing to improve health care and prevent adverse outcomes. Education and leadership will be most important to creating and sustaining a strong safety culture and arguably the most important defense against preventable harms. Safety culture cannot be legislated, just as the old adage states that it is easier to pull rather than push a piece of spaghetti. Given the imbalances and inefficiencies of market forces in health care, perverse incentives that have strengthened resistance to change, and secrecy when it comes to adverse event information, however, it is likely that policy initiatives will continue to play an important role in the transformation of the industry to more highly reliable, safer levels of care. [References: 43]

316 Smallwood, R. (2002). "Patient safety: how are we doing in Australia and England?" *Hospital Medicine (London)* 63(8): 452-3.

317 Smith, A. F., M. Mort, D. Goodwin and C. Pope (2003). "Making monitoring 'work': human-machine interaction and patient safety in anaesthesia." *Anaesthesia* 58(11): 1070-8.

Abstract This study aimed to explore the use of electronic monitoring within the context of anaesthetic practice. We conducted workplace observation of, and interviews with, anaesthetists and other anaesthetic staff in two UK hospitals. Transcripts were analysed inductively for recurrent themes. Whilst formal sources of knowledge in anaesthesia deal with the issue of monitoring in terms of theoretical principles and performance specifications of devices, anaesthetists in practice often 'disbelieve' monitoring information. They call on and integrate other sources of knowledge about the patient, especially from their clinical assessment. The ability to distinguish 'normal' and 'abnormal'

findings is vital. Confidence in electronic information varies with experience, as does the degree to which electronic information may be considered 'redundant'. We conclude that electronic monitoring brings new dimensions of understanding but also the potential for new ways of misunderstanding. The tacit knowledge underlying the safe use of monitoring deserves greater acknowledgement in training and practice.

- 318 Sokol, P. and D. S. Cummins (2002). "Patient safety. A needs assessment for patient safety education: focusing on the nursing perspective." *Nursing Economics*. 20(5): 245-8.**

Abstract A focus group, composed of professional nurses, addressed issues related to reducing health care errors., Issues included the system and culture of tolerance, barriers to reporting and resolving error, breaking down the barriers, education and training., A Web-based patient safety education module for nurses will be created to raise competencies related to these and other issues.

- 319 Spath, P. (1999). "Involve governing board in patient safety effort." *Hospital Peer Review* 24(7): 112-6.**

- 320 Spath, P. (2000). "Developing an effective patient safety policy." *Hospital Peer Review* 25(8): 108-11.**

- 321 Spath, P. (2001). "Put patient safety process changes to the test." *Hospital Peer Review* 26(12): 173-6, 161.**

- 322 Spath, P. (2001). "It's time for a revolution in patient safety culture." *Hospital Peer Review* 26(6): 85-6, 74.**

Abstract When implementing patient safety improvement initiatives, winning the hearts as well as the minds of people in your facility is important. Unless you convince people of the importance of the improvement endeavor, they will simply give it lip service.

- 323 Spath, P. (2002). "Develop a patient safety management system. Part 3." *Hospital Peer Review* 27(11): 158-9, suppl 1-2.**

- 324 Spath, P. (2002). "Develop a patient safety management system." *Hospital Peer Review* 27(9): 128-30.**

- 325 Spath, P. (2002). "Patient safety: just old wine in a new bottle?" *Hospital Peer Review* 27(2): 25-8.**

- 326 Spath, P. (2003). "Don't impairments jeopardize patient safety." *Hospital Peer Review* 28(8): 113-5.**

327 Spath, P. L. (2002). "Target: patient safety." *Journal of Ahima* 73(3): 26-33; quiz 35-6.

328 Spath, P. L. (2003). "Using failure mode and effects analysis to improve patient safety." *AORN Journal* 78(1): 16-37; quiz 41-4.

Abstract Failure mode and effects analysis (FMEA) (ie, prospective risk analysis) involves close examination of high-risk processes to identify needed improvements that will reduce the chance of unintended adverse events. This risk assessment process is used in other industries (ie, manufacturing, aviation) to evaluate system safety. Health care organizations now are using it to evaluate and improve the safety of patient care activities. The FMEA process promotes systematic thinking about the safety of patient care processes (ie, what could go wrong, what needs to be done to prevent failures.) The steps of the FMEA process are described and applied to a high-risk perioperative process. [References: 19]

329 Sprenger, G. (2001). "Sharing responsibility for patient safety." *American Journal of Health-System Pharmacy* 58(11): 988-9.

