IMPROVING SAFETY FOR 15 YEARS

In November 1999, the Institute of Medicine released "To Err is Human," a report estimating that between 44,000 and 98,000 Americans die in hospitals every year from medical mistakes.

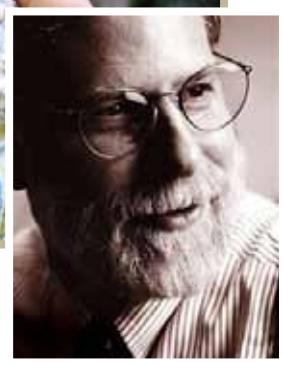
In 2001, two such errors roiled Johns Hopkins Medicine. Eighteen-month-old Josie King died on Feb. 22 from sepsis, a blood infection. Four months later, Ellen Roche died after participating in an asthma study.

These events would change Johns Hopkins Medicine forever.

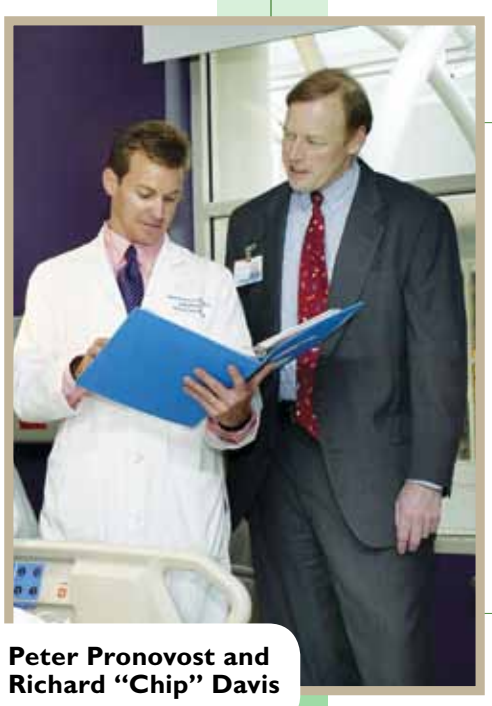
15 Milestones

1. "I am so sorry."

With support from Johns Hopkins leadership, Johns Hopkins Children's Center Director George Dover apologizes to Josie King's parents and acknowledges that preventable medical errors led to her death. The Kings use money from their settlement to fund safety programs at Johns Hopkins.



Sorrel King, Josie King and George Dover



Peter Pronovost and Richard "Chip" Davis

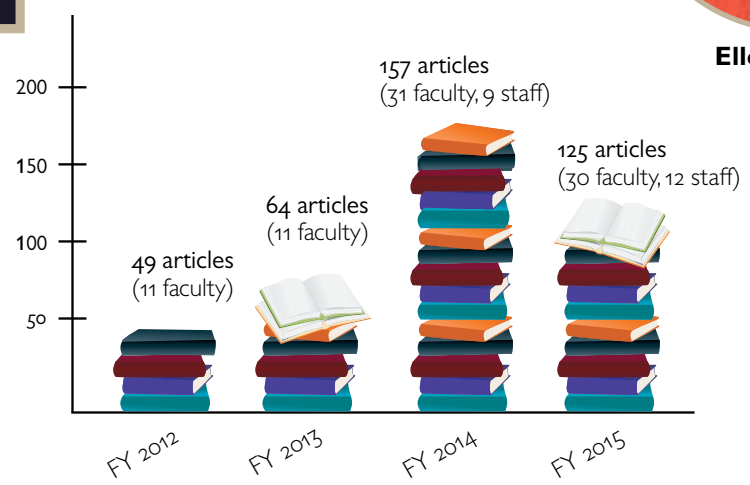
2. Safety As Top Priority

The Center for Innovation in Quality Patient Care is created with donations of $500,000 each from The Johns Hopkins University, The Johns Hopkins Hospital and the school of medicine. Richard "Chip" Davis becomes executive director, and Peter Pronovost is named medical director.

Ellen Roche

3. Better Research Oversight

Johns Hopkins overhauls its Institutional Review Board (IRB) system after Ellen Roche's death and a temporary federal government shutdown of all research protocols. All proposals and their progress are thoroughly reviewed. Intervention plans are required in case a volunteer has an adverse reaction. An electronic medical record system also improves patient safety by ensuring that clinicians have access to research data relevant to patient care.



Articles include original research, viewpoints and reviews authored by faculty and staff members actively engaged in projects in the Armstrong Institute and published in peer-reviewed journals.

4. The Science of Safety

Johns Hopkins safety experts apply scientific rigor to understanding and preventing medical errors. They test possible interventions, translate the research into practice and scale programs for use in care facilities worldwide.

