## About This Newsletter

This is the first in a series of monthly newsletters from the California Hospital Patient Safety Organization (CHPSO). CHPSO is dedicated to eliminating preventable harm and improving the quality of health care delivery in California hospitals.

CHPSO Patient Safety News will provide lessons learned from reviews of patient-safety events and news of patient-safety activities in this state. We hope you will find it useful in your efforts to improve patient outcomes. This newsletter may be freely distributed in its original form. Copies of each newsletter will be archived on the CHPSO website (www.chpso.org). Send subscription requests (additions, deletions) to ltate@calhospital.org. Article submission information is at the end of this newsletter.

## The WHO Surgical Checklist

Both the California Hospital Patient Safety Organization and the California Hospital Association consider the improvement of surgical safety as essential to public health and endorse the concept of the "WHO Surgical Safety Checklist." The CHA Board requests that each hospital try the checklist once, in one operating room, with one anesthesiologist and one surgeon, by April 1, 2009.

The checklist reduces the chance of overlooking important information at three points during the patient's care: at check-in, at the time-out and at the end of the case. The majority of the activities on the checklist are already implemented in most U.S. hospitals, and most already

## Why CHPSO?

In health care, failure to provide correct care has traditionally been viewed as solely caused by negligent acts, rather than normal human fallibilities. This is incorrect. Because humans are fallible, particularly when working within complex dangerous environments such as health care, we have to identify system vulnerabilities and redesign health care delivery to improve patient safety.

We can learn important lessons from other dangerous fields, such as the aviation industry and the military. Key to addressing this is a system that encourages reporting adverse events and sharing information about dangerous situations. Congress recognized this, and created Patient Safety Organizations (PSOs) as a means of sharing and analyzing information within a sphere of confidentiality for both patient and provider, and privilege from discovery.

The California Hospital Patient Safety Organization's (CHPSO) distinct advantage over other PSOs is its focus on the laws, regulations and patient-safety initiatives specific to California. Hospitals sharing a common market area will be able to work together and focus their patient-safety and quality-improvement efforts on issues relevant to their communities.

## Relation to Regional Associations and CHA

CHPSO coordinates its efforts with California's Regional Hospital Associations (Hospital Council, HASC, and HASD&IC), the California Hospital Association (CHA) and existing patient-safety collaboratives across the state.

## Sign up to participate

Instructions and the CHPSO-hospital contract are available at the CHPSO website (www.chpso.org/signup.html). The contract enables a provider to work with CHPSO, but the hospital retains the ability to choose the activities in which it wants to participate.

have checklists for a portion of the patient's care (particularly check-in), so this should not represent a major change in practice patterns, but would add some rigor to the critical phases, particularly at the end of the case. Certain aspects of the checklist are intended to improve team communication. A recent worldwide trial in eight very different hospitals exhibited significant reductions in morbidity and mortality in many of the institutions.

Worldwide, about 234 million major operations are performed every year. From those procedures, more than 7 million people experience disabling complications, and more than 1 million die.
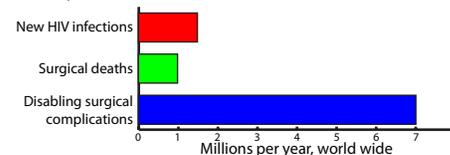


Millions per year, world wide

The WHO Safe Surgery Saves Lives website includes copies of the checklist, an implementation manual, and tools for training and implementation.

The Checklist, a New Yorker article by Atul Gawande, describes the case for checklists in making complex tasks safer.

## Wrong Site Surgery: The Minnesota Experience

As with other types of reportable adverse events, the root causes of wrong-site procedures are often related to a lack of consistency in processes. While policies requiring a time-out prior to surgery are in place in all hospitals and surgical centers, these policies are not always carried out in a reliable manner, and are not consistently in place outside of the operating room.

As a result, providers who perform invasive procedures at the bedside or in procedural areas may not routinely do a time-out, or different providers/teams may conduct the time-out in different ways. This has resulted in a cluster of wrong-sided regional anesthesia blocks, radiation therapy treatments, and biopsies, all of which were done outside of the OR. Inside the OR, as well, inconsistencies in the conduct or rigor of the time-out process are not uncommon.

Recently reported events have revealed several areas of risk related to surgical scheduling. In particular, there is wide variation across and between physician clinics, hospitals and ambulatory surgical centers in terms of who must verify patient and procedure information prior to surgery, when and by whom changes can be made to a scheduled procedure, and the source documents that are used to verify information. The lack of standardization in this process increases the risk that surgical scheduling errors can lead to a wrong site surgery or wrong procedure event.

A number of larger issues are also often at play when it comes to surgical events. Distractions, interruptions, and confirmation bias (the tendency to look for, or to see, only that information which confirms what we already thought was true) can all increase the risk of wrong site surgery.

The culture within the OR can also play a role, particularly when junior team members are reluctant to speak up about potential errors,

— Adverse Health Events in Minnesota: Fifth Annual Public Report

## The Misconception of Infusion Pump Occlusion Alarms

Occlusion alarms on infusion pumps do not detect or prevent infiltration or extravasation. Infusion pumps are equipped with downstream occlusion (pressure) sensor circuitry used to detect elevated pressures in the IV administration set between the infusion pump mechanism and the patient. When the sensor circuitry detects an elevated pressure that equals the pump's preset occlusion alarm limit (e.g., 10 psi), the infusion pump will initiate an audible and a visual alarm and stop the IV flow.

