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Improving Patient Safety by Examining Pathology Errors	849
Stephen S. Raab	

There has been little study of how pathology errors affect patient outcomes and how root cause analysis may be used to decrease the frequency of these errors. This article provides an overview of medical error, pathology error, pathology patient safety recording mechanisms, and the pathology error literature. It provides the rationale for a national pathology patient safety database and reports the early success of an Agency for Healthcare Research and Quality-funded multi-institutional database project.

Error-free Pathology: Applying Lean Production Methods to Anatomic Pathology	865
Jennifer L. Condel, David T. Sharbaugh, and Stephen S. Raab	

The idea of error-free pathology may seem unrealistic. However, the authors' anatomic pathology laboratory is currently using the tools and principles of lean production, adopted from the Toyota Production System, to improve patient safety and reduce pathology errors. Through the elimination of waste, the incorporation of frontline staff as root cause analysis problem solvers where the work is being performed, and leadership support, a one-by-one, continuous workflow can be designed to improve pathology work practice. The authors hope to use individual models to achieve high quality at a low cost with quick delivery.

Barriers to the Implementation of Patient Safety Initiatives

901

Dana Marie Grzybicki

Since release of the Institute of Medicine Report "To Err is Human: Building a Safer Health System" in 1999, a huge effort has been expended on error-related clinically applied research and on the implementation of new standards and practices related to quality improvement and patient safety. Nonetheless, measurable improvements in the quality of delivered care and reductions in medical errors have been variable and modest in most cases. Multiple barriers to the implementation of patient safety and error reduction initiatives have been identified in the literature. The greater part of this article is devoted to three fundamental barriers: physicians' intolerance for uncertainty, health professionals' fears, and an organizational structure and culture that are incongruent with increasing patient safety.

Pathology and Patient Safety: The Critical Role of Pathology Informatics in Error Reduction and Quality Initiatives

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Michael J. Becich, John R. Gilbertson, Dilipkumar Gupta, Ashokkumar Patel, Dana Grzybicki, and Stephen S. Raab

Understanding the role of pathology informatics in patient safety entails an introduction to terminology and projects that have represented efforts to date in this area. The authors provide a short alphabetized introduction to several "buzzwords" and terms related to tools and processes that are used by health care research experts and workers involved in patient safety initiatives. The authors also include short descriptions of key health care research and patient safety projects that are relevant to pathology. They aim to highlight the areas where pathology informatics in all of its flavors (production systems provided by vendors as well as research and development efforts) can play a role in promoting patient safety.

Crossing the Quality Chasm: A Requirement for Successful Cervical Cancer Prevention in Developing Countries

945

Eric J. Suba

Cervical cancer is the leading cause of cancer-related death among women in many developing countries. Papanicolaou (Pap) screening is feasible anywhere in the world where cervical screening is appropriate. Because past failures of cervical screening in developing countries are attributable to failures in programmatic quality rather than to technological limitations of the screening test, a shift in focus from technology to quality is mandatory. Obstacles to quality arise when improved quality, which improves the likelihood of beneficial outcomes among recipients of care, does not improve the likelihood of increased incomes among providers of care. This article elucidates the interactions between quality and its sociopolitical obstacles by following the money as well as the science involved in cervical screening activities.

Detecting and Preventing the Occurrence of Errors in the Practices of Laboratory Medicine and Anatomic Pathology: 15 Years' Experience with the College of American Pathologists' Q-PROBES and Q-TRACKS Programs

965

David A. Novis

Since 1989, the College of American Pathologists (CAP) Q-PROBES Program has conducted more than 100 outcome studies that have determined benchmarks of quality performance in the practices of laboratory medicine and anatomic pathology. Many of these studies have provided benchmarks for the frequency with which errors occur during all phases of laboratory testing and have determined practices by which laboratory personnel have been able to lower those frequencies. Protocols designed to reduce errors must include provisions not only to prevent them from occurring, but also to catch them when they do. Once error detection systems are established, service providers can gauge their success by monitoring the extent to which health care workers perform required procedures and services achieve their intended outcomes.

Identification Errors in Pathology and Laboratory Medicine

979

Paul N. Valenstein and Ronald L. Sirota

Identification errors involve misidentification of a patient or a specimen. Either has the potential to cause patients harm. Identification errors can occur during any part of the test cycle; however, most occur in the preanalytic phase. Patient identification errors in transfusion medicine occur in 0.05% of specimens; for general laboratory specimens the rate is much higher, around 1%. Anatomic pathology, which involves multiple specimen transfers and hand-offs, may have the highest identification error rate. Certain unavoidable cognitive failures lead to identification errors. Technology, ranging from bar-coded specimen labels to radio frequency identification tags, can be incorporated into protective systems that have the potential to detect and correct human error and reduce the frequency with which patients and specimens are misidentified.

Patient Safety in Point-of-Care Testing

997

Bruce A. Jones and Frederick A. Meier

Contradictions between regulatory definitions and clinical practice, uncertain test accuracy, inconsistent application of standards, and variable adherence to the standard model of laboratory practice suggest that patient safety is not assured when point-of-care test results guide medical decisions. Latent conditions conducive to medical errors have been demonstrated in point-of-care tests; however, an evidence base linking these conditions to adverse events is lacking. Gerald Kost's taxonomy of error raises research questions whose answers would supply such evidence. In the meantime, attention to operator training, program supervision, competence assessment, and proficiency testing, along with active monitoring of patient identification, specimen quality, and result integrity,

constitutes a seven-point approach to building a culture of patient safety in point-of-care testing.

The Laboratory is a Key Partner in Assuring Patient Safety 1023
Ana K. Stankovic

Medical errors cause significant morbidity and mortality in the United States, and, as part of the health care system, clinical laboratories are not immune to this problem. Currently most laboratory testing errors occur in the preanalytic phase of the testing process. Considerable efforts have been made by laboratory professionals and other stakeholders to decrease the incidence of testing errors. To improve the quality of laboratory testing, various regulatory and voluntary approaches have been implemented. The clinical laboratory has done more than most other sectors of health care to decrease medical errors, making the laboratory a key partner in patient safety.

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