Error Reporting: How the Aviation Industry Improved Health Care by Shifting Focus From Individuals to Systems

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Medical error fifth leading cause of death in the U.S.

In 1999, the Institute of Medicine published, "To Err is Human: Building a Safer Health System," shocking both the medical community and the general public by announcing that medical error is the fifth leading cause of death in the United states, and more people (nearly 100,000 per year) die from medical error than from car accidents, breast cancer, or AIDs. prior to that publication, Don Berwick, M.D., the Institute's president and chief executive officer, had noted that, "as many as seven per 100 hospital admissions contain some serious or potentially serious medication error. That's a rate that's far larger than in other industries that try to control hazard as well."

In a follow-up report appearing in the May 18, 2005, issue of the "Journal of the American Medical Association," Dr. Berwick and co-author Lucian Leape, M.D., adjunct professor of health policy and management at the Harvard School of Public Health, credited "To Err is Human" with changing the conversation to a focus on changing systems.

Many of the same factors inherent to aviation industry systems (e.g., extremely complex environments, cutting-edge technology, man-machine interactions, team communications, and the dynamics of human performance) also exist in health care.

It could happen to the best of us

It could happen to the most highly skilled, the most meticulous nurses among us. Someone might inadvertently omit a step in a procedure that he or she performs all the time. A label might be misread, or an extra zero added to a dosage. Then there are look-alikes – medications that look just like other medications or are packaged the same. And what if a bin is stocked with the wrong drug, and the nurse does not realize that until after a dose of that drug is dispensed to a patient?

Salt vs. Sugar

These are easy mistakes to make – equivalent to, say, reaching for the sugar and grabbing the salt in your own kitchen.

In fact, highly competent nurses who are performing routine tasks in a familiar environment – nurses who are distracted for a moment, for whatever reason – commit the vast majority of nurse errors.

Making a mistake on the job

People make mistakes, especially in highly complex environments like health care. What happens to a nurse who has made a mistake – an unintentional error, a minor error, but an error just the same – on the job? Historically, the matter would go before the institutional nursing peer-review committee (NPRC) or straight to the Board of Nurse Examiners (BNE). Texas is a mandatory reporting state; anyone who is aware of any error committed by a nurse is required to report that incident. It could mean the end of a nurse's career. Although it is unusual that a nurse's license would be at stake in these situations, the nurse is still under intense scrutiny. Even if cleared of any wrongdoing, the process itself can crush self-esteem and self-confidence.

"The beauty of the HASP program is that we now understand that before we can create the optimally safe patient care environment, we have to create an environment that is safe for the nurses."

-Barbara Summers, Ph.D., vice president and chief nursing officer

Texas Board of Nurse Examiners partners with three Texas Medical Center institutions

In June 2003, the Texas BNE solicited proposals for pilot programs "designed to evaluate the efficacy and effect on protection of the public of reporting systems designed to encourage identification of system errors." M. D. Anderson submitted a proposal and, in July 2005, an innovative, 2-year pilot program was launched.

The Healthcare Alliance Safety Partnership (HASP), the first program of its kind in the nation, is a quality improvement/program evaluation project funded by the Institute for Healthcare Excellence at M. D. Anderson and The University of Texas Center of Excellence

for patient safety Research and practice. It's a collaboration of three Texas Medical Center institutions – **M. D. Anderson, St. Luke's Episcopal Hospital and Texas Children's Hospital** – in partnership with the Texas BNE.

Any nurse working at one of the participating institutions is eligible to participate. Nurses who participate in this voluntary program are afforded limited protection within the project guidelines. There are certain exclusionary criteria related to malicious intent, knowingly committing an error, substance abuse or impairment, criminal activity, or the death or serious injury of a patient.

Why should a nurse report to the system? **HASP provides a non-punitive mechanism for reporting issues and seeks to identify and understand the system issues that play a part in errors that ultimately occur.** Instead of focusing only on the actions of one nurse at a time, we now have the opportunity to identify and analyze systems and human performance factors that contribute to errors, and develop action plans for systems-based interventions to prevent by the Institute for Healthcare Excellence at M. D. Anderson, and the UT Center of Excellence for Patient Safety Research and Practice, to improve patient safety by creating an environment that encourages organizations to report close calls, evaluate interventions, and improve health care quality in the future.

