Preventing adverse events, sentinel events and never events requires special techniques and innovation. Mark Chassin, president of The Joint Commission, sums it up this way: “We have imperfect tools to assess exactly what happened in the course of an adverse event. The problem is that we need to generate new knowledge [Ref. 1].” This article offers some heuristics that can prevent many serious mishaps and generate innovative interventions.

Heuristics are short statements of lessons learned, or “rules of thumb,” if you will. They may be words of wisdom from experience, educated guesses or simply innovation. They are often shortcuts in complex situations, and can lead to smarter and more efficient work. They work most of the time.

Over the span of 30 years, I have learned many lessons. They include:

**Heuristic 1: If You Stop Working on Unsafe Processes, then You Are Likely to Discover a Safer Process**

The cause of long waits may be insufficient ER capacity. But it’s not all doom and gloom everywhere. Some hospitals are making their emergency rooms more efficient, while still maintaining safety [Ref. 2]. The following are examples:

- Hospitals such as Cooper Hospital-University Medical Center in Camden, New Jersey, are forming “fast track” areas in their emergency departments to more quickly treat patients with minor illnesses and injuries, such as small cuts or ankle sprains. Often, these areas are staffed by physician assistants or nurse practitioners, leaving the doctors to treat more serious problems.
- Hospitals such as Dublin (Ohio) Methodist Hospital are using computerized physician ordering systems to speed patients' ability to get blood tests and other diagnostic tests. All patient records are computerized, making it easier for nurses and doctors to check on a patient's status. All tests can be ordered electronically, which can reduce delays, says Dave Boehmer, the ER medical director.
- Scripps Mercy Hospital in San Diego and Chula Vista, California, has installed a computerized tracking system to help better monitor patients and available bed space to reduce the time patients wait for an in-patient bed. The hospital has also added a second triage area, and put a full-time phlebotomist in the emergency department to speed blood testing.
- Hudson Valley Hospital Center in Westchester, New York has implemented what it calls a “no wait” ER by letting its triage nurse start caring for the patient by ordering tests and moving the patient registration to the bedside via portable computers.

“The best way to stop working on the wrong things is to form a cross-functional team. Encourage everyone to identify wrong things. I ask every team member to identify at least five wrong things. They are always able to do so. With a good leader, this can be done.”

We should be doing a better job overall,” says Neal Chawla, an emergency physician at Inova Fairfax Hospital in Virginia and a spokesman for the American College of Emergency Physicians. “Everyone's heard the stories of people dying in waiting rooms, and we may hear more of those stories unless things do get fixed.”
everyone to identify wrong things. I ask every team member to identify at least five wrong things. They are always able to do so. With a good leader, this can be done. Then, create a plan to stop working on the wrong things and replace them with right things. In one case, employees came up with 22 solutions for a single problem. About five of them had more than a 600 percent ROI (return on investment). Almost always, the right things seem to just appear by themselves. You just have to ask.

Heuristic 2: Learn to Say “No” to “Yes” Men

If all team members say “yes-yes” to a new diagnosis or a new procedure, your answer should be “no-no.” It is likely that no one questioned whether the knowledge, assumptions and risk were understood well enough.

How can we make a good decision on complex interactions until we see the situation from different points of view? If we introduce a new process or protocol, we need to see potential problems and hear potential harm from the experience of nurses, doctors, psychologists, support staff, risk managers, quality assurance staff and safety officers. Each will have a different concern. Let them challenge the oversights and omissions based on their experience. Each team member should mentally perform hazard analysis on high risks before saying “yes.” Dr. Edward De Bono, the author of Six Thinking Hats, suggests adding at least six members to a team, with each assigned to look at a situation from a specific point of view. Since each participant is assigned to view the problems from a different perspective, the process encourages balanced and comprehensive participation. At a minimum, the team leader should ask why each member is voting “yes.”