330 Stafrace, J. G. (1998). "Assessment: the key to patient safety when undergoing an endoscopic procedure." *Gastroenterology Nursing* 21(3): 131-4.

331 Stalhandske, E., J. P. Bagian and J. Gosbee (2002). "Department of Veterans Affairs patient safety program." *American Journal of Infection Control* 30(5): 296-302.

Abstract The Department of Veterans Affairs (VA) has been recognized for its patient safety initiatives. In 1998, a separate entity entitled the National Center for Patient Safety (NCPS) was established to promulgate and nurture the patient safety activities throughout the health care facilities of the VA. On the basis of a nonpunitive approach, NCPS fosters a culture of safety whereby clinicians report unsafe situations and close calls without fear of reprisals. The VA patient safety program stresses that reducing iatrogenic injury is best served through an examination of system and process vulnerabilities, with a focus on why something occurred rather than who is at fault. This article discusses the genesis of the VA patient safety program and reviews some of its successes.

332 Steinbrook, R. (2003). "Trial design and patient safety--the debate continues." *New England Journal of Medicine* 349(7): 629-30.

333 Sternberg, D. (2002). "New approaches to improving patient safety." *Internet Healthcare Strategies* 4(5): 1-4.

- 334 Stetler, C. B., D. Morsi and M. Burns (2000). "Physical and emotional patient safety. A different look at nursing-sensitive outcomes." *Outcomes Management for Nursing Practice* 4(4): 159-65; quiz 165-6.**

Abstract Data on nursing-sensitive outcomes, beyond traditional isolated indicators such as pressure ulcers, are often unavailable for nurses to evaluate the overall quality of their care. This article describes a quality improvement effort to provide nurses with both a positive and a negative patient outcomes score. The approach can make visible the often invisible role of nurses in the growing field of patient safety. [References: 27]

- 335 Stone, P. W. and A. E. Tourangeau (2003). "Ask an expert. Measuring nursing services in patient safety research." *Applied Nursing Research*. 16(2): 131-2.**

- 336 Stymiest, D. L. (2003). "Joining forces. Integrating utility and emergency management for better patient safety." *Health Facilities Management* 16(4): 26-9.**

- 337 Sutton, J. H. (2001). "Office-based surgery regulation: improving patient safety and quality care." *Bulletin of the American College of Surgeons* 86(2): 8-12.**

- 338 Tang, P. C. (2000). "The HIPAAcratic oath: do no harm to patient data." *Physician Executive* 26(3): 50-5.**

Abstract Physician executives need to prepare their organizations for the next great system-wide challenge--HIPAA, the Health Insurance Portability and Accountability Act of 1996. Organizations will have to plan for and execute a compliance program with the same vigor and system-wide participation as they did for Y2K. This article provides a brief overview of HIPAA, emphasizing the privacy and security components that will be the biggest challenge for physician executives. Physician leaders must become actively involved in the policymaking process to ensure a balanced approach to protecting the confidentiality of health information, while giving providers optimal access to data to make informed decisions on patient care and management. Ignoring HIPAA is simply not an option.

- 339 Teichman, P. G. and A. E. Caffee (2002). "Prescription writing to maximize patient safety." *Family Practice Management* 9(7): 27-30.**

- 340 Tessier, C. (2003). "The essentials of healthcare documentation: patient safety and the quality of care can be improved with accurate, accessible, shareable health information." *Healthcare Informatics*. 20(2): 87-8.**

