Pressure Ulcer Prevention and Management

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Nutrition and Tissue Viability
Objectives

• An understanding of how pressure ulcers develop and what can be done to prevent and manage them

• An understanding of the education and support that can be provided to patients to help them manage their own risk of pressure ulcers

• An understanding of every trained nurse’s professional responsibility in relation to the prevention and management of pressure ulcers
A pressure ulcer is localized injury to the skin and/or underlying tissue, usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction.

NPUAP, 2007
MAIN CAUSES OF PRESSURE ULCERATION.

• Pressure.
• A perpendicular load of force exerted on a unit of area (this could be a patient's body weight bearing down on a hip or sacrum).
• It causes local capillary occlusion (reduction in blood supply) and compresses the structures between the skin surface and bone. The damage can often be caused under the skin, but not become obvious until the skin above it has broken down.
MAIN CAUSES OF PRESSURE ULCERATION/2.

• Shearing.

• This is where pushing or pulling the skin means more than one layer of skin slides against each other and this can cause damage to these layers or they may become detached from each other all together.
Pressure and shear
MAIN CAUSES OF PRESSURE ULCERATION/3.

• Friction.
• This is where two surfaces rub together, so this could be the skin and bed sheets, or a chair cushion, etc., or poorly fitting clothing or manual handling aids. Hot, moist skin is likely to experience even more damage from friction than more healthy skin.
• POOR MANUAL HANDLING TECHNIQUES CAN RESULT IN PATIENTS EXPERIENCING ALL OF THESE FORMS OF PRESSURE AREA DAMAGE.
Friction lesions
The application of NICE guidelines: CG7 and CG29

- Health professionals are expected to take them fully into account when exercising clinical judgement
- NICE guidance does not override individual responsibility of health professionals to make decisions appropriate to the needs of the individual patient
Hints and tips on grading

• A pressure ulcer is an ulcer related to some form of pressure and should not be confused with ulcers relating to disease (like cancer), vascular flow (venous or arterial) or neuropathy (like in persons with diabetes).

• You should be able to see a “cause and effect” relating to pressure with the ulcer.
  – Redness or discoloration over a bony area related to sitting or lying
  – Redness or discoloration on the skin related to pressure from a device such as a brace or a wheelchair pedal
Pressure Ulcer Etiology

• Pressure exerted by bony prominences on the body that stop capillary flow to the tissues.
• Deprives tissues of oxygen and nutrients causing cell death.
• Pressure greater than capillary closing pressure exerted by bony prominences to disrupt blood flow.
Most Common Sites

• **Sacrum (tail bone)** - most common site
  - Semi-fowlers’ position
  - Slouching in bed or chair
  - Higher risk in tube fed or incontinent pts.

• **Heels** - 2\(^{nd}\) most common
  - Immobile or numb legs
  - Leg traction
  - Higher risk with PVD & diabetes neuropathy
Other Bony Prominences

• Trochanter (hip bone)
  - Side lying
  - Highest risk contracted residents
  - Ulcers on lateral foot rather than heel itself

• Ischium (sitting erect bone)
  - Highest risk paraplegics
Pressure Ulcers from other sources of pressure

- Boots/boot straps
- Plaster casts
- Heel protectors/protector straps
- Oxygen tubing
- Anti-Embolism Stockings
- Compression bandaging
- Any device that can lead to pressure induced ischemia on the skin
**WATERLOW PRESSURE ULCER PREVENTION/TREATMENT POLICY**