Heuristic 3: If You Want to Solve Tough Problems, Create a Sense of Urgency

Critical mishaps must be prevented quickly and efficiently. The Allegheny General Hospital uses the Toyota production system model, where any employee can stop the line when a quality problem is discovered, form a team and resolve the problem before re-starting the line. If the problem cannot be resolved in a reasonable time frame, the employee must pull an “andon” cord (umbilical cord) switch, which is a direct line to a top executive. The executive must help resolve the problem immediately. A nurse in the radiology department at Allegheny General felt that a patient needed an intravenous (IV) line to avoid harm. She requested radiology staff to do this. They told her to get it done in the OR, where she intended to transport the patient. She felt that the patient could be harmed before he could make it to the OR. She pulled the andon cord to the Head of Medicine. He called the Head of Radiology, who installed the IV line immediately.

Taking months and years can do serious harm. When you allocate a short time for a project, teams become creative. Perhaps the following industrial example may help. A new vice president was hired at Hewlett Packard several years ago, and he instituted a tough goal: to develop mainstream products in half the time and at half the cost. At first, everyone thought this was impossible in the already cut-throat competitive marketplace. The team did it, however, in half the time. The three products — namely, a printer, fax machine and scanner — were all designed into a single product instead of as stand-alones. If you buy all three products in one, the price is 50 percent lower.
Sometimes, caregivers take no action, hoping that a problem will correct itself. It may be done out of denial, or because of fear of an inability to take action, or upsetting the superiors. Whatever the case, the patient is usually the victim.

Below is a case reported in the Boston Globe on March 25, 2009, in which several inactions and passive actions resulted in harm to a patient [Ref. 3].

When Dr. Loren J. Borud began his first case at about 8 a.m., an operating room nurse noticed he looked tired and wobbly. She was so concerned, according to one account of the Friday last June, that she suggested Borud postpone his next patient.

Borud said he had been up all night working on a book, but he kept operating, starting a second case, during which he briefly fell asleep, according to a report from state investigators. The nurse again called him aside and suggested "maybe he should take a break," according to her interviews with investigators, but he continued the surgery.

These findings are part of a report in which state Department of Public Health investigators found that Beth Israel Deaconess Medical Center provided poor care to Borud's second patient that day. They also faulted the hospital's response to Borud's apparent impairment.

The patient, Michael K. Hicks of Quincy, has said he suffered complications after liposuction surgery and repair of a scar on his chest, and in July, he sued the hospital, six doctors, including Borud, and two nurses. He has settled his case; the terms are confidential.

The article goes on to say that the operating room nurse called the plastic surgery department twice to report Borud's behavior that day — and was told to "keep an eye on him" — but no direct action was taken. This was despite the fact that Borud had a public history of drug and alcohol abuse, investigators found. A surgical resident eventually reported Borud to a more senior doctor, at which point Borud left for unexplained reasons.

The patient also wasn't treated appropriately after the surgery, state investigators said, citing that Hicks was not assessed by a physician before being discharged that night, and was not told why Borud had to abandon the operation until 10 days after the fact. Also, the operation lasted seven hours, rather than the 90 minutes he was told to expect.

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The article continues:

A patient safety specialist said the case reveals broader issues about the culture of operating rooms and how difficult it can be to get nurses, technicians and residents to challenge surgeons — even when they have problematic histories.

"How common is it that nurses and other personnel don't speak up? I can't think of any [hospital] in the world where this isn't an issue," said Dr. Allan Frankel, former director of patient safety at Partners...
HealthCare and founder of a patient safety consulting company based in Washington, D.C. Frankel said that even in cases such as the one at Beth Israel Deaconess, where a nurse apparently did try to confront Borud, too often hospitals haven't designated a specific manager who will come in and make the final decision.

Max Borten, Hicks's attorney, said his client now believes "justice has been done." He said Hicks, 40, will need more plastic surgery because of damage done during the operation.

This case shows that some staff tried to take actions, but inactions or passive responses of superiors were inactions from the point of view of the patient. Frankel said it right above: The hospitals should designate a specific manager who will come and make the final decision. Nurses don't have the power over surgeons. It is not their job to confront surgeons.

