Reducing Avoidable Heel Pressure Ulcers – through education/active monitoring

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Pressure Ulcer Training
Pick & Mix

Assessment & Planning
- Anderson
- Waterlow
- At risk plan
- Surface support selection

Equipment
- Bed frames
- Mattresses
- Cushions
- Ordering & Use
- Cleaning & Maintenance
- Incontinence pads
- Aderma pads

Policies & Reporting
- ULHT policy for prevention
- Specialist support surfaces
- SHA ambition
- SHA pathway
- Datix & RCA
- Safety Thermometer (via Safety Express "easts")
- EUPAP & NICE guidance

Care Delivery
- Essence of care plan & MUST
- Skin assessment & staging
- SSKIN bundles
- Continence care

Supporting staff to eliminate avoidable category II, III and IV pressure ulcers by December 2012.

The above tool is designed to assist wards to identify and arrange specific support for their area. Please contact any member of the Tissue Viability Team to discuss your requirements.
Heel Pressure Ulcers
Pathophysiology

• The heel is at increased risk of ulceration due to its posterior prominence and lack of padding over the calcaneus.
• The pressure on the heel when positioned at 90 degrees to the leg is higher than when turned on the side (Gefen 2010).
• Shear (and friction) forces occur on the heel when the patients slides down/moves on the bed. *Can you describe the difference between Shear and Friction forces?*
The hyperaemic response to pressure loading on the heel does not differ from other tissues. However, the heel is a unique bony prominence and with ageing the number of capillaries are reduced, the amount of soft tissue padding over the calcaneus decreases and blood flow at rest to the heel is relatively low.

Do you know your anatomy of the circulation of the lower leg?
Anatomy of the Heel - circulation
Anatomy of the Heel - circulation

- Anterior Tibial artery*
- Posterior Tibial artery (medial)*
- Dorsalis Pedis Artery*
- Plantar Arteries (lateral and medial)
- Peroneal Artery (lateral)
- Perforator branches of Peroneal Artery

* Main arteries located and used for?
• Because of the unique anatomy of the heel and the impaired ability to reperfuse (restoration of the blood flow to previously ischaemic tissue or organ) the heel is a common site for Suspected Deep Tissue Injuries (SDTI’s).

• Co-morbid diseases can also impair arterial inflow when patients are hospitalised e.g. vasoconstriction from medications and pain or hypovolaemia can further reduce arterial inflow – e.g. following Trauma.
Effects of Pressure Ulcer Development

Far reaching....

- Impact on a patients recovery and HRQoL
- Perceptions of the patients relatives and the ‘wider community’ (press, tv and national reports etc.)
- Effects on staff caring for those patients
- Costs to the Trust...

Category 4: £25 to £40,000  Category 3: £15,000

Annual costs ULHT per annum (heels) ?

- Cost to the NHS = 1.5 to 2.6 billion per annum

(Posnett and Franks 2008)
Effects of Pressure Ulcer Development

*HRQol*

- Physical – a wound is present; it may be painful; it further/reduces mobility
- Psychological – cannot get my favourite shoes on; will it ever heal? when can I return to normal activities?
- Social – impairs social interaction (unable to access or due to associated symptomatology)
- Emotional – negative effects on wellbeing due to persistent pain
- Spiritual – affects access to long established groups important to affected persons, such as Church
Factors that increase the risk of developing a heel pressure ulcer
Variables - ‘evidence based’

- Age
- Medical Condition
- Peripheral Vascular Disease (PVD)
- Drug Therapy
- Nutrition
- Medical Interventions
- Patient Support Surfaces
- Care being Given
‘Incidence’ of Heel Pressure Ulcers

• Heel pressure ulcers have been reported to occur in 18.2% of all cases (*International Pressure Ulcer Prevalence Survey 2011*)

• Previously had been reported in orthopaedic areas to be as high as 25 – 40% (*EPUAP 2002*)

• Incidence within ULHT in 2011/12 = average 20% pan trust (*PUNT data*)
Mortality

- Of 74 patients assessed at end of life with full thickness pressure ulcers (category 4), 16.2% were on the heel \( (Brown\ 2003) \)
- The 180 day mortality rate for these patients was 68.9% with an average of 47 days from the ulcer onset to death \( (\text{? Kennedy Ulcers}) \)
- Healing times for these ulcers are long and have been noted to be over a year in many cases.
- Delayed healing can be attributed to underlying comorbidities....
What is PUNT?