- 341 Thomas, E. J., G. D. Sherwood and R. L. Helmreich (2003). "Lessons from aviation: teamwork to improve patient safety." *Nursing Economics* 21(5): 241-3.**
- 342 Thompson, K. K. and D. J. Scheckelhoff (2002). "Unit dose packaging and patient safety." *American Journal of Health-System Pharmacy* 59(23): 2309.**
- 343 Thompson, P. A. (2000). "Patient safety: pieces of a puzzle." *Journal of Nursing Administration* 30(11): 508-9.**
- 344 Thompson, P. A. (2000). "AONE leadership perspectives. Patient safety: pieces of a puzzle." *Journal of Nursing Administration*. 30(11): 508-9.**
- 345 Traska, M. R. (2001). "Drug samples: tightening controls to support patient safety initiatives... part 1 of 2." *Professional Medical Assistant*. 34(3): 16-20.**
- 346 Tribble, D. A. (2002). "Bar coding a must for patient safety." *American Journal of Health-System Pharmacy* 59(7): 667; discussion 667-8.**
- 347 Tsilimingras, D., A. K. Rosen and D. R. Berlowitz (2003). "Patient safety in geriatrics: a call for action." *Journals of Gerontology Series A-Biological Sciences & Medical Sciences* 58(9): M813-9.**

Abstract Patient safety has become a major public health concern following the publication of the landmark report, *To Err Is Human*, by the Institute of Medicine in 1999. This report, along with a subsequent report, *Crossing the Quality Chasm*, recommended the design of a safer health care system by integrating well-established safety methods to avert medical errors. However, neither patient safety report specifically addressed the implications of safety for elderly patients. This article examines those implications by describing the association between aging and medical errors, identifying geriatric syndromes as medical errors, and focusing on six recommendations that will improve the safety of geriatric care. These six recommendations include the detection and reporting of geriatric syndromes, identifying system failures when geriatric syndromes occur, establishing dedicated geriatric units, improving the continuity of care, reducing adverse drug events, and improving geriatric training programs.

- 348 Turnball, J. E. (2001). "All components of the system must be aligned." *Healthcare Papers* 2(1): 38-43, discussion 86-9.**

Abstract A culture of safety in healthcare will not be achieved until the fragmentation that currently characterizes the delivery system is replaced by an alignment of the many component parts, including providers, patients and their families and front-line workers on the "sharp end"--physicians, nurses and pharmacists. A systemic approach should be introduced that would recognize the interacting nature of the delivery system's component parts, and that a change in one component of the system will provoke a change in another part. Consumers and their families can be empowered through programs that raise awareness, prevent error and mitigate its effect when error does happen. Within the system, the "safety sciences" can provide guides to effective work processes. Finally, it is critical to capture knowledge of what type of error occurs in what place and to elucidate strategies to prevent the error.

349 Turnbull, J. E. and J. Mortimer (2002). "Focus on quality. The business case for patient safety... reprinted with permission from *Lessons in Patient Safety*, Zipperer L, Cushman S, eds (Chicago: National Patient Safety Foundation, 2001) 21-25." *Surgical Services Management*. 8(6): 65-7.

350 U, D. (2001). "Medication error and patient safety." *Healthcarepapers* 2(1): 71-6, discussion 86-9.

Abstract A number of barriers to the enhancement of patient safety through a reduction of medication errors have been identified. These include a blame culture; lack of leadership; lack of peer-review protection; and the absence of a collaborative voluntary national reporting system. The latter would provide oversight and help healthcare providers avoid recurrence of these adverse drug events stemming from human error. A voluntary practitioners reporting system similar to that promoted by the Institute for Safe Medication Practices Canada (ISMP Canada) has been shown to be successful in the United States in achieving the goal of enhancing patient safety. ISMP Canada needs collaboration with other reporting systems to gain more insight and knowledge of the causal factors underlying medication errors. This collaborative mode fits into the conceptual model of the medication incident reporting and prevention program currently being developed by a coalition of key stakeholders including Health Canada, ISMP Canada and the other health care professional organizations. The model for a successful patient safety enhancement strategy as proposed by Baker and Norton in their lead paper is a valid one. In the meantime, there is enough knowledge and information about medication errors to permit our putting prevention strategies into practice.

351 Uhlig, P. N., J. Brown, A. K. Nason, A. Camelio and E. Kendall (2002). "John M. Eisenberg Patient Safety Awards. System innovation: Concord

Hospital." Joint Commission Journal on Quality Improvement 28(12): 666-72.

