Turning and repositioning patients who are morbidly obese

Training, teamwork, and the right equipment can prevent pressure injuries.

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PRESSURE INJURES (PIs) are associated with increased length of hospital stay, high healthcare costs, and poor patient outcomes. Although many factors contribute to PI risk, morbid obesity (body mass index [BMI] > 40) is a significant and independent risk factor. Simple steps—such as turning and repositioning—that effectively reduce PI development in most patients are more challenging with patients who are obese.

Barriers to adopting new technology as well as a lack of resources, training, and special equipment to aid in turning and repositioning large patients can prevent nurses and other healthcare workers from providing the best possible care. However, a willingness to analyze the gaps in care and push for needed tools can help nurses keep these patient safe.

Understanding the pathophysiology

Patients who are morbidly obese are at risk for tissue injury, infections, and altered skin integrity because of abnormal adipose tissue distribution and skin physiology changes. As adipose tissue grows and multiplies, the density of the capillaries supplying the tissue doesn't proportionally increase. Vascular insufficiencies that develop throughout the undernourished tissue can lead to tissue necrosis.

The increased size and weight of patients who are obese is strongly correlated to mobility limitations and predisposes them to remain sedentary for extended periods. These functional limitations contribute to prolonged compression of skin and underlying tissue with an already weakened vascular status. Without repositioning relief, significant skin and tissue damage results.

Patient care challenges

Adhering to turning and repositioning schedules is difficult in busy inpatient settings, but the weight and size of patients who are morbidly obese can make turning them even more difficult. In some cases, nurses have tried to do the best they can with limited resources and equipment. However, these "MacGyver" solutions can be harmful. (See *A damaging "solution."*)

Reducing PI risk

Using ad hoc solutions and inappropriate equipment is unacceptable. Clinicians are charged with using best practices to deliver quality care. For PI prevention, this means adopting proven techniques (such as proper-size beds and turn wedges) and using new technologies (such as wearable sensors) that are proven to reduce PI incidence. (See *Checklist: What you need to care for obese patients.*) PIs are largely preventable if hospitals do three things:

- Train staff to take a team approach to caring for and repositioning patients who are obese.
- Make special equipment (bariatric beds, lifts, and

wedges) designed to accommodate large patients readily available. Hospitals typically can rent bariatric beds when needed, but wedges need to be purchased.
- Deploy technology that clearly informs nurses when a patient turn is adequate for reperfusion and when the patient must be repositioned.

Training and teamwork

Nursing staff must be informed of the best practices and current evidence-based guidelines for PI prevention. Patient turning to prevent PIs has evolved through research and clinical practice into a tried-and-true standard of care and is a key recommendation in all major PI guidelines, including those from the National Pressure Ulcer Advisory Panel, the Institute for Healthcare Improvement, and the American College of Physicians. Repetition is the best way to keep these guidelines top of mind. Emphasize the information in safety huddles, with refresher training, and in staff meetings.

Mobilizing patients who are morbidly obese requires teamwork. Repositioning a large patient alone isn't safe. Dedicated turn teams charged with regularly repositioning intensive care unit patients have shown a dramatic decrease in hospital-acquired pressure injury (HAPI) incidence. Hospitals that aren't able to dedicate a turn team have found it helpful to have nurses and aides team up regularly throughout the shift to help each other turn patients. Appropriate equipment should be used for turning and lifting to avoid injury to both patients and staff. Brainstorming best practice strategies can help care teams get this important work done safely and effectively while fostering a culture of teamwork.

A damaging "solution"

A 56-year-old man weighing 550 lb (227 kg) with a body mass index of 77 was admitted to the intensive care unit of a community hospital for acute respiratory failure on a weekend, when hospital routines often differ from weekday norms.

The patient's per diem nurse wasn't familiar with the facility's specialty bed algorithm, so she didn't place him in the proper-size bariatric bed. He was assessed for pressure injury (PI) risk using the Braden Scale and scored 13 (high risk), which requires regular turning and repositioning to prevent PIs.

When the nurses on duty had difficulty turning the patient in the inappropriate-size bed, one nurse decided to use the bed's turn-assist button, which inflates one side of the bed, tilts the patient, and then deflates. The patient appeared to be moving, so the nurse assumed he was being shifted enough to satisfy the turning protocol. This procedure was repeated several times, but it never truly offloaded the patient. In addition, the unit had run out of bariatric wedges, so the staff used pillows to reposition the patient, but his body was too heavy for the pillows to help. They became compressed and only minimally altered his position.

