# Diagnosis, Management, and Prevention of Pressure Ulcers

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#### **KEYWORDS**

- Pressure ulcer Staging Braden scale Norton Bates-Jensen Repositioning
- Support surfaces Hospital-acquired condition

#### HOSPITAL MEDICINE CLINICS CHECKLIST

- 1. Recognize that pressure ulcers are common and costly in acute care settings. More than 2.5 million pressure ulcers are treated annually, with an estimated incidence of 0.4% to 38% and prevalence of 10% to 18% in acute care settings within the United States, with a cost between \$2.2 and \$3.6 billion.
- The Centers for Medicare and Medicaid Services do not reimburse hospitals for Stage 3 or 4 pressure ulcers that develop during a patient's hospitalization; therefore, focusing on preventive strategies is crucial.
- 3. Implement the International NPUAP-EPUAP (National Pressure Ulcer Advisory Panel/European Pressure Ulcer Advisory Panel) classification system to appropriately stage pressure ulcers. This system categorizes pressure ulcers from Stages 1 to 4 with additional categories for "unstageable" ulcers and "deep tissue injury."
- Common locations for pressure ulcers include the coccyx, sacrum, heel, ischial tuberosities, occiput, toes, and elbows. Careful attention should be paid to these areas.
- 5. Risk assessment should be performed on admission and any time there is a change in the patient's clinical condition. There is no evidence to suggest that risk-assessment tools are superior to clinical judgment alone; however, most clinical guidelines recommend using them as an adjunct.
- 6. Interventions that focus on preventing pressure ulcers are cost-effective and lead to improved outcomes. Evidence-based interventions include frequent repositioning if patients are unable to do so themselves, implementing high-specification foam mattresses or overlays instead of standard hospital

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mattresses, optimizing nutrition, and administering appropriate skin care in high-risk individuals.

- 7. There are limited evidence-based interventions for the treatment of pressure ulcers. Most treatment guidelines recommend proper cleansing of the ulcer, application of dressings that are appropriate for the amount of exudate present, debridement of necrotic tissue, and the use of support surfaces and repositioning to promote healing. There are insufficient data regarding whether adjunctive therapies (vacuum therapy, hyperbaric oxygen therapy, laser therapy, therapeutic ultrasound, and electrotherapy) improve the healing of pressure ulcers.
- Healing tools for pressure ulcers (ie, Bates-Jensen Wound Assessment Tool
  and Pressure Ulcer Scaling for Healing) may be useful in monitoring the healing
  of pressure ulcers over time. The practice of reverse-staging or down-staging
  has fallen out of practice.
- 9. Pressure ulcers that do not show evidence of healing within 2 weeks should raise suspicion for infection.

#### **BACKGROUND AND DEFINITION**

1. What is the definition of a pressure ulcer?

A pressure ulcer is defined as localized injury to the skin and underlying soft tissue, typically overlying a bony prominence, which occurs in response to external pressure or pressure in combination with shear. The degree of injury may range from nonblanching erythema to full-thickness tissue loss with exposed muscle, tendon, and bone.

#### **EPIDEMIOLOGY**

1. How common are pressure ulcers in the acute care setting?

Approximately 2.5 million pressure ulcers are treated annually in acute care settings in the United States.<sup>2</sup> The incidence in hospitalized patients is estimated to be between 0.4% and 38% and the prevalence between 10% and 18%.<sup>3</sup> Preliminary data from a study in 2004 designed to measure the incidence and prevalence of pressure ulcers in acute care settings and intensive care units in the United States demonstrated an incidence rate of 7% and a prevalence rate of 16%.<sup>4</sup> This wide range in the estimated incidence and prevalence is attributable to differences in study methodology, formulas used to calculate incidence and prevalence rates, and staging definitions. In addition, because many pressure ulcers that are present on admission are not consistently documented, studies that rely on chart review rather than on direct patient examination are prone to error when determining incidence and prevalence. These data should thus be interpreted with caution.<sup>3</sup>

A review of community-based hospital coding practices conducted by the Agency for Healthcare Research and Quality in 2006 revealed that pressure ulcers were present in more than 500,000 hospitalizations in the United States. Most of the pressure ulcers (>90%) were coded as secondary diagnoses with primary diagnoses of septicemia, urinary tract infection, and pneumonia. Nearly 75% of patients with a pressure ulcer as a secondary diagnosis were older than 65 years, and just over half of the patients with a primary diagnosis of a pressure ulcer were older than 65. In patients

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