Abstract BACKGROUND: The Cardiac Surgery Program at Concord Hospital (Concord, NH) restructured clinical teamwork for improved safety and effectiveness on the basis of theory and practice from human factors science, aviation safety, and high-reliability organization theory. A team-based, collaborative rounds process--the Concord Collaborative Care Model--that involved use of a structured communications protocol was conducted daily at each patient's bedside. METHODS: The entire care team agreed to meet at the same time each day (8:45 AM to 9:30 AM) to share information and develop a plan of care for each patient, with patient and family members as active participants. The cardiac surgery team developed a structured communications protocol adapted from human factors science. To provide a forum for discussion of team goals and progress and to address system-level concerns, a biweekly system rounds process was established. RESULTS: Following implementation of collaborative rounds, mortality of Concord Hospital's cardiac surgery patients declined significantly from expected rates. Satisfaction rates of open heart patients scores were consistently in the 97th-99th percentile nationally. A quality of work life survey indicated that in every category, providers expressed greater satisfaction with the collaborative care process than with the traditional rounds process. Practice patterns in the Cardiac Surgery Program at Concord Hospital have changed to a much more collaborative and participatory process, with improved outcomes, happier patients, and more satisfied practitioners. A culture of continuous program improvement has been implemented that continues to evolve and produce benefits.

352 Ulmer, B. C. (1996). "Patient safety during electrosurgical minimally invasive procedures." Minimally Invasive Surgical Nursing 10(2): 63-6.

353 Valentine, J. A. and R. Behara (2001). "A sociotechnical approach to patient safety: quality improvement in hospital laboratories." Hospital Topics 79(2): 21-6.

354 Valusek, J. R. (2002). "Decision support: a paradigm addition for patient safety." Journal of Healthcare Information Management 16(1): 34-9.

Abstract The creation of a decision culture that matches the "decision intensity" of the healthcare field is not a paradigm shift but rather a paradigm addition that properly addresses all aspects of information, from how it is delivered to how it is managed. These changes will take healthcare beyond its current emphasis on efficient transaction systems to reach safe and effective clinical decision environments, which cannot be achieved with transaction mentalities and processes.

355 Vass, A. (2002). "Patient safety agency admits problems with its pilot scheme." BMJ 324(7352): 1473.

356 Verheecke, G. and D. Himpe (2001). "Safety first--five years later. Belgian standards for patient safety in anaesthesia revisited." Acta Anaesthesiologica Belgica 52(1): 5-12.

Abstract Belgian Standards for Patient Safety in Anaesthesia, established in 1989 by a joint effort of the Belgian Professional Association of Anesthesiologists and the Belgian Scientific Society of Anaesthesia and Resuscitation, were intended to be fully implemented within hospital practice by January 1st, 1995. In order to gather follow-up data with regard to this deadline, the Professional Association of Anesthesiologists conducted a survey in 1995: a questionnaire was circulated to all Belgian anaesthetists in order to evaluate the extent to which these guidelines had been implemented in clinical practice and to determine the areas in which residual noncompliance remained. 71% of responders complied with the safety guidelines as far as monitoring in the operating room was concerned. Nursing help was available to 95% of the responders. Concerning the requirement for continuous attendance during anaesthesia by a doctor anaesthetist, some questions remain: although the principle was accepted by 53% of responders, the practical consequences are such that flexibility in working conditions is hampered by the obligation to stay at the side of the anaesthetised patient, under all circumstances. The survey reveals that 65% of responders do not totally comply with this guideline of continuous attendance by a doctor. Many of them propose professional assistance by nursing staff with a specific education and training in anaesthesia.

357 Vicente, K. (2003). "New technology to boost patient safety: fatal and costly errors can be reduced by simplifying the design of health-care systems with the human factor in mind." Registered Nurse Journal. 15(1): 20-22.

358 Vicente, K. J. (2002). "From patients to politicians: a cognitive engineering view of patient safety." Quality & Safety in Health Care 11(4): 302-4.

359 Vicente, K. J. (2003). "What does it take? A case study of radical change toward patient safety." Joint Commission Journal on Quality & Safety 29(11): 598-609.