RING SCORES IN TABLE, ADD TOTAL. MORE THAN 1 SCORE/CATEGORY CAN BE USED

<table>
<thead>
<tr>
<th>BUILD/WEIGHT FOR HEIGHT</th>
<th>SKIN TYPE VISUAL RISK AREAS</th>
<th>SEX</th>
<th>AGE</th>
<th>MALNUTRITION SCREENING TOOL (MST) (Nutrition Vol.15, No.6 1999 - Australia)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVERAGE BMI = 20-24.9</td>
<td>HEALTHY</td>
<td>MALE</td>
<td>1</td>
<td>A - HAS PATIENT LOST WEIGHT RECENTLY</td>
</tr>
<tr>
<td>ABOVE AVERAGE BMI = 25-29.9</td>
<td>TISSUE PAPER</td>
<td>FEMALE</td>
<td>2</td>
<td>YES - GO TO B</td>
</tr>
<tr>
<td>OBSESE BMI &gt; 30</td>
<td>DRY</td>
<td></td>
<td>1</td>
<td>NO - GO TO C</td>
</tr>
<tr>
<td>BELOW AVERAGE BMI &lt; 20</td>
<td>OEDEMATOUS</td>
<td></td>
<td>1</td>
<td>UNSURE - GO TO C</td>
</tr>
<tr>
<td>BMI=Wt(Kg)/Ht (m)²</td>
<td>CLAMMY, PYREXIA</td>
<td></td>
<td>1</td>
<td>AND SCORE 2</td>
</tr>
<tr>
<td>CONTINENCE</td>
<td>DISCOLOURED</td>
<td></td>
<td>2</td>
<td>B - WEIGHT LOSS SCORE</td>
</tr>
<tr>
<td>MOBILITY</td>
<td>BROKEN/SPOTS GRADE 2-4</td>
<td></td>
<td>2</td>
<td>0.5 - 5kg = 1</td>
</tr>
<tr>
<td></td>
<td>75 - 80</td>
<td></td>
<td>4</td>
<td>5 - 10kg = 2</td>
</tr>
<tr>
<td></td>
<td>81 +</td>
<td></td>
<td>5</td>
<td>10 - 15kg = 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt; 15kg = 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>unsure = 2</td>
</tr>
<tr>
<td>C - PATIENT EATING POORLY</td>
<td></td>
<td></td>
<td></td>
<td>NUTRITION SCORE</td>
</tr>
<tr>
<td></td>
<td>OR LACK OF APPETITE</td>
<td></td>
<td></td>
<td>If &gt; 2 refer for nutrition assessment / intervention</td>
</tr>
<tr>
<td></td>
<td>‘NO’ = 0; ‘YES’ SCORE = 1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| CONTINENCE              | MOBILITY                    | SPECIAL RISKS | TISSUE MALNUTRITION | NEUROLOGICAL DEFICIT | MEDICATION |
| Complete/ Catheterised | Fully                       | TERMINAL CACHEXIA | 8                | DIABETES, MS, CVA  | CYTOTOXICS |
| Urine Incontinent      | Restless/Fidgety            | MULTIPLE ORGAN FAILURE | 8              | MOTOR/SENSORY     | LONG TERM |
| Faecal Incontinent     | Apathetic                   | SINGLE ORGAN FAILURE (Resp, Renal, Cardiac,) | 3               | PARAPLEGIA        | STEROIDS  |
| Urinary + Faecal Incontinence | Restricted                     | PERIPHERAL VASCULAR DISEASE | 4               | (MAX OF 6)       |             |
|                         | Bedbound e.g. Traction      | ANAEMIA (Hb < 8) | 2               | ORTHOPAEDIC/SPINAL |             |
|                         | Chairbound e.g. Wheelchair  | SMOKING | 1               | ON TABLE > 2 HR#  |             |

© J Waterlow 1985 Revised 2005
- Obtainable from the Nook, Stoke Road, Henlade TAUNTON TA3 5LX
- The 2005 revision incorporates the research undertaken by Queensland Health.

www.judy-waterlow.co.uk
Waterlow scoring points

- Intuitive scoring – higher the score, higher the risk (cf Braden for instance)

Problems
- Terminal cachexia
- Perioperative care
- Capacity and compliance of patient
Waterlow Reassessment.

• After admission, a documented reassessment should occur:
  – On transfer between ward areas.
  – During the perioperative period
  – On any change in the patient’s condition which is likely to affect their risk of developing pressure ulceration.
  – Otherwise weekly.

REMEMBER TO RECORD DISCHARGE STATUS
EPUAP grading.

• **Grade 1:** Non-blanchable erythema of intact skin. *Discolouration of the skin, warmth, oedema, induration or hardness may be indicators, particularly with darker skin.*
  – Beware BLANCHING erythema
  – Beware MOISTURE LESIONS

• **Grade 2:** Partial thickness skin loss involving epidermis, dermis, or both. The ulcer is *superficial* and presents as an abrasion or blister.
EPUAP grading/2.

- Grade 3: **Full thickness skin loss** involving damage to or necrosis of subcutaneous tissue that may extend down to, but not through, underlying fascia.