Three days later, a deep-tissue pressure injury (DTPI) began to develop on the patient's sacrum. DTPIs typically are caused by pressure and shear forces. The inappropriate use of the bed's turn-assist feature created shear forces and failed to offload the patient's tissue, which was undergoing extensive ischemic insult. Turn-assist features are designed to facilitate proper turning; they don't replace the need for offloading and repositioning.

Equipped for success

Appropriate equipment, combined with adequate-size patient rooms and necessary personnel, is essential for safe and effective repositioning. A ceiling lift system with slings allows for safe patient handling and saves space. Bariatric beds provide enough space for safe and comfortable turning. Patients with a BMI > 35 who are unable to laterally reposition themselves should be placed on a wide bed. All patients whose BMI exceeds 45 should be placed on a wide bed, regardless of their mobility.

Specialty surfaces, such as low-air–loss beds or pressure-redistributing mattresses, can help reduce PI risk, but they don't adequately offload tissues that have been exposed to pressure-induced ischemia; additional manual repositioning is necessary. Large patients need bariatric wedges in conjunction with a high-quality turn to ensure continued offloading for tissue reperfusion. Without the wedges, patients who have been turned are likely to return to their former position, reinjure ischemic tissue, and negate the time and effort the staff put into achieving the turn.

When choosing which wedges to use, note that not all bariatric wedges are created equal. Hospitals should stock bariatric wedges with increased height not length to facilitate a sufficient turn angle without putting more pressure on the sacrum. Sometimes, this may entail turning the wedge to the steeper angle to achieve the recommended 30-degree turn for tissue reperfusion.

Checklist: What you need to care for obese patients

- ☐ Ensure that the hospital has a safe patient handling plan:
  - Assess each patient to determine:
    - level of assistance needed, number of people required to turn
    - weight-bearing capacity
    - specialty surface, bariatric bed, or patient lift needs
    - cardiopulmonary or orthopedic challenges.
  - Develop a repositioning strategy that includes an adequate number of team members.
  - Train staff and empower them to make decisions about selecting equipment and ensuring a sufficient number of staff are present to mobilize patients.
  - Preserve patient dignity.
- ☐ Ensure that the hospital has necessary space and equipment readily available:
  - Appropriate-size bed based on a

patient's body mass index. Note the dimensions (length and width) of the support surface as they relate to the patient's height and girth. If the patient will be mobilized, such as from sitting on the side of the bed to standing or walking, make sure the height of the bed is safe for patient's egress.
  - Adequate space in patient room for equipment (wider bed, mechanical lifts) and personnel (up to six people).
  - Ceiling lifts with slings, draw sheets, other assistive equipment to help achieve and maintain a lateral patient position. **Note: Nothing (such as specialty beds, turn-assist features, pneumatic tilt, and differential baffle inflation) replaces the need for offloading tissues, especially of the sacrum or coccyx.**
  - Bariatric wedges of increased height, not just length, with more dense material or enough stability to keep patient repositioned. Large patients are wider and heavier, not necessarily taller, requiring turn wedges that are deeper to accommodate their size and supportive enough to comfortably support their weight.
- ☐ Implement wireless patient monitoring technology to cue and remind staff when patients are due for repositioning. Monitoring systems optimize patient turning, reduce hospital-acquired pressure injuries, and help foster teamwork.

Monitoring technology

A patient-monitoring system with wearable, wireless sensors has been shown to increase turning performance and significantly decrease HAPI occurrence in critical care patients. This technology helps clinicians track patient movement and alerts them when patients need assistance turning. It takes the guesswork out of turning by notifying staff when a turn is adequate for offloading and how long a patient must remain off tissue that's been exposed to pressure.

No substitute for good communication

Regardless of what tools are available, clear and effective communication among staff and between staff and patients is critical to protecting patients who are morbidly obese from HAPIs.

Periodic meetings to reevaluate safe handling procedures specifically for large patients and timely staff updates help maintain an evidence-based HAPI prevention program. If few patients who are morbidly obese are admitted, staff might benefit from periodic refresher courses to practice and review safe patient handling skills.

Effective solutions

PIs are the most costly hospital-acquired conditions throughout the U.S. healthcare system, and the unreimbursed, incremental cost of treating just one average partial- to full-thickness PI can exceed $100,000. The consensus among experts is that most HAPIs are preventable. When considering the challenges of mobilizing patients who are morbidly obese, effective PI prevention solutions require taking a team approach and addressing equipment, resources, and training issues. ★

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