NPUAP Mission

The National Pressure Ulcer Advisory Panel (NPUAP) serves as the authoritative voice for improved patient outcomes in pressure ulcer prevention and treatment through public policy, education and research.

International Guideline

NPUAP – in collaboration with the European Pressure Ulcer Advisory Panel (EPUAP) and the Pan Pacific Pressure Injury Alliance (PPPIA) – has worked to develop a NEW pressure ulcer prevention and treatment Clinical Practice Guideline and a companion Quick Reference Guide.

Purchase your copy today at www.npuap.org
NPUAP Monograph

Released in November 2012, the 254-page, 24 chapter monograph, Pressure Ulcers: Prevalence, Incidence and Implications for the Future was authored by 27 experts from NPUAP and invited authorities and edited by NPUAP Alumna Dr. Barbara Pieper.

The monograph focuses on pressure ulcer rates from all clinical settings and populations; rates in special populations; a review of pressure ulcer prevention programs; and a discussion of the state of pressure ulcers in America over the last decade.

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- E-version $49
- Individual Chapters $19

Save the date
NPUAP Live Webinar!

November 19, 2015
1:00 PM ET

History of Wound Care & Pressure Ulcers: Past, Present & Future

Jeffrey Levine MD
Save the date

NPUAP

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Pressure Ulcer Prevention in Vulnerable Elders

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Faculty Disclosures

Steven Antokal, RN, BSN, CWCN, CCCN, DAPWC
–No disclosures

Aimee Garcia, MD, CWS, FACCWS
–No disclosures

No conflicts exist with either presenter.

Objectives

› Discuss the demographics of an aging population
› Identify skin changes that put elders at risk for pressure ulcer development
› List regulatory guidelines specific to vulnerable elders
BACKGROUND

- Incidence
  - Elderly
  - Spinal Cord Injury

- Population Description
  - “The Aging Imperative”

By 2030,

There will be 71 million American older adults accounting for roughly 20% of the U.S. population.

The nation’s health care spending is projected to increase by 25% due to these demographic shifts.

The State of Aging and Health in America; CDC 2007
Epidemiology of Aging

- US – 3rd largest population over the age of 60
  - 2nd only to China in elderly over 80
- Diversity of aging
  - Ethnic disparities
- Increase in frailty, chronic co-morbidities and disability

Pressure ulcers in the Elderly

- Frailty
- Malnutrition
- Co-morbidities
- Immobility
- Dementia

Significance

- European pilot study
  - 5947 patients in Belgium, Italy, Portugal, Sweden and UK
  - Overall prevalence 18.1%

- NPUAP (2001)
  - Prevalence 15.1%, incidence of 7% in US hospitals

Pressure Ulcers in America: prevalence, incidence and implications for the future.

Cost

- Overall impact
  - US 1.2% of total health care expenditure
  - UK 4% of total health care expenditure
  - Netherlands 1% of total health care expenditure

- 2006 Cost Data
  - Estimated cost to heal a single pressure ulcer range from $3,500 to $60,000

- Legal Issues
  - More than 17,000 lawsuits filed annually
  - Average $250,000 per judgment

Figure 1. Between 1993 and 2006, the total number of hospitalizations related to pressure ulcers increased by nearly 80 percent.

Excludes hospital days for both adults and children less than 17 years old.


http://www.hcup-us.ahrq.gov/reports/statbriefs/sb64.jsp

Aging Skin
Aging Skin

The Aging Skin

- Dermis
  - Site of most major changes
  - Becomes relatively acellular, avascular and less dense
- Types
  - Intrinsic
    - Changes due to mature aging
  - Extrinsic
    - UV exposure, smoking, environmental pollutants

Fisher GJ. “The Pathophysiology of Photoaging of the Skin.” Cutis, 2005 Feb;75(2S):5-9
Aging Skin

- Decrease dermal–epidermal turnover
- Decreased subcutaneous fat deposition
- Decreased elastin
- Decreased cutaneous microvasculature
- Flattening of the rete ridges
- Decreased mitotic activity
- Thinning of epidermis 10–50%
- Atrophy of stratum spinosum
- Slow replacement of lipids

