Strategies to Improve Patient Safety: The Evidence Base Matures

In 2000, the Agency for Healthcare Research and Quality commissioned a report titled, “Making Health Care Safer: A Critical Analysis of Patient Safety Practices.” The report analyzed and rated nearly 80 patient safety strategies (PSSs) (1). It was heralded by many but also generated controversy about the role of evidence in assessing the value of PSSs (2). Since its publication, regulators, accreditors, and payers have pushed health care organizations to adopt various “safe practices” and avoid adverse events considered largely preventable (3). Partly as a result, health care provider organizations are striving to improve patient safety as never before.

When “Making Health Care Safer: A Critical Analysis of Patient Safety Practices” was published, the science supporting PSSs was immature. There was inadequate evidence to recommend interventions and how to implement them and limited methods to measure the effect of safety interventions. In the face of such limitations, several national programs, such as those to prevent wrong-site surgery and to implement medication reconciliation, were disseminated on the basis of face validity alone.

During the past decade, clinicians, researchers, and policymakers gained a greater understanding of the epidemiology of errors and preventable harms. The burden is larger than previously thought. Although we do not know exactly how many patients experience preventable harm, we know that, for example, 44,000 to 80,000 patients die each year in the United States of diagnostic errors, 68,000 of decubitus ulcers, and many thousands of teamwork and communication errors and failure to receive evidence-based interventions (4, 5). We also learned that implementing PSSs aimed at certain targets (for example, reducing health care–associated infections and venous thromboembolism) can substantially reduce errors and harm (6, 7).

Unfortunately, recent data indicate that the degree of success in eradicating preventable harm has not matched the investment in effort and financial resources. Studies that examined some practices that had tremendous intuitive appeal, such as reducing resident duty hours and implementing rapid-response teams, yielded conflicting results (8, 9). Examples of unintended consequences of PSSs emerged (10), and successful implementation was found in some cases to be highly context-dependent (11). Three recent U.S. studies showed continuing high rates of preventable harm in hospitals (12–14)—one showed evidence of no improvement in adverse event rates from 2003 to 2008 (12).

Against this backdrop, the Agency for Healthcare Research and Quality commissioned a team led by investigators at RAND Health; Stanford University; the University of California, San Francisco; and Johns Hopkins University to reexamine the evidence behind key PSSs. Reexamination involved several systematic reviews that addressed the effectiveness of particular practices, paying attention to the importance of implementation, context, and any unintended consequences of safety interventions.

In a special supplement that accompanies this issue, we present the evidence reviews underpinning 10 of the 41 PSSs studied in the new report. These strategies include interventions to reduce diagnostic errors (15), in-facility falls (16), pressure ulcers (17), and delirium (18); efforts initiated in hospitals to improve care transitions (19) and medication reconciliation (20); interventions in inpatient settings to promote a patient safety culture or climate (21); implementation of rapid-response systems (22); examination of the effect of nurse–patient staffing on patient outcomes (23); and use of simulation exercises to improve patient safety (24). The supplement also includes an overview article that describes the entire reexamination process and identifies 10 strongly encouraged and 12 encouraged PSSs that are ready for adoption now (25).

In reviewing this literature, we found evidence of progress in bringing science to the field of patient safety. The evidence base about the effectiveness of interventions to reduce harms grew steadily. For example, we now have strong evidence that safety interventions have resulted in a national reduction in 1 type of harm: central line–associated bloodstream infections in intensive care units (6).

Although still imperfect, measures of harm have improved. Guidelines that inform the design and description of patient safety intervention studies are available, and the importance of context in implementing interventions is more widely appreciated (11). Researchers recognize that patient safety is a legitimate field of scholarly endeavor—worthy of career focus, requiring formal training, and providing a path for academic success—although there is a dearth of support for training programs, and applied research remains below basic research in the academic pecking order. Federal support for patient safety research has improved, although it will need to increase even more to meet needs.

Physicians and other health care professionals, professional societies, medical boards, and accreditation bodies have focused efforts to reduce preventable harms. Practicing clinicians increasingly see patient safety as something that they do rather than something that is done to them. In the early years after “Making Health Care Safer: A Critical Analysis of Patient Safety Practices” was published, most PSSs were driven by external forces, such as accreditors or insurers. Now, many of these efforts are driven by professional norms in which patient harms are viewed as a social problem that physicians, working with others, are capable of solving.

Although substantial gaps in the evidence base remain, more than enough evidence exists to prompt decisive action. For example, strong evidence shows that multicom-
ponent interventions aimed at certain safety targets, such as prevention of falls and pressure ulcers, can significantly reduce harm. All hospitals should implement checklist-based initiatives to prevent central line infections and have programs aimed at improving safety culture. Certain themes underlie successful PSSs, including the development of a motivated, trained, and resourced interdisciplinary team (16). Such teams can convert desired interventions into checklists or other system-based tools that promote desired behaviors, focusing on the interventions with the strongest risk reduction and lowest risks.

Researchers will note the need for additional study of many PSSs, such as interventions for care transitions and medication reconciliation and how best to engage patients and families in improving safety. Research is also needed to develop better measures of harm and context. Furthermore, we need additional studies to identify the best models for training, organizing a safety program, integrating systems engineering approaches into clinical environments, and taking full advantage of information technology while avoiding unintended negative consequences. To accomplish this goal, patient safety research will need to move from interdisciplinary (diverse researchers working on diverse problems) to multidisciplinary (diverse researchers working on common problems while maintaining their own conceptual models) to transdisciplinary (diverse researchers working on common problems by using common theories) methods.

A decade ago, our early enthusiasm for patient safety was accompanied by a hope, and some magical thinking, that finding solutions to medical errors would be relatively straightforward. It was believed that by simply adopting some techniques drawn from aviation and other “safe industries,” building strong information technology systems, and improving safety culture, patients would immediately be safer in hospitals and clinics everywhere. We now appreciate the naivety of this point of view. Making patients safe requires ongoing efforts to improve practices, training, information technology, and culture. It requires that senior leaders supply resources and leadership while simultaneously promoting engagement and innovation by frontline clinicians. It will depend on a strong policy environment that creates appropriate incentives for safety while avoiding an overly rigid, prescriptive atmosphere that could sap providers’ enthusiasm and creativity.

Although we have become more sophisticated about the challenges of keeping patients safe over the past decade, the fundamentals have not changed. We need competent, well-trained providers equipped with high-quality evidence and working with talented, strong leaders using well-designed and integrated technologies and sound policies. We hope that the evidence reviews published in the supplement contribute to those efforts by identifying PSSs that will help keep patients safe.

Robert M. Wachter, MD
University of California, San Francisco
San Francisco, California

Peter J. Pronovost, MD, PhD
Johns Hopkins Medicine Patient Safety and Quality
Baltimore, Maryland

Paul G. Shokekke, MD, PhD
West Los Angeles Veterans Affairs Medical Center and RAND Corporation
Santa Monica, California

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References
EDITORIAL

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Current Author Addresses: Dr. Wachter: Room M-994, University of California, San Francisco, 505 Parnassus Avenue, San Francisco, CA 94143.
Dr. Pronovost: 600 North Wolfe Street, Meyer 295, Baltimore, MD 21287-7294.
Dr. Shekelle: RAND Corporation, 1776 Main Street, PO Box 2138, Santa Monica, CA 90407-2138.