Infiltration and extravasation pressures are typically much lower than pumps' downstream occlusion alarm limit settings and therefore will not trigger the occlusion alarm. Setting an infusion pump's maximum downstream occlusion alarm limit to a very low value (greater sensitivity) would still not reliably detect infiltration or extravasation pressures but would, instead, create nuisance alarm situations, which would only inconvenience the patient and caregiver. In some cases, an infusion pump may alarm for a downstream occlusion during an infiltration or extravasation; however, the occlusion condition would most likely be for reasons other than infiltration or extravasation (e.g., kinked IV tubing between the pump mechanism and the patient, a blocked IV port site).

Infusion pumps play an ancillary role in infiltration or extravasation events, and the belief that the pumps themselves produce the infiltration or extravasation is inaccurate. Infiltration or extravasation may be caused by mechanical means, such as the needle puncturing the vein wall or the needle dislodging from the implanted port, obstructed blood flow, obstructed fluid flow, or an inflammatory reaction (e.g., chemical irritation from medications).

— The Pennsylvania Patient Safety Authority

## IJ Corner

The California Department of Public Health defines "Immediate Jeopardy" (IJ) as a situation in which the licensee's noncompliance with one ore more requirements of licensure has caused, or is likely to cause, serious injury or death to a patient. This column will provide monthly updates on the types of IJs and prevention strategies.

### Reducing human error to prevent harm

An overriding prevention model for hospitals is to reduce human error. Behind most human errors is a systems problem. Creating an environment where staff feel comfortable reporting errors is critical to building a better system to protect both the patient and the professional from unintended harm. This is what the airline industry has done. Each reported error is a step toward creating a system that limits errors.

## Practical lessons from recent IJs include the following:

- Ensure that policies and procedures regarding medication safety are understood and followed.

- Ensure that Code Carts have the dosage and strength of medication required by the policy (3 IJs were issued for not having the medication dosage or strength required by the policy actually available on the code cart).

- Ensure appropriate medication is received from suppliers (e.g., recalled heparin was provided to hospitals from suppliers).

- Eliminate the need for calculating medication dosages in code situations as much as possible. To reduce human error, calculate drug dosages in advance for common medications (e.g. dopamine) and have pediatric drug calculations available, based on weight, in writing on the code cart.

- If hospital staff policy requires drug calculations during a code, make sure staff have the knowledge and tools to do so appropriately (e.g., surveyors have asked staff to calculate pediatric emergency medications given in a code situation).

— Debby Rogers, Vice President Quality & Emergency Services (drogers@calhospital.org), California Hospital Association

## Lessons from the Hudson River

On January 15, 2009, the crew of USAir 1549 successfully landed and evacuated a commercial airliner in the Hudson River. Dubbed the "Miracle on the Hudson," it was a validation of the resilient systems that have made commercial aviation as safe as it is today.

"Sully" and his crew relied upon system standardization, communication protocols and coordination of tasks that have been honed through years of refinement, practice, and discipline. These same techniques, and systems to ensure their use, are an integral part of improving patient safety and quality of care.

As a commercial airline pilot who, for the past five years, has had the good fortune to work with some of the best health care organizations in the world as they implement the same type of resilient systems in their standard of care, it is gratifying to see this concept gain momentum. Quality and safety organizations, such as the Institute for Healthcare Improvement, National Patient Safety Foundation and others, increasingly recognize that the key to safety is not eliminating human error, for that is a fool's errand.

Fortunately for my colleagues and me, airplanes are far more predictable than patients. Those who are serious about patient safety and quality recognize that the need for resilient systems in health care is far more acute than it is in aviation. My hat is off to the crew of USAir 1549; their professionalism and skill is what all professional crews strive to achieve. Is your crew ready for your January 15?

—Steven Montague (lifewings@verizon.net), Vice President, LifeWings

## Free Patient Safety Culture Surveys

Thanks to a seed grant from the California HealthCare Foundation, CHPSO is now able to administer and provide basic analysis for the patient safety culture survey developed by the Agency for Healthcare Research and Quality. The survey is administered by web, and the data is formatted for submission to the national Hospital Survey on Patient Safety Culture Comparative Database. Hospitals may also receive a copy of the responses for their own further analysis. There is no charge for this service. Contact Rory Jaffe (rjaffe@calhospital.org).

## Article Submission

Prospective authors may submit articles to Rory Jaffe, MD MBA (rjaffe@calhospital.org, 916-552-7568). Typical articles will be brief — between 200 and 400 words. Additional information may be provided as web links. If accepted, the additional information may be hosted on the CHPSO website.

## Web sites for additional information

The Checklist, by Atul Gawande: www.newyorker.com/reporting/2007/12/10/071210fa_fact_gawande.

CHPSO endorsement of the WHO checklist: www.chpso.org/whosurg/checkend.pdf.

CHA endorsement of the WHO checklist: www.chpso.org/whosurg/chaend.pdf.

Worldwide trial results for the checklist: content.nejm.org/cgi/reprint/NEJM-sa0810119.pdf.

Adverse health events in Minnesota, 5th annual report: www.health.state.mn.us/patientsafety/ae/09ahereport.pdf.

More on pump occlusion alarms: patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2007/sep4(3)/Pages/97.aspx.