Abstract BACKGROUND: Adopting a human factors engineering approach to patient safety requires a radical behavioral shift from "blame and shame," which emphasizes further training, to systems thinking, which also emphasizes improved system design. A medical device manufacturer appeared to initiate this radical shift after exhibiting the traditional approach

for years. **METHODOLOGY:** The research focused on a patient-controlled analgesia device. A qualitative case study methodology was used to study events in the period from the device's introduction (1988) until the start of the behavioral change (May 2001). Data on 50 relevant events were analyzed. The tabular summary was analyzed for evidence of the prerequisites predicted by punctuated equilibrium theory, and the graphical time line was analyzed for evidence of vertical alignment across levels. **RESULTS:** Radical behavioral change was preceded by a critical 9.5-month period with three characteristics: new corporate leadership, perceived poor corporate performance, and aligned disruptions occurring within a relatively short time at almost every level in the external environment in which the company operated. **DISCUSSION:** These findings are consistent with punctuated equilibrium theory, according to which organizations can experience long periods of resistance to change followed by fast revolutionary change (approximately two years). The findings also have implications for when and how to introduce patient safety policy interventions to "tilt the playing field" and thereby increase the likelihood that such reforms will succeed.

- 360 Vincent, C. and E. Knox (1997). "Clinical risk modification, quality, and patient safety: interrelationships, problems, and future potential." *Best Practices & Benchmarking in Healthcare: a Practical Journal for Clinical & Management Applications* 2(6): 221-6.**

Abstract Iatrogenic injury, in which patients are unintentionally injured by medical treatment, occurs in 4% of hospital admissions and causes considerable human suffering, financial losses, and waste of healthcare resources. This article discusses why existing quality initiatives have had little impact on iatrogenic injury and suggests an approach to clinical risk modification that may enhance the safety of medical treatment.

- 361 Vincent, C. A. and A. Coulter (2002). "Patient safety: what about the patient?" *Quality & Safety in Health Care* 11(1): 76-80.**

Abstract Plans for improving safety in medical care often ignore the patient's perspective. The active role of patients in their care should be recognised and encouraged. Patients have a key role to play in helping to reach an accurate diagnosis, in deciding about appropriate treatment, in choosing an experienced and safe provider, in ensuring that treatment is appropriately administered, monitored and adhered to, and in identifying adverse events and taking appropriate action. They may experience considerable psychological trauma both as a result of an adverse outcome and through the way the incident is managed. If a medical injury occurs it is important to listen to the patient and/or the family, acknowledge the damage, give an honest and open explanation and an apology, ask about emotional trauma and anxieties about future treatment, and provide practical and financial help quickly.

- 362 Wachter, R. M., K. G. Shojania, S. Saint, A. J. Markowitz and M. Smith (2002). "Learning from our mistakes: quality grand rounds, a new case-based series on medical errors and patient safety." *Annals of Internal Medicine* 136(11): 850-2.**
- 363 Wade, J. G. (2003). "Patient safety in anesthesia--continuing challenges and opportunities." *Canadian Journal of Anaesthesia* 50(4): 319-22.**
- 364 Wade, R., L. Diamond, G. Mecklenburg, M. Fitzpatrick, T. Royer, J. Foy, C. Fox, C. Welch, R. Spoltore, M. R. Rocklage, J. King, K. Fickenscher and B. Sadler (2001). "CEO/supplier dialogue on patient safety: leaders and vendors candidly explore new opportunities for industry standards, work-force training, and patient-focused care." *Health Forum Journal*. 44(6): 45-55.**
- 365 Wagner, D. (2002). "Patient safety first. How to use medical devices safely." *AORN Journal*. 76(6): 1059-61.**
- 366 Wagner, V. D. (2003). "Impact of perioperative temperature management on patient safety." *Surgical Services Management*. 9(4): 38-43.**
- 367 Wahls, T. L., K. Chatterjee, H. Ting and T. J. Clancy (2002). "Quality, patient safety, and medical errors: resistance to and support for the federal recommendations to address these concerns." *Journal of Ambulatory Care Management*. 25(1): 54-62.**

Abstract The Institute of Medicine's report *To Err Is Human* was a catalyst for concern regarding quality, patient safety, and medical errors. The most effective actions will occur in the federal health care system. Revision of research agendas, accreditation, and education standards will also be successful. Regulatory changes and legislative initiatives will come about more slowly. The application of information technology will be slowed by costs and lack of infrastructure and of standards. Reporting systems will be resisted. Changes will continue incrementally until the cost of enabling information technology falls and medical groups compete on the basis of quality. Copyright (C) 2001 by Aspen Publishers, Inc.