Table 1.
CHANGES IN THE SKIN THAT OCCUR WITH NORMAL AGING

<table>
<thead>
<tr>
<th>Structural changes</th>
<th>Skin dryness, roughness, wrinkling, and laxity increase; skin elasticity decreases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional changes</td>
<td>Skin barrier function, mechanical protection, sensory perception, wound healing, immunologic responsiveness, thermoregulation, and vitamin D production decline¹²</td>
</tr>
</tbody>
</table>

Zouboulis CC, Makrantonaki M. Structural aspects and molecular diagnostics of aging skin. Clinics in Dermatology (2011); 29: 3-14.
Barrier function of skin

- pH

- Dryness
  - Sebaceous glands produce less oil
    - Men >80
    - Women– after menopause

- Immune function
Acid Mantle

- Normal pH in adults
- pH increases with aging
  - Regulated by amino acids
  - Important for:
    - Integrity and cohesion of the stratum corneum
    - Homeostasis of the epidermal barrier
    - Antimicrobial effect
- Changes are both Endogenous and Exogenous

Changes to Acid Mantle

- Endogenous
  - Age
  - Gender
  - Ethnicity
- Exogenous
  - Skin cleansers
  - Skin care products
Immune Function

- Decrease in Langerhan’s cells
  - 1% annual decline

- Decreased response to TNF-α induced migration

- Increased propensity for skin infection in the elderly
  - MRSA has its optimum growth at pH 7.5
  - Antimicrobial peptides develop their antimicrobial activity only at acidic pH

Norman, RA. Geriatric Dermatology; 2001.

Chronic vs. Acute

- Chronic wound – loss in tissue integrity produced by insult or injury that is extended in duration or frequent recurrence.
  - The wound does not progress in the orderly healing pathway in an expected time frame
  - >3 months

- Acute wound – one in which simple medical or surgical intervention produces a resolution
  - The wound progresses through the healing process in a timely and uneventful manner
Effects of Ageing on Wound Healing

A. Response in elderly

- Epithelialization
- Migration
- Proliferation
- Inflammation
- Matrix (collagen & fibrinectin)

B. Response in young

- Epithelialization
- MMP-2/9
- Elastase
- Inflammation
- Matrix

Figure 1. Ageing is associated with delayed epithelialization resulting from impaired migration and proliferation, excessive inflammation leading to increased levels of proteases (MMPs, elastase) and matrix degradation. Reduced fibroblast proliferation and response to specific cytokines (e.g., TGF-β1, EGF) results in reduced matrix production, compounding the excessive degradation at the wound site.

What do these changes mean?

- The elderly are more susceptible to skin breakdown
- Risk needs to be assessed early
- Preventive strategies need to be put in place to attenuate risk for pressure ulcer development

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Pressure Ulcers in the vulnerable elderly

- Regulatory implications specific to the long term care environment.
- Federal Tag 314
- Implications for practice.

F-314 is specific to pressure ulcer prevention and treatment

- Pressure ulcer—Any lesion caused by Unrelieved pressure that results in damage to underlying tissue
- Were risk factors identified / evaluated.
- Could any identified risk factors be removed, modified or stabilized?
- Have all areas at risk of constant pressure been evaluated and identified
Avoidable vs. Unavoidable

Avoidable – A resident developed a pressure ulcer, the facility did not do ONE or more of the following:

- Evaluate clinical condition and risk factors for ulcer development
- Define and implement interventions that are consistent with resident needs, goals, standards of practice
- Monitor interventions or revise as appropriate

The resident developed a pressure ulcer even though the facility had evaluated the residents clinical condition, pressure ulcer risk factors, defined and implemented interventions that were consistent with the resident’s needs, goals and recognized standards of care

The facility had monitored and evaluated the impact of the interventions and revised the approaches as appropriate
Assessment/ The first part of prevention

- Admission assessment defines initial care plan approaches to prevent pressure ulcers
- At risk residents can develop a pressure ulcer within 2–6 hours of the onset of pressure
- Admission evaluation may identify deep tissue damage that may have occurred. This may result in an unavoidable ulcer.
- Comprehensive assessment should identify and address those factors that have an impact on the development, treatment and or healing potential of pressure ulcers.