**Heuristic 5: No Control is the Best Control**

We need to view this in the right context. The central thinking is that we should design the process in such a way that it does not require day-to-day control or frequent monitoring. Take the example of inventory control of pharmacy medicines. Often, these items suddenly get used up completely and are not there when needed. The only solution seems to be to overstock, which results in expired drugs and inefficient use of money. We can use the Walmart technique of no control. They reduce inventory and assure adequate supplies all the time without any monitoring on their part. In this method, as soon as an item is removed from the shelf, the supplier is notified through the information systems. It is the supplier's responsibility to automatically replace the inventory after a few items are removed, instead of shipping a large number of units. This assures there is never a large amount of inventory not being used. As far as Walmart is concerned, they don't need to control or monitor inventory at all.

**Heuristic 6: Incident Reporting Should Include Reporting on Peers, But Must Be Non-punitive**

Most of the real incidents never get into the incident reporting systems. Hardly any doctor or nurse reports on their own mistakes in the incident report. They rarely report on the mistakes of peers. On average, more than half (52 percent) of hospital staff surveyed did not report any medical errors in their hospital over a 12-month period, according to a report based on data from nearly 200,000 hospital staff from 622 hospitals nationwide [Ref. 4].

Hospitals should report all wrong medications, vague prescriptions, wrong doses administered and doses given at the wrong time. A patient walked away in frustration from an ER because she could not see the triage nurse in a reasonable time; it was not reported on the incident report. Often wrong diagnoses do not go on the incident reports. But these incidents, when ignored, often turn into adverse and never events. A family friend had a brain tumor. The MRI completely missed it because it was not working right that day. She was given the wrong diagnosis, resulting in the paralysis of one side of the body and was told to spend her entire life in a wheelchair. When a tumor was finally diagnosed, she discovered through doctor-to-doctor communication that the MRI was not working right in the initial wrong diagnosis. The patient did not sue the hospital, to avoid more pain in trying to prove the hospital guilty. Chances are that none of these incidents were in the incident report.

Each incident should produce a new solution. The solutions can be simple and cheap. I was in the intensive care unit at a large hospital. The housekeeper had just finished mopping the floor. I saw a nurse slip on the wet floor and almost fall. A resident almost fell, as well. I asked them if they were going to report the slipping and falling on the incident report. They both blamed themselves for ignoring the "wet floor" sign. Then, a patient's mother wearing high heels walked in. I got worried that she may fall. I deliberately walked close to her to protect her. I had good shoes that day to protect me. The fact is that this incident is a clear warning for many falls in the future. Someone should report it on the incident report. I decided to do something about it. I did not just want to report the incident; I also wanted to offer a cheap solution.

I could not come up with a good solution. But I have learned one lesson from my experience: Ask the employees who have worked in the trenches. I approached an elderly housekeeper who had worked in this job for years. This is what she said: "I have been telling the hospital for years to mop one side of the hallway so people can walk on the other side, which is dry, and then mop the wet side when it becomes dry. But nobody listens to me." This solution requires zero investment and is simple and elegant. I wrote about it to higher-ups, crediting the solution to her. The solution was implemented. This is how incident reports should be treated.

**Heuristic 7: Convert Bad News into Good News**

Hospital care statistics are painful, not only for patients but also for hospitals that work hard to prevent harm. Patient safety incidents in Medicare patients still account for nearly 100,000 preventable deaths and nearly $7 billion in excess costs yearly [Ref. 5]. Only seven percent of hospitals meet Leapfrog
medication error prevention standards, and most hospitals fall short on safety measures, according to the 2008 Leapfrog Hospital Survey [Ref. 6]. The solution is not to take this news negatively, but to recognize it as evidence of a need to change. But, to convert bad news into good, process improvement must be rapid, just as we saw in the case of the Allegheny General Hospital.

Summary

Each organization should develop intelligence in the form of heuristics. They are to the point, and easy to remember. They are a good tool for friendly challenging. If we don't challenge, we create harm continuously and ultimately hurt the reputation of the hospital.

References: