

'Never events'

Save Our Skin: Periop teams rally to prevent pressure ulcers in OR

A new Medicare payment policy is spurring hospitals to strengthen their programs to prevent pressure ulcers and other avoidable complications. Starting in October 2008, Medicare will no longer pay extra for treatment of 8 preventable conditions acquired in the hospital, including pressure ulcers.

Pressure ulcers not only interfere with recovery, lengthen stays, and cause pain, but they also place patients at risk for infection and even death. The Institute for Healthcare Improvement (IHI) estimates nearly 1 million people develop pressure ulcers each year, with some 60,000 deaths from related complications. The cost of treatment ranges up to \$11 billion annually.

To combat pressure ulcers, hospitals are requiring skin screenings of all incoming patients. They are using visual examinations, ultrasound, and other technologies to identify damaged skin. In some cases, they are photographing skin to document its condition from day-to-day.

Perioperative challenges

The incidence of pressure ulcers in surgical patients varies from 19% to 66%, according to research by Nancy Stotts, RN, EdD, of the University of California, San Francisco, an expert on pressure ulcers, and others. Most of these are Stage I, with fewer than 10% being Stage II or higher.

It is difficult to determine what percentage of pressure ulcers begin during surgery because many that originate in the OR do not appear until 1 to 4 days postoperatively. Challenges in preventing pressure ulcers in the OR include:

- patients under anesthesia
- long periods of immobility
- inability of patients to perceive pain and discomfort
- inability to access patients' skin because of sterile drapes.

A literature review by Alyce Schultz, RN, PhD, FAAN, identified these risk factors for surgical patients:

- diabetes
- vascular disease
- decreased blood pressure
- advanced age
- increased body temperature
- poor nutrition
- thinness or small stature
- use of a warming blanket.

Identifying patients at risk for skin breakdown in the OR is the first line of defense. The second is using pressure-reducing mattresses, pads, and positioners.

AORN's recommended practices for patient positioning note that several studies indicate that procedures longer than 2½ to 3 hours "significantly increase the patient's risk for pressure ulcer formation."

OR Manager asked nurses from 2 successful prevention programs about measures they are taking to reduce the risk of perioperative pressure ulcers. OSF Saint Francis Medical Center in Peoria, Illinois, has reduced the rate of hospital-acquired pressure ulcers from 9.4% in 2002 to 1.5% in December 2006, where it remains.

Risk assessment for pressure ulcers in the OR

Potential causes for increased risk

Anemia: hematocrit <20
 Anemia: hemoglobin <9
 Arthritic
 Cardiac disease
 Contractures
 Diabetic
 Edema 2+
 Gastric band/bypass surgery
 General anesthesia
 Heart/vascular surgery
 Nursing home resident
 Immunosuppressed
 Lateral position
 Neurological surgery
 OR >2 hours
 Oxygen
 Paraplegic
 Physical limitations
 Quadriplegic
 Total hip/knee replacement
 Elevated white blood cell count
 Incontinence

Additional risk factors

Age 80 years or more
 Infant <38 weeks
 Infant >42 weeks
 Fecal incontinence
 Insulin-dependent diabetic
 Low albumin
 Not applicable
 Obese >300 lbs
 OR >4 hours
 Severe emaciation
 Systolic blood pressure <60
 Temperature >101°F

Source: OSF Saint Francis Medical Center.

The New Jersey Hospital Association partnered with 150 hospitals, nursing homes, and home care agencies in a statewide collaborative to reduce the incidence of new pressure ulcers by 70% as of August 2007.

Save Our Skin

Every 2 hours at OSF Saint Francis, Olympics-style theme music signals staff to reposition patients. The signal is part of the hospital's prevention protocol.

The staff needs to understand the impact of pressure ulcers on patients and the cost to the hospital, says Anne Krup, RN, OSF Saint Francis's director of surgical services.

The hospital formed an SOS team—for Save Our Skin—in 2002 as part of a Six Sigma project to lower its rate of pressure ulcers. The Six Sigma team implemented the following tools and processes:

- **Protocol for skin breakdown prevention.** The protocol incorporates best practices from the Agency for Healthcare Research and Quality and the Wound, Ostomy, and Continence Nurses Society.
- **Braden Scale for Predicting Pressure Sore Risk.** The clinically validated scale is used to assess all adult patients on admission and every 24 hours afterwards. The skin breakdown prevention protocol is initiated for any patient with a Braden score of 18 or less. The protocol includes placing an SOS sign on patients' doors and charts. Total skin assessment is performed every 24 hours. If a pressure ulcer

is found, it is staged and documented. If there is no documentation within 24 hours of admission, the pressure ulcer is considered hospital acquired.

- **Use of pressure redistribution mattresses.** The mattresses are placed under all adult patients. A low-air-loss mattress/bed is ordered if the patient has an existing Stage III or IV pressure ulcer.
- **Audible reminders to turn patients.** In addition to the musical cue every 2 hours, nurses receive a page every 2 hours reminding them to turn and reposition their patients. A lift team covers the hospital around the clock to help mobilize patients.

“When the music plays, everybody in the hospital knows it is time to turn the patients,” says Krup. “There are 3 nurses who are very passionate about this and make sure this guideline is followed.”

- **Preoperative assessment.** Patients are assessed for pressure ulcer risk preoperatively. Those at risk have an SOS sticker placed on their chart to remind nurses to take precautions.
- **SOS champions.** Each unit has an SOS champion who is the resource on skin care. Champions assist in unit data collection and reports.
- **Pressure ulcers reported as “never events.”** Stage III and IV ulcers are deemed events that should never happen to a patient at OSF Saint Francis.

The protocol has helped OSF Saint Francis achieve its goal of decreasing the number of hospital-acquired pressure ulcers by 50% in the first 6 months, with an estimated cost reduction from \$4.9 million to \$2.4 million.

“Once the numbers started going down, and the staff saw they were making a difference, the response was unbelievable,” says Krup. “Everyone became involved. No one wanted a pressure ulcer blamed on his or her unit. It is very gratifying for the nurses who are involved.”

A perioperative champion

“The first thing you must have for a program to succeed is a champion,” says Krup. She credits Erin Hunsley, RN, CAPP, a nurse in the preoperative holding area, for success in perioperative services.

Hunsley uses a perioperative risk assessment tool to gather information on surgical patients (sidebar). Nurses begin filling out the assessment in the preoperative holding area for AM admissions. Inpatients are assessed in the admissions unit.

If a patient has 3 or more risk factors, an SOS sticker is placed on the chart. Examples of 3 risks are general anesthesia, surgery expected to last 5 hours or more, and arthritis. The SOS sticker alerts OR nursing staff to the patient’s risk, though all OR patients are treated as if they are at risk. All OR beds have pressure ulcer prevention mattresses, and all patients have extra padding on bony prominences and pressure areas. OR nurses document all positioning aids and padding.

When patients arrive in the postanesthesia care unit (PACU), the nurses check their skin for areas indicating pressure and document any reddened areas.

Hunsley reviews all patient charts postoperatively and compiles a report on any patient with skin breakdown who was cared for in the OR. She presents the report quarterly at Six Sigma and management team meetings.

New Jersey collaborative

In the New Jersey collaborative, each participating facility formed a multidisciplinary committee to lead the new pressure ulcer prevention initiative. The collaborative used a rapid-change process guided by evidence-based practices to spread change. The goal was breakthrough improvements in the quality of care within 12 months.

Morristown Memorial Hospital, Morristown, New Jersey, a member of Atlantic Health, joined the collaborative in 2005. The Level II trauma center is designated as a magnet hospital for excellence in nursing. One goal was to standardize practices, including education of staff and patients and data collection. Data was collected on 6 pressure ulcer prevention indicators:

- skin assessment within 8 hours

- nutritional consult/dysphasia consult
- initiation of prevention measures within 24 hours for at-risk patients
- Braden Scale risk assessment within 8 hours of admission and daily
- prevalence rate of pressure ulcers, both present on admission and facility acquired.

Data was collected monthly and results communicated to the collaborative, nurse managers, and staff.

Morristown Memorial created a Pressure Ulcer Committee, which developed action plans based on the hospital's monthly and quarterly prevalence rates. The effort was guided by Janet Doyle Munoz, RN, BSN, CWON, and Toni McTigue, APRN, BC, CWON, wound-contenance-ostomy clinicians. One of the committee's initiatives was staff education, including the OR and emergency department staff, who were instructed on pressure ulcer identification and prevention.

Looking for common themes

The committee analyzed data from multiple root cause analyses looking for common themes among patients who developed facility-acquired pressure ulcers. One area of concern was the OR.

"We contacted the OR clinical coordinators and were given a tour of the OR, which included positioning of the patient, OR table surfaces, and use of positioning devices," says Munoz.

One thing they noted was that cardiac surgery patients were placed on plastic warming blankets to prevent hypothermia. There have been reports that warming blankets placed under patients can increase the risk of pressure ulcer development, McTigue notes.

Munoz and McTigue discussed the risks with the OR manager and director of anesthesia services and recommended changing to a soft, full-length warming device when the device must be placed under the patient. They also recommended using forced-air warming blankets when the device can be placed over the patient. Other improvements identified were using a heel-lift boot or pillow instead of foam pads to protect patients' heels and purchasing new gel pads for the OR tables to help redistribute pressure.

Munoz advises OR managers to partner with wound-ostomy-contenance nurses when setting up a prevention program. These specialists can provide staff education, be a resource on best practices for preventing pressure ulcers, and help standardize practice in the OR. ♦

—Judith M. Mathias, RN, MA

References

- Agency for Healthcare Research and Quality. Clinical Practice Guidelines. No. 3: Pressure ulcers in adults: prediction and prevention, and No. 15: Treatment of pressure ulcers. www.ahrq.gov
- Agency for Healthcare Research and Quality. Prevention of pressure ulcers in older patients. In *Making Health Care Safer: A Critical Analysis of Patient Safety Practices*. Chapter 27. www.ahrq.gov/clinic/ptsafety/chap27.htm
- Aronovitch S A. Intraoperatively acquired pressure ulcers: Are there common risk factors? *Ostomy Wound Manage*. 2007; 53:57-69.
- Association of periOperative Registered Nurses. Recommended practices for positioning the patient in the perioperative practice setting. In *2007 Standards, Recommended Practices, and Guidelines*. Denver: AORN, 2007. www.aorn.org
- Duncan K D. Preventing pressure ulcers: The goal is zero. *Joint Comm J Qual Patient Saf*. 2007;33:605-610.
- ECRI Institute. Pressure ulcers. *Healthcare Risk Control*. 2006; 3:1-20.
- Griffin B, Cooper H, Horack C, et al. Reducing harm from pressure ulcers. *Nurs Manage*. 2007;38(9):29-32. www.nursingmanagement.com

Institute for Healthcare Improvement. *Relieve the Pressure and Reduce Harm*. May 21, 2007. www.ihl.org. www.qualityforum.org

Joint Commission. Questions about Goal 14: Pressure ulcer prevention. *2007 National Patient Safety Goals*. www.jointcommission.org. Look under Patient Safety, then National Patient Safety Goals, then Frequently Asked Questions.

Reddy M, Gill S S, Rochon P A. Prevent-ing pressure ulcers: A systematic review. *JAMA*. 2006;296:974-984.

Schultz A. Predicting and preventing pressure ulcers in surgical patients. *AORN J*. 2005;81:986-1006.

Stotts N. Predicting pressure ulcer risk. *Am J Nurs*. 2007;107:40-48.

Stotts N. Risk of pressure ulcer development in surgical patients: A review of the literature. *Adv Wound Care*. 1999; 12:127-136.

Wound, Ostomy and Continence Nurses Society. Guidelines for Prevention and Management of Pressure Ulcers. Glenview, IL: WOCN Society, 2003. www.wocn.org

Pressure ulcer stages

In February 2007, the National Pressure Ulcer Advisory Panel (NPUAP) updated its definition of the stages used to diagnose pressure ulcers:

Suspected deep tissue injury

Localized purple or maroon discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. Discolored skin may be difficult to detect in those with dark skin tones.

Stage I

Localized nonblanchable, red intact skin, usually over a bony prominence.

Stage II

Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed or intact/ruptured serum-filled blister.

Stage III

Full-thickness loss of tissue with subcutaneous fat possibly exposed but no exposure of bone, tendon, or muscle.

Stage IV

Full-thickness loss of tissue with exposure of bone, tendon, or muscle.

Unstageable

Full-thickness loss of tissue in which the ulcer bed is covered with slough (yellow, tan, gray, green, or brown) and/or eschar (tan, brown, or black). Until enough slough and/or eschar is removed, the true stage cannot be determined.

Information is available at www.npuap.org/pr2.htm.

Make it easy to comply

A pressure ulcer prevention protocol must be streamlined to ensure staff compliance. Advice from OSF Saint Francis Medical Center:

- Use pressure-reducing mattresses under all adult patients and use all-in-one incontinence wipes.
- Reposition patients on the even hours with a musical cue.
- Make the initiative visible. Publish quarterly data for everyone to see, with an action plan for meeting the target.

- Select champions on each unit to provide knowledge and support.
 - Tell the success story: Publish results and mentor other hospitals.
-

OR pressure prevention products

Action Products, Inc

Hagerstown, Maryland

OR pads and positioners made from Akton dry viscoelastic polymer

www.actionproducts.com

Cardinal Health

Dublin, Ohio

OR armboard and table pads

[www.cardinal.com/mps/catalog/ASP/50676-378.asp?](http://www.cardinal.com/mps/catalog/ASP/50676-378.asp?cat=surgerycenter&mfr=Span-America)

[cat=surgerycenter&mfr=Span-America](http://www.cardinal.com/mps/catalog/ASP/50676-378.asp?cat=surgerycenter&mfr=Span-America)

Cincinnati Sub-Zero

Cincinnati, Ohio

Gelli-Roll temperature management and pressure reduction surface

www.cszmedical.com

DM Systems, Inc

Evanston, Illinois

Offloading heelless boots

www.dmsystems.com/woundcare.html

Hill-Rom, Inc

Batesville, Indiana

ComfortFlair pressure ulcer prevention mattress

www.hill-rom.com/USA/ComfortFlair.htm

Kinetic Concepts, Inc (KCI)

San Antonio, Texas

RIK Fluid Operating Table Pad

www.kci1.com/477.asp

Steris

Mentor, Ohio

AquaGel positioners

www.steris.com/healthcare/view_product_page.cfm?productid=2904