- 368 Wakefield, M. (2002). "Patient safety and medical errors. Implications for rural health care." *Journal of Legal Medicine* 23(1): 43-56.**
- 369 Walsh-Sukys, M., A. Reitenbach, D. Hudson-Barr and P. DePompei (2001). "Reducing light and sound in the neonatal intensive care unit: an evaluation of patient safety, staff satisfaction and costs." *Journal of Perinatology*. 21(4): 230-5.**

Abstract OBJECTIVES: To modify an existing Level III neonatal intensive care unit and to compare light and sound levels in the renovated nursery with an adjacent traditionally configured nursery. Further, to assess the impact of this practice on patient safety, staff perceptions of the nursery environments, and to document costs of renovation. STUDY DESIGN: Prospective comparison of light and sound levels in identical six-bed patient rooms within an existing intensive care unit. One room was modified to reduce light and sound, and the other served as a control. Costs of renovation were documented. Patient characteristics, severity of illness and safety outcomes were documented following modifications. Physician and nursing staff were surveyed on their perceptions of the renovations. RESULTS: Both light and sound were reduced with modifications that incurred modest costs. Patient safety was not influenced adversely by reduced light or sound levels. Staff members were highly satisfied with reductions in sound levels. Reactions to reduced lighting levels were more mixed and led to modification of bedside lighting. CONCLUSIONS: Cost-effective renovations to an existing NICU are possible, desirable, and do not impact patient safety. The reductions achieved, however, are less than those reached with new construction.

- 370 Weeks, W. B. and J. P. Bagian (2003). "Making the business case for patient safety." *Joint Commission Journal on Quality & Safety* 29(1): 51-4, 1.**

Abstract The authors explain why there appears to be a business case for health care organizations to make investments to enhance patient safety.

- 371 Weinberg, J. K. (2002). "Medical error and patient safety: understanding cultures in conflict." *Law and Policy* 24(2): 93-114.**

Abstract Evidence documenting the high rate of medical errors to patients has taken a prominent place on the health care radar screen. The injuries and deaths associated with medical errors represent a major public health problem with significant economic costs and erosion of trust in the health care system. Between 44,000 and 98,000 deaths due to preventable medical errors are estimated to occur each year, making medical errors the eighth leading cause of death in the United States. However, the recent prominence of the issue of safety or error does not reflect a new phenomenon or sudden rift in the quality of health care (although it is a system fraying at the edges). Rather, the prominence of the issue reflects a radical change in the culture of health care, and in how relationships within the health care system are structured and perceived. In this paper, I discuss the multiple factors responsible for the change in the culture of health care. First, the culture has shifted from a clinician cantered system, in which decision making is one-sided, to a shared system of negotiated care between clinician and patient, and, often, between administrator or payer. Second, the nature of quality in health care has changed due to the geometric increase in the availability of

technological and pharmaceutical enhancements to patient care. Third, the health care culture continues to rely on outdated models of conflict resolution. Finally, the regulatory structure of health system oversight was set in place when fee-for-service care governed physician-patient relationships and where few external technologies were available. In the current health care culture, that structure seems inadequate and diffuse, with multiple and overlapping federal and state regulatory structures that make implementation of patient safety systems difficult

372 Weinger, M. B. and J. Slagle (2001). "Human factors research in anesthesia patient safety." Proceedings / AMIA: 756-60.

Abstract Patient safety has become a major public concern. Human factors research in other high-risk fields has demonstrated how rigorous study of factors that affect job performance can lead to improved outcome and reduced errors after evidence-based redesign of tasks or systems. These techniques have increasingly been applied to the anesthesia work environment. This paper describes data obtained recently using task analysis and workload assessment during actual patient care and the use of cognitive task analysis to study clinical decision making. A novel concept of "non-routine events" is introduced and pilot data are presented. The results support the assertion that human factors research can make important contributions to patient safety. Information technologies play a key role in these efforts.

373 West, D. S., W. E. Golden and N. Sanchez (2001). "Enhancing patient safety preoperative antibiotic prophylaxis." Journal of the Arkansas Medical Society 97(12): 418-9.