Risk Factors

- Some residents may have many risk factors for developing ulcers (Diabetes, frailty, cognitive impairment, malnutrition)
- Not all factors are fully modifiable.
- Some potentially modifiable factors may not be able to be corrected immediately (malnutrition) despite prompt intervention
- Factors such as Pressure may be able to be modified promptly
Risk Factors

- Standardized pressure ulcer risk assessment tool upon admission.
- Possibly more often, research shows that a significant number of ulcers develop within the first 4 weeks of admission.
- Regardless of total risk score clinicians should review each risk factor that increases the potential for developing pressure ulcers individually.
- Can risk factors be Modified, Stabilized or Removed.

Pressure Points and Tissue Tolerance

- Evaluation should include the residents skin integrity and tissue tolerance.
- Tissue tolerance is the ability of the skin and supporting structures to endure the effects of pressure without adverse effects.
- Tolerance is evaluated after pressure to an area has been reduced or redistributed.
- Important for clinical staff to regularly conduct skin assessments on each resident who is at risk for developing pressure ulcers.
**Under Nutrition and Hydration Deficits**

- Weight loss and failure of an ulcer to heal may indicate multi-system failure or an end stage or end of life condition.
- Resident specific summary is recommended to include severity of compromise, rate of weight loss or appetite decline, and any probable causes.
- Goals and approaches should reflect the whole person.
- No laboratory test is specific or sensitive enough to warrant serial/ repeated testing.
- A simple multivitamin is appropriate unless specific vitamin/mineral deficiency is detected.

**Moisture and its impact**

- Some studies find fecal incontinence poses a greater risk to skin integrity due to bile acids and enzymes.
- It may be difficult to differentiate between incontinence dermatitis and pressure ulceration.
- Differentiation should be based on clinical evidence and review of risk factors.
Advanced Directives

- The presence of a “Do Not Resuscitate” order is not sufficient to indicate the resident is declining other appropriate treatments and services.
- A DNR only indicates that the resident should not be resuscitated if respirations and or cardiac function cease.
- Routine care includes: pressure redistribution, minimize exposure to moisture, appropriate support surface, maintain or improve nutrition and hydration when feasible.

Repositioning/Support Surfaces

- Assessment of the resident's skin after pressure has been reduced or redistributed should guide the development and implementation of a repositioning plan.
- Products such as support surfaces are likely to be more effective when used in accordance with the manufacturer's instructions.
Monitoring

- At least daily, staff should remain alert to potential changes in a resident’s skin condition and document identified changes.
- Care plans should be developed after a thorough evaluation of potential risks for pressure ulcer development.
- Care plan should be relevant and include prevention and management interventions with measurable goals.

Assessment and Treatment of Pressure Ulcers

- Each ulcer and any factors that may have influenced its development should be identified.
- The potential for additional ulcer development or ulcer deterioration should be recognized, assessed and addressed.
- Any new ulcer development suggests a need to reevaluate the current plan for prevention.
Ulcer Characteristics

- Documentation of measurements & terminology, frequency of assessment that are consistent throughout the facility.
- Daily monitoring when a complication or change is identified (redness, swelling, increased drainage).
- Whether pain, if present is being adequately controlled.

The Healing Pressure Ulcer

- Moist wound environment promotes healing
- If a pressure ulcer fails to show some evidence of healing within 2–4 weeks, the pressure ulcer (including potential complications) and the residents overall clinical condition should be reassessed.
- There should be documentation and rationale if the clinician decides to retain the current regime.
Investigative Protocol for Pressure Ulcers F–314

- To be used to determine whether ulcer is avoidable or unavoidable
- To determine the adequacy of the facilities interventions and efforts to prevent and treat pressure ulcers
- Investigative Protocol is to be used for a sampled resident having or at risk for developing a pressure ulcer

Procedures

- Review the assessment, care plan, and physician orders to identify facility interventions.
- For newly admitted residents who are either at risk or currently have pressure ulcers staff are expected to assess and provide appropriate care from the day of admission.
- Observe weather staff implement the care plan consistently over time.
Observation of Wound Care

- Observe wound care to determine if the record reflects the current status of the ulcer.
- Granulation tissue.
- Exudate.
- Necrotic tissue (Eschar/slough)
- The form of debridement used.
- Has the resident's pain been assessed & addressed.
- Are steps in place to protect the wound from contamination from urine or feces.

