Disclosure

Aamir Siddiqui has listed no financial interest/arrangement that would be considered a conflict of interest
Objectives

- Development of the International Guidelines

Purpose and Scope

- Classification
- Prevention
- Treatment
- Support Surface Standards
Scope and Purpose

• Recommendations and supporting evidence for pressure ulcer prevention and treatment
• 982 stakeholders, 112 international experts, 1,235 peer reviewed articles., 2 years
• Consensus voting process (GRADE)
  – Strength of evidence (A,B,C)
  – Strength of the recommendation (1-5)

• Special Populations
  Palliative care, critical care, pediatric, operating room, bariatric, spinal cord injury, older adults
Classification

Stage 1

Stage 2
Full Thickness Damage

Stage 3

Stage 4
Other Categories

Unstageable

Deep Tissue Injury
## Incontinence Associated Dermatitis versus Pressure Ulcers

<table>
<thead>
<tr>
<th></th>
<th>IAD</th>
<th>Pressure Ulcer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usual Location</strong></td>
<td>Skin folds</td>
<td>Bony prominences</td>
</tr>
<tr>
<td><strong>Edge</strong></td>
<td>Diffuse, irregular</td>
<td>Distinct edge, well circumscribed</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Red/bright red, shiny</td>
<td>Red/bluish purple</td>
</tr>
<tr>
<td><strong>Depth</strong></td>
<td>Partial thickness</td>
<td>Partial or full</td>
</tr>
<tr>
<td><strong>Necrosis</strong></td>
<td>No</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>
Etiology
Cost of Hospital Acquired PU

- Estimates of incremental increase in LOS vary widely
  - 4.31 days – Australia
  - 11-18 days – U.S.
- U. S. 2007 Federal Spending
  - $43,180 per full-thickness pressure ulcer
  - 257,412 cases
  - 11 billion total
- No other preventable complication occurred as frequently as pressure ulcers
Best Care Guidelines

- Standardized Formulary with actual costs
  - Certified wound nurses
  - Skin care products
  - Wound care products
  - Beds
- Timed trials of various procedures (turning, continence care, dressing changes) for estimates of nursing time
- 6 month true incidence rates
Findings

- 6-month incidence was lower
  - 23% preprotocol vs 5% postprotocol
- Mean cost of prevention and treatment was lower
  - $113±$345 per subject preprotocol
  - $100±$157 per subject postprotocol
- Mean time to ulcer development was higher
  - 146±61 days preprotocol
  - 158±53 days postprotocol
Use of a Structured Risk Assessment Tool

- At (near) admission
- At regular interval
- At time of clinical change
- Include skin assessment
- Document the findings
- Develop and implement a risk based prevention plan.
- Role of clinical judgement

Strength C-1
Structured and standardized skin assessment

- Early, regularly, systematically
- Consider skin temperature and soft tissue changes
  - Localized heat, edema and change in tissue consistency in relation to surrounding tissue have all been identified as warning signs for pressure ulcer development
  - Nonblanchable erythema is visible skin redness that persists with the application of pressure. It indicates structural damage to the capillary bed/microcirculation
- Inspect around and under medical devices.

Strength C-1
Preventive Skin Care

- Inspection
- Assessment
- Moisture control
  - Incontinence
  - Microclimate
- Use of skin protectants
  Replace intercellular lipids and promote moisture barrier function of the skin
- Avoid massage to the area of concern

Strength C-1
Emerging Prevention Therapies

- Prophylactic Dressings
  Polyurethane foam dressing to bony prominences in anatomical areas frequently subjected to friction and shear

- Bedding and textiles
  use of silk-like fabrics rather than cotton or cotton-blend fabrics to reduce shear and friction

Strength B-2
Other Technologies

• Microclimate control
Active management can provide an environment conducive to prevention and tissue repair

• Electrical stimulation of muscles to prevent pressure ulcers

Strength C-2
Nutrition

• Malnutrition defined as two or more of the following characteristics:
  – Insufficient energy intake
  – Unintended weight loss
  – Loss of muscle mass
  – Loss of subcutaneous fat
  – Localized or generalized fluid accumulation
  – Decreased functional status

• Acute phase proteins cannot accurately any of these (albumin, prealbumin, transferrin)

Strength C-2
Repositioning

- 3 RCT confirm that repositioning at risk patients regularly can prevent pressure ulcers.
- Repositioning every 4 hours on an appropriate support surface is as good as every 2 hours.
- Many strategies are available to improve patient compliance, resource use, ease of implementation, record keeping.

Strength A - 1
Support surfaces

Individualized Selection

– level of immobility and inactivity;
– need for microclimate control and shear reduction;
– size and weight of the individual;
– risk for development of new pressure ulcers; and
– number, severity, and location of existing pressure ulcer

– Compatible with care setting
– Potential complications of use

Strength C - 1
Medical Device Related Pressure Ulcers

- Review and select appropriate medical devices
- Follow manufacturer’s specifications
- Regular inspection under and around devices
- Remove or replace high risk devices when medically feasible.