Currently, we are 3-1/2 years into a 5-year grant from the Agency for Healthcare Research and Quality and there are 10 participating institutions, including one outside of Texas. Any employee at any of the participating institutions can report a close call. To date, 600 close calls have been reported those errors from recurring. HASP seeks to provide protection to the public, while also improving health care delivery systems – a true "win-win" situation. "The beauty of the HASP program," says Barbara Summers, Ph.D., vice president and chief nursing officer, "is that we now understand that before we can create the optimally safe patient care environment, we have to create an environment that is safe for the nurses."

Aviation industry leads the way in shifting focus from individuals to systems

The shift to a systems perspective on reporting, analyzing and responding to medical errors that has occurred over the past five or six years is based on a model created within the aviation industry. **Many of the same factors inherent to aviation industry systems (e.g., extremely complex environments, cutting-edge technology, man-machine interactions, team communications, and the dynamics of human performance) also exist in health care.**

Eric Thomas, M.D., MPH, associate professor at the University of Texas-Houston Medical School, is a principal investigator on the UT Center for Excellence for Patient Safety Research and Practice. The Center encompasses five projects, including HASP, which are all united by the theme of translating safety methods from aviation to health care. According to Thomas, **"Airplanes are one of the safest ways to travel. And we really believe that's true because pilots are perfectly comfortable reporting their own mistakes or even mistakes they see somebody else commit. And the reason they're comfortable is that they know they're not going to be punished or lose their jobs. Instead, they see these as opportunities to learn."**

University of Texas Close Call Reporting System

Another of the Center's projects is the U.T. Close Call Reporting System (UTCCRS), a voluntary and anonymous tool to gather valuable information about close calls. Close calls are defined as "situations that could have resulted in an accident, injury, or illness, but did not due to chance or timely intervention."

It's part of a comprehensive strategy via the system, and information from these reports will inform the development of targeted interventions and ultimately lead to the identification and implementation of best practices in quality improvement.

Empowering Nurses

Sherry Martin, M.Ed., vice president of process improvement and a principal investigator on both the UTCCRS and the HASP projects, says, **"Nurses are now empowered to regulate nursing practice without punishing nurses who are impacted by systems problems."**

Texas mandatory reporting requirements have historically put nurses in the position of having to punish other nurses for single, isolated errors. There were few options to remediate nurses within the institution; every incident went before the BNE. The health care industry has moved toward a "systems view" over the past few years. We now have a broader range of tools available for identifying, reporting and resolving medical errors that occur within those systems – errors that may contribute to an event that looks like a nurse's error.

As more programs like HASP and UTCCRS are implemented across the country, the data collected by participating institutions will be published and available to all, making the health care workplace safer for everyone in the industry and raising the bar on healthcare safety for all Americans.

Everyone wins.

If You Believe You Have Made an Error

- Take care of your patient
- Report the error to your supervisor
- Follow institutional policy, including completing an incident report
- Obtain a self-report form from your manager, or download the form, instructions, and detailed description of the process from the website, www.texashasp.org; submit it to HASP by mail, according to the instructions.

The HASP Process: The program includes these basic steps, designed to learn about safety and decrease errors:

Problem Discovery Phase

- The HASP nurse analyst talks with you to determine what happened, interviews other people, and reviews materials and records
- The HASP team outlines the chain of events

Analysis Phase

- The HASP team determines the factors that caused the error
- Your case is presented to the Event Review Committee in an anonymous manner
- The ERC recommends an action plan

Resolution

- The action plan is completed and returned to HASP

Reporting

- Report is made to the BNE and the record is closed

Evaluation

- The HASP team will evaluate the program on an ongoing basis

For more information about HASP, error-reporting mechanisms and patient safety programs:

- HASP (www.texashasp.org)
- Institute of Healthcare Excellence at M. D. Anderson: 713-792-9549
- The University of Texas Close Call Reporting system (www.utccrs.org)
- U.T. Center of Excellence for Patient Safety (www.utpatientsafety.org)