Turn Baby Turn: The Impact of a Pressure Area Care Team and a Risk Assessment Tool

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Background

- Any child requiring hospitalisation is at risk of developing iatrogenic pressure ulcers (PU) due to incorrect fixation of equipment, or medical devices, probes and indwelling catheters.

- Patient's in PICU are at even greater risk due to the plethora of advanced equipment and medical devices used.

- The impact of PU is huge in terms of human suffering and financial cost.

- Any loss of skin integrity increases the risk of hospital acquired infection, causes less favourable outcomes for the patient, and prolongs hospitalisation.
The nursing vision for Great Ormond Street Hospital is zero wait zero waste, and zero harm.

In 2004 there was a significant increase in the incidence of pressure ulcers (PU) in PICU patients.

Aim to identify if the introduction of a pressure ulcer risk assessment tool and a pressure area care team (PACT) would reduce the incidence of pressure ulcers in PICU.
Aim

• Retrospective case note review of all PU in 2 eras: pre-PACT (Jan 2004-Jan 06) and post PACT (Jan 2007-9)

• Data from the interim period was not included (2006) as training initiatives by PACT were ongoing, introducing daily patient PU risk assessment and training in preventable measures

• PU from 2 eras were classified and compared according to patient clinical status factors that increased the risk of PU
  – Malnutrition, active cooling, HFOV
  – Preventable factors: turning, monitoring equipment site rotation
  – Unpredictable PU

• Admission data from PICANET, 2008 admission data estimated as an average of the preceding 2 years.
<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Score 1</th>
<th>Score 2</th>
<th>Score 3</th>
<th>Score 4</th>
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<tbody>
<tr>
<td>Mobility</td>
<td>Completely immobile – does not make changes in body or extremity position without assistance. Patient cannot physiologically tolerate position changes.</td>
<td>Very limited – Makes occasional slight changes in body or extremity position but unable to turn self independently.</td>
<td>Slightly limited – Makes frequent changes in body or extremity position independently.</td>
<td>No limitations – Makes major changes in position without assistance.</td>
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<td>Activity</td>
<td>Bed bound – Confined to bed.</td>
<td>Chair bound – Ability to walk is severely limited or non-existent. Cannot bear own weight. Needs help to get into chair or wheelchair.</td>
<td>Walks occasionally – Walks occasionally for short distances with or without help. Spends majority of shift in bed or chair.</td>
<td>All patients too young to walk or patient walks frequently.</td>
</tr>
<tr>
<td>Sensory perception</td>
<td>Completely limited – Unresponsive to painful stimuli due to altered GCS or sedation. Inability to feel pain over most of body surface.</td>
<td>Very limited – Responds to painful stimuli. Cannot communicate discomfort verbally or has sensory impairment, limiting ability to feel pain over half of body.</td>
<td>Slightly limited – Responds to verbal commands but cannot always communicate discomfort. Has sensory impairment, limiting ability to feel pain or discomfort in 1 or 2 extremities.</td>
<td>No impairment – Responds to verbal commands. Has no sensory deficit that limits ability to feel or communicate pain or discomfort.</td>
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<tr>
<td>Moisture</td>
<td>Constantly moist – Skin is kept moist almost constantly, by perspiration, urine, drainage etc. Dampness is detected every time patient is moved. Linen, nappy/pad or dressing changes are constant.</td>
<td>Very moist – Skin is often but not always moist. Linen, nappy/pad or dressing changes every 2 to 4 hours.</td>
<td>Occasionally moist – Skin is occasionally moist. Nappy/pad changes as routine. Dressing/linen change every shift.</td>
<td>Rarely moist – Continent. Dressing changes as routine. Linen changed every 24 hours.</td>
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<tr>
<td>Tissue perfusion</td>
<td>Extremely compromised – Hypotensive or patient is requiring inotrope support. Patient requires mechanical ventilation. Patient cannot physiologically tolerate position changes.</td>
<td>Compromised – Normotensive. Oxygen saturation of &lt;95%. Haemoglobin may be &lt;10mg/dl. Capillary refill may be &gt;2 seconds. Serum pH is &lt;7.35.</td>
<td>Adequate – Normotensive. Oxygen saturation of &lt;95%. Haemoglobin may be &lt;10mg/dl. Capillary refill may be &lt;2 seconds. Serum pH is normal.</td>
<td>Ideal – Normotensive. Oxygen saturation normal. Normal haemoglobin level. Capillary refill &lt;2 seconds. Normal serum pH.</td>
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</table>
Nursing interventions required for a child scoring 10 or lower must include:

- Daily inspection of skin and bony prominences. The prophylactic use of a barrier film (Cavilon®) for children in nappies or pads

- A plan for re-positioning, ideally every 2 hours, except when the patient cannot physiologically tolerate position changes. The patient’s skin should also be checked at these times. If the patient cannot be repositioned then the clinician who made this decision needs to document the reasons why in the medical notes.

- Use of repositioning record chart. ITU areas to use electronic documentation systems i.e. CareVue.

- Use of Repose® mattress. If the child has blanching/non-blanching erythema on this mattress, then an alternated air mattress is indicated

- Give family/carer a copy of the GOSH ‘Looking after your child’s skin advice leaflet’.

- Completed moving and handling assessment to reduce friction and shear

- Completed nutritional assessment to identify adequate dietary intake

- Reassessment must be recorded daily for all patients scored ‘at risk’

Please refer to the Pressure Ulcer Clinical Guideline for further information; this is available through the Clinical Guidelines website. In addition you may wish
Results

• The PU rate did not significantly differ in the 2 eras: pre PACT 1.96/100 admissions vs 1.46/100 admissions.
## Results

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<tbody>
<tr>
<td></td>
<td>Median Pim % Score (Range)</td>
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</tr>
<tr>
<td>Total PU Number</td>
<td>35</td>
<td>21*</td>
</tr>
<tr>
<td>Alive at discharge from hospital</td>
<td>30</td>
<td>17</td>
</tr>
<tr>
<td>Rate per 100 admissions</td>
<td>1.96</td>
<td>1.46</td>
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<tr>
<td>PU associated with high-risk clinical status</td>
<td>10 (29%)</td>
<td>58.5 (30-86)</td>
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<tr>
<td>Preventable PU</td>
<td>19 (54%)</td>
<td>50 (7-99)</td>
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<tr>
<td>Unpredictable PU</td>
<td>6 (17%)</td>
<td>41 (18-68)</td>
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* P > 0.05 not significant
Implications

• Pressure ulcers remain events in PICU population

• The introduction of a PACT and risk assessment tool has not significantly reduced the incidence of preventable PU

• The risk assessment tool may need calibration for our PICU population.
Implications

• > 50% of pressure ulcers were preventable (*caused by lines, SaO2 probes, equipment*)

• Common sites for pressure ulcers were nares, ears and head

• Future work will be focused on reducing incidence of preventable pressure ulcers

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