Resident /Staff Interviews

- Is the resident/family or responsible party involved in care.
- Are staff aware of approaches such as pressure redistribution devices, turning and positioning plans, weight shifting to prevent ulcers while sitting.
- Have staff identified, as possible, whether acute illness, weight loss or other condition changes occurred prior to developing the ulcer.
Record Review

- Review the RAI, physician orders, progress notes, nursing notes, pharmacy notes and dietary notes regarding the assessment of the residents overall condition, risk factors, and presence of pressure ulcers.
- Did the facility identify the resident at risk and evaluated the identified risk factors.

Residents admitted with an ulcer or developed an ulcer within 1–2 days.

- Review the admission documentation regarding the wound site upon admission.
- Was there a possibility of underlying tissue damage because of immobility or illness prior to admission.
- Was there a skin condition on or within a day of admission.
- Is there a presence of impaired nutrition and or a history of pressure ulcers.
Care Plan

- Did the facility develop a care plan for those residents at risk for or who already have a pressure ulcer.
- Does the plan address treatment of ulcers including specific interventions, measurable objectives and approximate time frames.
- A specific care plan intervention for risk of pressure ulcers is not needed if other components of the care plan addresses risks adequately:
- For example, The risk of skin breakdown related to incontinence may be addressed in that part of the care plan that addresses incontinence.

Determination of Compliance Part 1

- Criteria for compliance: the facility is in compliance for a resident who developed a pressure ulcer after admission if staff:
  - Recognized and assessed risk factors, including specific conditions, possible causes, potential problems, needs and behaviors
  - Defined and implemented interventions for pressure ulcer prevention
  - Monitored the residents response to interventions.
  - Revised the approaches as appropriate
  - If not, the pressure ulcer is avoidable, cite at 314
Determination of Compliance Part 2

- If the resident was admitted with a pressure ulcer, who has a pressure ulcer that is not healing or is at risk of developing a pressure ulcer the facility is in compliance if they:
  - Recognized and assessed factors placing the resident at risk for developing new pressure ulcers. Or non healing/delayed healing of an existing ulcer.
  - Defined and implemented interventions for pressure ulcer prevention and treatment.
  - Addressed the potential for infection.
  - Monitored the residents response to treatment and prevention efforts.
  - Revised approaches as appropriate.
  - If not, cite at F-314

Non Compliance for F-314

- After completing the investigative protocol, analyze the data to determine whether noncompliance exists.
- Examples of Non compliance may include the facilities failure to:
  - Accurately or consistently assess skin integrity.
  - Identify a resident at risk of pressure ulcer development.
  - Implement preventive interventions.
  - Provide clinical justification for the unavoidable development or non healing / delayed healing or deterioration of a pressure ulcer.
Non Compliance for F–314 (cont.)

- Provide appropriate interventions, care and treatment to an existing pressure ulcer to minimize infection and promote healing.
- Notify the physician of changes in the resident or pressure ulcer.
- Adequately implement pertinent infection management practices for wound care.
- Identify or know how to apply relevant policies and procedures of pressure ulcer prevention and treatment.

Potential Tags for Additional Investigation

- F–157, Notification of change
- F–272, Comprehensive assessment
- F279, Comprehensive Care Plan
- F280, Comprehensive Care Plan Revision
- F281, Services Provided meet professional standards.
- F–309, Quality of Care
- F–353, Sufficient Staffing
- F–385, Physician supervision
- F501, Medical Director
Deficiency Categorization

- The key elements for severity determination for F-314 are as follows:
  - Presence of harm/negative outcome because of lack of treatment or care
  - Potential for the development of, occurrence or recurrence of an avoidable pressure ulcer
  - Complications such as sepsis or pain related to the presence of an avoidable pressure ulcer
  - Pressure ulcers that fail to improve as anticipated or develop complications such as sepsis or pain due to lack of appropriate treatment or care
Conclusion

- Pressure ulcers remain a significant clinical problem in the elderly
- Prevention strategies should be utilized early
- Regulatory statues will continue to impact long term care

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