Strength B-1
Classification

- Do not categorize/stage pressure ulcers on mucous membranes
- Medical device related pressure ulcers should be classified according to the amount of visible tissue loss using the International NPUAP/EPUAP Pressure Ulcer Classification System

Strength B-1
Monitor Healing Progression

• Assess progress toward healing using a valid and reliable pressure ulcer assessment scale
  – Photography
  – Standard measurements
  – Validated instruments
    PUSH, BWAT, DESIGN-R
Wound Dressings Selection

- Ability to keep the wound bed moist;
- Need to address bacterial bioburden;
- Nature and volume of wound exudate;
- Condition of the tissue in the ulcer bed;
- Condition of periulcer skin;
- Ulcer size, depth and location;
- Presence of tunneling and/or undermining;
- Goals of the individual with the ulcer.

Strength C-2
Biologics in the Wound

- Biological dressing are **not** recommended for routine use.

- Consider using platelet-derived growth factors for treatment of Category/Stage III and IV pressure ulcers that have delayed healing.

- **No** other growth factors recommended

Strength B - 3
Biophysical Agents

- Electrical stimulation
  Direct contact (capacitive) electrical stimulation to facilitate wound healing in recalcitrant pressure ulcers
  
  Strength A - 3

- Negative Pressure Wound Therapy
  Significant improvement in large volume pressure ulcers
  
  Strength B - 2
Biophysical Agents II

Potential use in recalcitrant pressure ulcers

- Electromagnetic Energy (pulsed)
- Radiofrequency (pulsed)
- Ultraviolet light therapy
- Pulsed lavage

Strength C - 3
Biophysical agents III

Insufficient evidence to support use in pressure ulcer treatment

- Infrared therapy
- Laser
- Vibration therapy
- HBO/TPO
- Ultrasound
  *low frequency non contact ultrasound spray may have utility in necrotic or infected pressure ulcers

Strength C - 3
Biophysical agents IV

Evidence review suggests its use may be a detrimental to healing

Whirlpool

Strength C - 3
Surgery

- Indicated for
  - Difficult infection
  - Recalcitrant osteomyelitis
  - Extensive necrotic tissue
  - Surgery for definitive treatment
  - Appropriate perioperative and post operative planning and course.

Strength B - 2
Bariatric Individuals

• Safety issues for patients and health care workers
• Differentiate intertriginous dermatitis from Stage I and II pressure ulcers.
• Role of the nutritionist
• Appropriate bed selection
  – Surface area
  – Bottoming out
  – Temperature and moisture control

Strength C - 1
Critically Ill

- Vulnerable population
  - Highest incidence within the acute care setting 5-50%
- Culture and leadership involvement
- Define contraindication
- Strategies for mobility
  - Early mobility
  - Appropriate staffing
  - Patient safety and close monitoring
  - Small increment changes

Strength C- 2
Older Adults

- Vulnerable Skin
- Awareness more frequent skin assessment
- Early offloading and use of speciality surfaces
- Early intervention of specialty care
- Balance priorities
  Head elevation can prevent aspiration but may aggravate shear
- Atraumatic wound care

Strength C-2
Operating Room

- Recognizing the problem
- Prevention needs to begin before surgery
- Maximize controllable factors: temperature, hemodynamic, pressure point padding, postoperative repositioning
- Active alternating pressure support surfaces
- Importance of communication

Strength C-2
Palliative Care

- Prevention of and relief from suffering of the individual with life-threatening illness
- Collaboration to the extent possible to allow the individual to direct care
- Focus from active wound care to comfort and limit the impact of this wound
- Not lack of care shift the emphasis from protocols and care bundles to individual needs

Strength C-1
Pediatric

• Poorly studied population
• Sick children may have many of the same issues as sick adults
• Assessment tools, care bundles and transition plans, resources must be available
• Nutritional needs may be more difficult to interpret

Strength C-1
Spinal Cord Injury

- Lifelong continuous risk of PU development in all settings
- Early implementation of prevention program improves rehab potential, discharge from care facility and QOL
- Support surfaces for laying and sitting
- Different locations for pressure ulcers
- Offloading protocols may differ before and after a pressure ulcer forms.
- Patient education

Strength B-2
Implementation and Barriers

Organizational level
• Shared readiness of members to implement a change
• Shared belief in their collective capability to effect change

Professional level
• Strategies that relate to individual professionals
• Focus on timing and route that fits into current workflow

Strength C - 2
Engagement
Education

Different learners learn in different ways

• Bedside teaching
• Skills training
• Didactics
  – Small group
  – Large group
• Computer based
• Online education
  – Institution based
  – Third party websites

Strength C- 1
SSSI

- Sanctioned by American National Standards Institute to develop technical standards for support surfaces
- Involved with International Organization of Standardization to develop international standards
Established Standards

• Immersion
  Measure of how deep a body can sink into a support surface

• Micro-climate
  measure temperature and humidity
  2 methods
Standards in Development

- Envelopment
- Disinfection and scrub test
- Shear
- Safe Ingress and egress
- Weight capacity
- Bottoming

Input from caregivers and regulators, payers
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.

The National Pressure Ulcer Advisory Panel (NPUAP) is an independent not-for-profit professional organization dedicated to the prevention and management of pressure ulcers.
2016 APRIL 8-9 STAGING CONSENSUS CONFERENCE

CHICAGO

Hilton Rosemont/Chicago O’Hare Hotel

Save the date! STAY TUNED AT www.npuap.org