374 White, G. B. (2002). "Patient safety. Patient safety: an ethical imperative." Nursing Economics. 20(4): 195-7.

Abstract Patient safety should be a consistent attribute in the delivery of health care. XXABXX The publication of the newly revised Code of Ethics for Nurses With Interpretive Statements, addresses patient safety in several important contexts. XXABXX The delivery of safe health care rests in a primary way on the actions of health care professionals and interpersonal processes.

375 White, J. P. and S. D. Ketring (2001). "True patient safety begins at the top. Leaders at one large health system rally around safety, avoid blame game." Physician Executive 27(5): 40-5.

Abstract Making patient safety the No. 1 priority at a hospital or clinic sounds like a easy task. It isn't. At one Oklahoma health system, an improved patient safety program is a massive effort requiring input and participation from every member of the staff. Figuring out how to convince employees that patient

safety is their first priority means developing an extensive communication and education program.

376 White, S. V. (2002). "Effective Practices Improve Patient Safety Summit 2001." *Journal for Healthcare Quality* 24(1): 34-6.

377 Williams, L. and L. Zipperer (2003). "Patient safety. Improving access to information: librarians and nurses team up for patient safety." *Nursing Economics*. 21(4): 199-201.

Abstract Access to information plays a key role in providing safe patient care., Opportunities for nurses to improve access to literature exist through working with a medical librarian., Nurse executives, nurse administrators, and frontline nursing personnel can ensure better access to information by seeking out the hospital librarian to strategize about patient safety improvements.

378 Wilson, F., T. Gentile, E. Joseph and A. R. Tersigini (2003). "St. John Health System and patient safety." *Quality Management in Health Care* 12(1): 46-52.

Abstract The first Institute of Medicine (IOM) report refocused the whole health profession on patient safety. The goals described in this article were the result of the St. John Health System doing the same. We believe that a comprehensive approach rather than just focusing on adverse drug events was important. This refocusing has been for the most part uniform and identical throughout the system. This article describes how, based on the literature supporting the first IOM report, St. John Health System developed a comprehensive approach to improving patient safety and how that was implemented in our 8 hospital system with independent medical staffs.

379 Wilson, N. J. and M. J. Hatlie (2001). "Advancing patient safety: a framework for accountability and practical action." *Journal for Healthcare Quality*. 23(1): 30-4.

380 Wilson, T., M. Pringle and A. Sheikh (2001). "Promoting patient safety in primary care: research, action, and leadership are required." *British Medical Journal*. 323(7313): 583-4.

381 Wilson, T., F. Smith and M. Lakhani (2002). "Patient safety in primary healthcare -- an overview of current developments in risk management and implications for clinical governance." *Journal of Clinical Governance*. 10(1): 25-30.

382 Winokur, S. C. (2002). "Patient safety leadership fellowship." *Michigan Health & Hospitals* 38(6): 40.

- 383 Wolf, E. J. (2003). "Promoting patient safety through facility design." Healthcare Executive 18(4): 16-20.**
- 384 Wolfe, J. J. and D. S. West (2001). "Patient safety: medication errors can be prevented." Journal of the Arkansas Medical Society 98(5): 148-9.**
- 385 Wolfe, J. J., D. S. West and E. B. Dunn (2001). "Medication errors can be prevented: patient safety: is penmanship a safety issue?" Arkansas Nursing News. 18(4): 27-9.**
- 386 Wong, P., D. Helsinger and J. Petry (2002). "Providing the right infrastructure to lead the culture change for patient safety." Joint Commission Journal on Quality Improvement 28(7): 363-72.**