- Grade 4: **Extensive destruction, tissue necrosis or damage to muscle, bone of supporting structures**, with or without full thickness skin loss.
  - Including intact ESCHAR, especially heels.
EPUAP STAGE 1: Non-blanching.
EPUAP STAGE 2: Broken skin.
EPUAP STAGE 3: Sub-cutaneous involvement.
EPUAP STAGE 4: Deep tissue involvement.
Grading issues

- Necrosis/Slough – any pressure ulcer which has necrosis or slough where you cannot assess depth has to be graded as grade 4.
- Blisters – blisters obscure the base of the wound. De-roof, treat as a wound, and grade according to the state of the wound bed.
- If in doubt, peer review and get two nurses to countersign.
- Also, verbal descriptors in documentation and photography are necessary, and part of NICE guidance regarding pressure ulceration.
<table>
<thead>
<tr>
<th><strong>Moisture lesion</strong></th>
<th><strong>Pressure ulcer</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Causeation:</strong> Usually moisture is present.</td>
<td><strong>Causeation:</strong> Usually pressure and/or shear are present.</td>
</tr>
<tr>
<td><strong>Location:</strong> Less likely over bony prominences.</td>
<td><strong>Location:</strong> More likely over bony prominences.</td>
</tr>
<tr>
<td><strong>Shape and edge:</strong> Usually diffuse edging and shape.</td>
<td><strong>Shape and edge:</strong> Usually distinct edging and shape.</td>
</tr>
<tr>
<td><strong>Depth:</strong> Moisture lesions are rarely more than superficial.</td>
<td><strong>Depth:</strong> Pressure ulcers can be superficial or deep.</td>
</tr>
<tr>
<td><strong>Necrosis:</strong> Necrosis is never present.</td>
<td><strong>Necrosis:</strong> Necrosis may be present.</td>
</tr>
</tbody>
</table>
Assessment of pressure ulcer

Assess and document:
- cause
- site/location
- dimensions
- stage or grade
- necrosis or slough
- exudate amount and type
- local signs of infection
- pain
- wound appearance
- surrounding skin – including erythema, maceration, moisture damage
- undermining/tracking, sinuses, tunnelling or fistulae
- odour

- **Support with photography and/or tracings**
- **Datix all pressure ulcers acquired or deteriorated under NHS care as a clinical incident**
- **Pressure ulcers should not be reverse graded**
• As can be seen, the most likely areas of tissue damage are those that are situated over bony prominences. The precise areas that are at risk are dependent upon the position in which the patient remains.

• (Diagram courtesy of the Tissue Viability Society.)
• As can also be seen, patients can be at risk even in a sitting position. We cannot afford to forget patients when they are sitting out – they are still at risk even though they are more mobile.
• Patients who have been on bed rest need to have their seating tolerance built up again!! Do not put patients back out for long periods after bed rest – build them up.
Pressure Areas In Wheelchairs
Medical devices and equipment
NICE Guidelines:

• The National Institute for Clinical Excellence recommends the following in terms of pressure ulcer prevention:

• Assessment of a patient’s risk of pressure injury within 6 hours of admission to hospital for each episode of care, and regularly thereafter depending upon the severity of the issues identified.
Assessment factors/1:

• *Intrinsic factors:*
• Reduced mobility
• Sensory impairment
• Neuropathy
• Acute illness.
• Level of consciousness.
• Extremes of age.
• Vascular disease.
• Severe chronic or terminal illness.
• Previous history of pressure damage.
• Malnutrition and dehydration.
Assessment factors/2:

- *Extrinsic factors:*
  - Pressure.
  - Shearing.
  - Friction.

- *Other factors:*
  - Medication.
  - Moisture to the skin.
Care Plans:

• Use the body maps in the generic assessment documentation to record where there is skin damage.
• Use the daily check charts to record on a daily basis that every area has been checked and if there is a pressure ulcer grade it accordingly.
Care Plans/2:

• A patient who is unable to reposition themselves MUST have a repositioning plan. Plan on 2 hourly repositioning day and night. Include 30° tilt on bed rest.
• Repositioning regimes need to:
  – Minimise prolonged pressure on bony prominences.
  – Minimise friction and shear damage – ensure good manual handling with the correct equipment.
  – Specify that repositioning takes place regularly – even with pressure-relieving devices in situ.
  – Establish a means of recording when this repositioning takes place – YOU MUST RECORD EVERY INSTANCE OF REPOSITIONING.
Care Plans/3:

• Any patient with a pressure ulcer which is EPUAP grade 2 or higher should have a wound care plan.

• Any equipment required, whether it has been already obtained, or, whether it has been requested, when and by whom.

• Dates and times should be set for the evaluation of pressure ulcer and wound care plans so that regular updates can take place.
Pressure reducing or relieving?

