

Patient Safety Strategies Often Lack Evidence Base

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WASHINGTON — Many of the strategies held to prevent adverse events and promote patient safety “actually are quite speculative. There isn’t really a lot of evidence that supports them,” according to Dr. Scott A. Flanders, director of the hospitalist program at the University of Michigan Medical Center in Ann Arbor.

In a presentation at the annual meeting of the American College of Physicians, Dr. Flanders outlined an organized framework for considering and implementing patient safety interventions in the hospital.

Balancing the urgent need to act against the need for good evidence “is a little more complicated than just rolling up your sleeves and running in to begin tackling a problem,” he said. Some interventions are easy to implement, but don’t have strong evidence to support them. Others have the evidence, but are difficult to undertake.

Safety interventions also can introduce risks for new errors or complications. And there has been little assessment of the cost-effectiveness of specific interventions, Dr. Flanders said.

Further, the evidence backing patient safety measures can change. Many of the 75 patient safety practices that received high ratings in the Agency for Healthcare Research and Quality’s influential 2001 report, “Making Health Care Safer: A Critical Analysis of Patient Safety Practices,” are now being seriously questioned, including the use of β -blockers to prevent perioperative cardiac complications, rapid response teams to avoid failure to rescue, pharmacologic prophylaxis to prevent venous thromboembolism, and surveillance to minimize methicillin-resistant *Staphylococcus aureus* infections.

“At a minimum, you need to run through the following list of considerations before you get started,” he said.

First consider the scope of the problem being targeted and whether a solution can reasonably be accomplished. Next, evaluate the evidence for the effectiveness of the intervention. Assess the complexity and the possible costs of implementation. Evaluate whether a course of action can cause new errors or other collateral effects. And look for momentum—synergy with other existing or planned efforts at your facility, said Dr. Flanders, who is also an associate professor of medicine at the University of Michigan.

His recommendations for implementing patient safety programs are based on the “balanced diet” approaches suggested in a recent article (Med. Clin. N. Am. 2008; 92:275-93):

► **“Low-hanging fruit.”** These are easy-to-implement interventions supported by strong evidence. Examples include the use of ultrasound guidance for central line in-



Postdischarge adverse events can be reduced by following up with patients, Dr. Scott A. Flanders said.

section, guidelines for reducing central line infections, and guidelines for reducing catheter-related urinary tract infections.

► **“Slightly higher fruit.”** Interventions for improved provider communication, for example, are supported by weaker evidence but are easy to implement.

Alternatively, methods of improving care transitions are supported by strong evidence but are somewhat difficult to implement.

Computerized/structured sign-out systems can reduce adverse events and the number of patients missed on resident rounds. Postdischarge adverse events can be reduced by following up with patients within 48-72 hours and using structured discharge summaries that list medications at discharge, changes in medications since admission, current problems, and pending laboratory tests.

Phone communication with providers can be improved by having referring physicians read back important information about critical lab results, requests to bring patients for procedures, and verbal orders.

► **Projects that will generate momentum.** Executive walk rounds can jump-start problem solving, according to Dr. Flanders. On executive walk rounds, senior hospital executives join physician and nurse leaders in conducting periodic visits to different areas within the hospital. This provides opportunities for informal discussions about troubling events, the system issues that led to these events, and suggested solutions.

Planned follow-up is crucial to the success of this approach.

Rapid response teams (RRTs) appear to substantially improve staff morale, especially for nurses, Dr. Flanders said, although the teams haven’t been clearly shown to decrease mortality.

► **Planning for bigger projects down the road.** Good examples of long-term solutions that require planning and a team approach include implementation of computerized physician order entry and electronic medical records.

“Computerization is going to happen,” Dr. Flanders said, although there is no evidence that technologic solutions lead to harm reduction.

Dr. Flanders reported that he had no relevant financial relationships.

Evidence Is Mixed for Several Commonly Used Safety Interventions

Dr. Flanders described several examples of patient safety strategies that have not been confirmed by data:

► **Preventing perioperative cardiac complications.** The recommendation to use β -blockers to reduce cardiac complications of noncardiac surgery—based on five randomized trials with a total of about 600 patients—received the second-highest evidence rating in the Agency for Healthcare Research and Quality’s 2001 report, “Making Health Care Safer: A Critical Analysis of Patient Safety Practices.”

The overall benefit of this recommendation is now unclear, said Dr. Flanders, citing a 2005 meta-analysis of 22 clinical trials (BMJ 2005;331:313-21). In those trials, the use of perioperative β -blockers appeared to increase the risk of bradycardia and hypotension.

► **Avoiding failure to rescue.** Patients who experience cardiac arrest in the hospital often have preceding signs of clinical deterioration. Rapid response teams (RRTs) or medical emergency teams (METs) have been organized to react quickly and try to prevent deaths.

Two observational studies and one randomized study found a reduced risk of death associated with RRTs. But researchers in Australia found that METs had no substantial effect on the incidence of cardiac arrest, unplanned ICU admission, or unexpected death (Lancet 2005;365:2091-7).

► **Preventing venous thromboembolism.** Half of the estimated 2 million cases of venous thromboembolism (VTE) that occur each year develop in the hospital or within 30 days of discharge. Between 10% and 25% of inpatients may develop VTE, resulting in additional costs of up to \$20,000 per episode.

Several meta-analyses have shown inconsistent evidence that pharmacologic prophylaxis can reduce the risk of VTE. “No study has ever shown a mortality benefit, including the meta-analyses that combined thousands of patients,” Dr. Flanders said, and studies have shown a roughly 50% increased risk of minor bleeding.

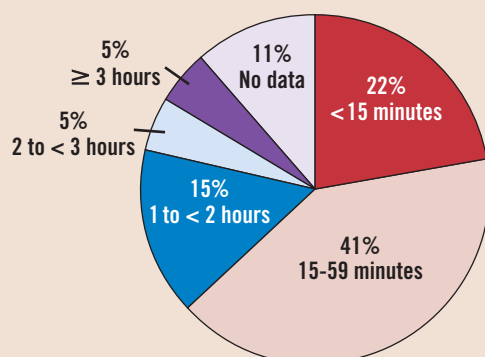
► **Preventing methicillin-resistant *Staphylococcus aureus* (MRSA) infections.** Prevention strategies aimed at limiting the spread of MRSA include hand hygiene, environmental decontamination, screening to identify colonized individuals, and the use of contact barriers to isolate colonized/infected patients.

Two large studies recently evaluated MRSA surveillance and decolonization. In an observational study involving three hospitals, polymerase chain reaction (PCR) was used to screen nasal specimens from more than 150,000 patients. Patients who tested positive for MRSA were put in contact isolation and decolonized with nasal mupirocin and chlorhexidine body washes. The baseline MRSA infection rate was about 9 per 10,000 patient days. The rate fell to about 7.5 per 10,000 after surveillance was implemented in the ICU only, and to about 4 per 10,000 after implementation of hospital-wide surveillance (Ann. Intern. Med. 2008;148:409-18).

But an interventional cohort study that involved almost 22,000 surgical patients failed to show a benefit. With use of a crossover design, PCR screening for MRSA on admission plus standard infection control measures was compared with standard infection control alone. There was no difference between the two approaches in the number of infections per 1,000 patient days (JAMA 2008;299:1149-57).

DATA WATCH

Time Spent Waiting to See a Physician In the Emergency Department



Note: Based on 2005 data from the National Hospital Ambulatory Medical Care Survey.
Source: Centers for Disease Control and Prevention