Abstract **BACKGROUND:** In early 2000 the hospital leadership of Good Samaritan Hospital (GSH), a community teaching hospital in Dayton, Ohio, made patient safety a strategic priority and devoted resources to incorporate safety as a part of the hospital's culture and care processes. The vice president of clinical effectiveness and performance improvement, as a champion for safety, led a consensus-building effort to enlist the support of key physician and hospital leaders to a safety program. GSH added a Safety Board to its administrative infrastructure, which was to serve as an oversight body to ensure the advance of the safety program and to produce policies and procedures that are associated with safety. **ADDRESSING PATIENT SAFETY AIMS:** To assess GSH's progress toward achieving three aims--demonstrate patient safety as a top leadership priority, promote a nonpunitive culture for sharing information and lessons learned, and implement an integrated patient safety program throughout the organization--the Safety Board evaluates GSH's performance bimonthly, using a 5-point-scaled self-assessment tool. For example, for the third aim, the Safety Board oversaw the formation of three subcommittees, which were to test ideas and achieve improvements in three areas--medication, clinical, and environmental. **DISCUSSION:** The administrative structure provides the leadership and momentum necessary to fuel a cultural change in the way that patient safety issues are perceived and acted on throughout the organization. "To err" may be human, but so is the ability to increase patient safety awareness, to promote cultural change within existing systems, and to improve the patient care processes and outcomes.

- 387 Woolf, S. H. (2004). "Patient safety is not enough: targeting quality improvements to optimize the health of the population." Annals of Internal Medicine 140(1): 33-6.**

Abstract Ensuring patient safety is essential for better health care, but preoccupation with niches of medicine, such as patient safety, can inadvertently compromise outcomes if it distracts from other problems that

pose a greater threat to health. The greatest benefit for the population comes from a comprehensive view of population needs and making improvements in proportion with their potential effect on public health; anything less subjects an excess of people to morbidity and death. Patient safety, in context, is a subset of health problems affecting Americans. Safety is a subcategory of medical errors, which also includes mistakes in health promotion and chronic disease management that cost lives but do not affect "safety." These errors are a subset of lapses in quality, which result not only from errors but also from systemic problems, such as lack of access, inequity, and flawed system designs. Lapses in quality are a subset of deficient caring, which encompasses gaps in therapeutics, respect, and compassion that are undetected by normative quality indicators. These larger problems arguably cost hundreds of thousands more lives than do lapses in safety, and the system redesigns to correct them should receive proportionately greater emphasis. Ensuring such rational prioritization requires policy and medical leaders to eschew parochialism and take a global perspective in gauging health problems. The public's well-being requires policymakers to view the system as a whole and consider the potential effect on overall population health when prioritizing care improvements and system redesigns.

- 388 Yeager, A. L. (2002). "On Hippocrates. Either help or do not harm the patient." *BMJ* 325(7362): 496.**
- 389 Yoder, C. C. and C. Lockett (2001). "Error terror: improving patient safety through an error reduction system." *Surgical Services Management*. 7(2): 15-20.**
- 390 Young, D. (2001). "Federal report lists evidence-based patient safety practices. Pharmacist authors call for more research." *American Journal of Health-System Pharmacy* 58(17): 1580-1.**
- 391 Young, D. (2003). "Patient safety is primary job for Missouri pharmacist." *American Journal of Health-System Pharmacy* 60(9): 866-8.**
- 392 Youngberg, B. J. (2001). "Meeting the challenges of patient safety through the design of a new risk management process." *Journal of Healthcare Risk Management* 21(4): 5-11.**
- 393 Zablocki, E. (2003). "Patient safety on the Net: patient safety advocates share information, tools online." *Medicine on the Net*. 9(6): 1-7.**
- 394 Zalon, M. L. (2000). "ANA convention report: patient safety, human error and blame." *Pennsylvania Nurse*. 55(8): 10-1.**

- 395 Zipperer, L., J. Gluck and S. Anderson (2002). "Knowledge maps for patient safety." *Journal of Hospital Librarianship*. 2(4): 17-35.**

Abstract One of the basic tools of knowledge management, a knowledge map is an "index" to people and organizational resources. Librarians are ideally positioned to create resource maps of internal and external, explicit and tacit sources of knowledge. Using sentinel events as the topic for a model knowledge map, the authors explore the concept, history, organizational activities and recent developments in patient safety and reducing medical error. The hospital librarian's contribution to the "safety culture" of an institution includes compiling this tool that blends together both the practitioner and administrator knowledge of the elements that help institutions effectively manage and respond to adverse incidents. The sample Incident Knowledge Map is an adaptable resource list for any institution.

- 396 Zorab, J. S. (2002). "Patient safety is more important than efficiency." *BMJ* 324(7333): 365.**