• Pressure reducing mattresses distribute the patient’s weight more evenly across the surface of the mattress
• Pressure relieving mattresses, such as alternating mattresses, are designed to completely remove the pressure from areas of the patient’s skin
Pressure ulcer management.

• Each pressure ulcer should have an individual care plan detailing the wound care and more general measures to reduce further risk.

• Ulcers which develop to EPUAP grade 2 or above are NOT TO BE RETRO-GRADED. They become ‘healing grade 3 heel ulcers,’ or ‘healing grade 4 sacral ulcers.’
Pressure Ulcer Care plans.

• Pressure ulcer care plans should detail:
  – Where the ulcerated areas are.
  – What measures are currently being used to reduce risk, with special reference to nutrition, continence, pain management and mobility.
  – If a regime of turning the patient is in place, there must be a means of documenting each time that this is done, and by whom.
  – These care plans should set up review dates, and these need to be reviewed when indicated.
Check Skin

INSPECT YOUR SKIN EACH MORNING
It's YOUR Responsibility
Patient involvement:

• Please encourage patients to maintain their nutrition:
  – Meat, fish, or alternatives.
  – Fruit and vegetables.
  – Bread, potatoes and cereals.
  – Cheese, milk and dairy products.
  – Plenty of fluids stop the skin becoming dehydrated and can reduce the risk of ulceration.
Advice Regarding Skin Care/1:

• Avoid massaging bony parts of the body. This can cause additional damage to skin which may already be delicate.
• In bed, your position should be changed every 2 hours. Bed sheets should have no creases.
• If you cannot move yourself, ask for help.
• Try to avoid dropping crumbs or other food debris in bed which you might lay on.
Advice Regarding Skin Care/2:

• If you can move around in your chair, try changing position every 15 minutes.
• Avoid being dragged when you are lifted – dragging causes friction and increases risk.
• Do not use ring cushions as these increase rather than reduce pressure.
• Avoid staying in one position for more than 2 hours – try to spread your weight evenly.
Advice Regarding Skin Care/3:

• Use warm (not too hot) water and mild soap to cleanse. Use a moisturiser to avoid dry skin, and avoid cold or dry air.

• If you have a problem with perspiration or incontinence, your skin should be cleansed as soon as you are aware of it. Using a soft cloth or sponge should reduce friction.

• Check your skin at least once daily, or ask a carer to help. A mirror will help to see hard-to-reach areas. Attend especially to those areas where pressure is heaviest.
Advice Regarding Skin Care/4:

• Look out for skin changes:
  – Reddening on light skin.
  – Purple or bluish patches on dark skin.
  – Swelling, especially over bony parts.
  – Blisters.
  – Shiny areas.
  – Dry patches or hard areas.
  – Cracks, callouses, wrinkles or broken skin.

• Let your nurse know if you notice any of these things.
Mental Capacity

- 2 stage process of assessment
- If patient has capacity, then their wishes must be respected. In these situations, each and every individual refusal must be recorded.
- If patient does not have capacity, care must be provided under ‘best interests’ provision of Mental Capacity Act.
Delegating care

• Under NMC code, it is the trained nurse’s responsibility to ensure that if we delegate care duties to non-qualified staff, that they are competent and confident to complete the tasks set out to the standard that we require.

• This is of particular relevant in primary care when trained nurses are delegating this care to home carers or patient’s relatives…..
RCA process

• It is now an NHS LA requirement that all GRADE 3 and 4 pressure ulcers, wherever they occur within the Trust, are to be reported as a Serious Incidents Requiring Investigation and to be investigated in accordance with the Root Cause Analysis process and SIRI policy.
REFERENCES:

• NATIONAL INSTITUTE OF CLINICAL EXCELLENCE (2003) *Pressure ulcer risk assessment and prevention, including the use of pressure-relieving devices (beds, mattresses and overlays) for the prevention of pressure ulcers in primary and secondary care.* Clinical guideline 7. NICE: London. Also available as a web document from [www.nice.org.uk](http://www.nice.org.uk), where you will also find a suite of wound care guidelines.

• ROYAL COLLEGE OF NURSING (2005) *The management of pressure ulcers in primary and secondary care.* RCN: London. Also available as a web document from [www.nice.org.uk](http://www.nice.org.uk), or as an Executive Summary.
WEBSITES

- www.ewma.org
- www.worldwidewounds.com
- www.epuap.org
- www.npuap.org
- www.wuwhs.org
- www.wounds-uk.com
- www.judy-waterlow.com.uk