Number of Armstrong Institute Faculty

Original faculty: 11

Current faculty: 110+

5. The Checklist

Pronovost distills 120 pages of information from the Centers for Disease Control and Prevention into a five-step checklist for preventing central line-associated bloodstream infections (CLABSIs). The checklist helps reduce CLABSIs in intensive care units by 80 percent nationwide.

6. Changing the Culture, One Unit at a Time

The Comprehensive Unit-based Safety Program (CUSP) creates a culture of accountability, giving front-line staff members knowledge and support to tackle safety hazards, such as patient falls and medication errors. More than 170 CUSP teams are active across the health system, and the concept is adapted for hospitals worldwide.

7. A Patient Safety Workforce

Patient advocates are hired to develop intervention programs and rapid response protocols. With new training and orientation programs, nurses, engineers and risk managers become patient safety leaders.

Peter Doyle, Lori Paine and Melinda Sawyer

8. Speaking Up and Speaking Out

Johns Hopkins implements an incident reporting system to better understand medical errors and how to prevent them. Work units take safety culture surveys to highlight successes and areas for improvement.

Albert Wu and Cheryl Connors

9. Caring for Second Victims

The Resilience in Stressful Events (RISE) program provides psychological first aid to "second victims," the clinicians who experience stress and remorse because of adverse patient outcomes.

10. Patients as Partners

The Johns Hopkins Children's Center creates the Pediatric Family Advisory Council steering committee with parents and staff members. Similar councils are now active in every Johns Hopkins Medicine hospital, community physicians group and home care group.

11. Building a Strong Infrastructure

Johns Hopkins creates the Armstrong Institute for Patient Safety and Quality in 2011 with a $10 million gift from C. Michael Armstrong, chairman of the Johns Hopkins Medicine board of trustees from 2005 to 2013.

ARMSTRONG INSTITUTE
FOR PATIENT SAFETY AND QUALITY

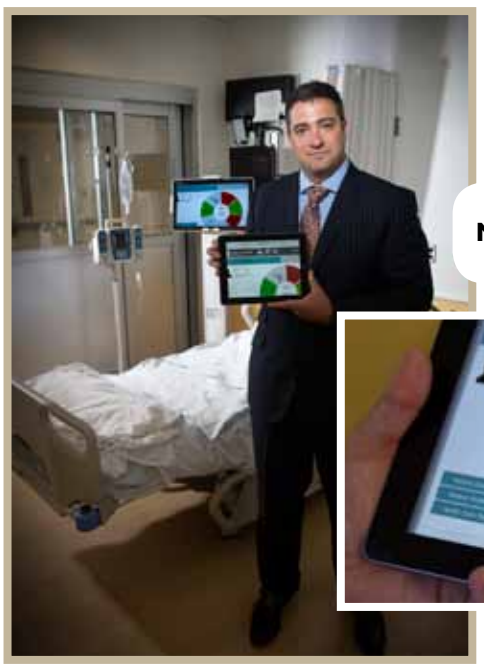
C. Michael Armstrong and Peter Pronovost

12. Sharing Successes

The Armstrong Institute combines rigorous patient safety research with health system operations to create and deploy safety programs and metrics for measuring best practices. By 2015, all six hospitals are nationally recognized for high-quality care, and Johns Hopkins programs and safety metrics are adopted around the world.

13. Safety During Global Crisis

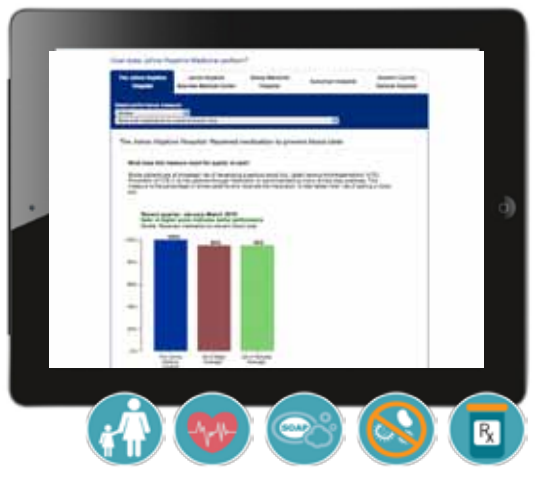
The Armstrong Institute develops a Web-based training program to educate health care workers in government-approved safety procedures for infectious disease outbreaks.



Mark Romig

14. Helping Patients Make Informed Decisions

Johns Hopkins creates a user-friendly resource to help patients and their loved ones understand and compare quality and safety data across the institution.



15. Designing Safe Systems

Armstrong Institute leaders collaborate with Johns Hopkins engineers to develop Project Emerge, a tablet-based application that helps clinicians reduce preventable harms. Microsoft is working with the Armstrong Institute to bring Project Emerge to intensive care units across the nation.

Learn more about the Armstrong Institute and its programs: **hopkinsmedicine.org/armstrong_institute**