- A basic online form was originally developed in 2004 and has been in use in all clinical areas since then (accessed via the Trust’s) but more recent guidance and an increased international / national focus on pressure ulcer prevention/management prompted the re-development (2011) of a more robust tool to record and report all pressure ulcer activity - whether inherited or hospital acquired. The use of PUNT greatly reduces the overheads required to monitor and report upon pressure ulcers in line with the latest national and international guidance. PUNT has led the way in the management of pressure ulcers throughout the NHS and fed into research information provided by the Royal College of Nursing (RCN).

- PUNT allows frequent or regularly required reports (prevalence or incidence) to be generated for review / discussion.
All / Heel Pressure Ulcers in ULHT

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% Incidence (crude) of total (Heel PU) - 5.2 5.3 4.6 3.6 3.4 4.5
All / Heel Pressure Ulcers in ULHT

Incidences (crude) Heel PU (per cent) - downward trend since introduction of Heel protection/SOP pan trust
Heel Pressure Ulcer Prevention - a ULHT Case study

- A Standard Operating Procedure was introduced in late 2011 and piloted within an Orthopaedic Trauma Ward for six months for all patients with a fractured neck of femur.

- Included advise to use APM Mattress and Aderma Heel Pads as from the time of admission.

- Note: APM’s were already widely used throughout the trust, but although Aderma Protective devices had been added to the ULHT Formulary in 2010 the use was variable due to the perceived costs (by a number of clinical staff) associated with the same!

- The use of Aderma widely promoted through appropriate educational activities and supported since mid 2012.
SOP in operation!
Typical patient using SOP - on fractured neck of femur pathway

- Female – over 75 years of age
- History of slipping/falling at or within a home setting
- 50% of patients from Nursing Care Homes with cognitive impairment
- High Risk patients due to above and Complex Medical Needs, in addition to reduced mobility…
- Low Potassium levels often assessed on admission
- Skin condition on admission generally intact!
- *Note*: If admitted from their own home, they have often been living on their own for a period of time.
Guideline for the minimisation of risk of Heel Pressure Ulcer Development

For all patients at high risk of developing heel pressure ulcers (Appendix to ULHT Pressure Ulcer Prevention Policy)

- **Patient identified as at particular risk of developing heel pressure ulceration and with a Waterlow Risk Score of 12 or above from the time of admission**
  - **YES**
    - Apply heel protection devices, as per ULHT policy. Monitor heels at least once every day or as clinically indicated.
    - **NO**
      - Update Waterlow weekly (as ULHT Policy) or as patient’s condition changes/deteriorates.

- **If skin maceration or breakdown noted with heel protection in situ consider the following**
  - Use of the Odstock Wedge only if on a static mattress to off load heels (do not use pillows for pressure relief!)
  - Discuss with TV team if patient on a dynamic mattress.

- **If further deterioration noted and patient is immobile or on a dynamic mattress consider:**
  - Invacare heel protectors (gel pads) OR Repose Boots.
## Heel Pressure Ulcers in Ward 3b

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### Graphs

- **Heel Ulcers On Ward 3B**
- **Heel Ulcers In ULHT**
- **Total Ulcers In ULHT**
Heel Pressure Ulcers in Ward 3b

SOP introduced late 2011 – used as standard pan trust mid 2012

<table>
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<tr>
<td>Grand Total</td>
<td>17</td>
<td>32</td>
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Cost Effective Practice?

• Within one clinical area cost of managing heel pressure ulcers has reduced by £240,000!
• Plus Nursing Care time saved
• Patient discharges not delayed
• Patient’s Health Related Quality of Life improved
• Number of Tissue Viability related complaints for the clinical area significantly reduced – NIL in last two years!
• Legal fees/settlements significantly reduced – NIL
• Everybody wins!!
Evidence of the benefits of on-going monitoring and the introduction of a Standard Operating Procedure (SOP) to reduce the risk of Skin damage

Background

This poster will illustrate both the development and the re-development of an online Pressure Ulcer Notification Tool (PUNT) to facilitate real-time recording of all in-patients with and all assessed pressure ulcers (Categories 1-4), within an acute healthcare setting. A basic online form was originally developed in 2004 but more recent guidance on pressure ulcer management has prompted the development (2011) of a more robust tool to record and report pressure ulcer activity. PUNT greatly reduces the overheads required to monitor and report upon pressure ulcers in line with the latest national and international guidance [1][2][3]. PUNT has led the way in the management of pressure ulcers throughout the NHS and fed into research information provided by the Royal College of Nursing (RCN).

Process

Education / On-going monitoring

Only trained personnel can input into the system thanks to the use of an e-learning application that trains and tests the user and only permits system access when they have met the required competency level. PUNT data can be referenced between assessment dates, which should be no more than one week apart. The system highlights when subsequent assessments are overdue. User feedback confirmed that the system is easy to use and subsequent (weekly) ulcer reviews only require a quick record edit. The previous history of significant ulcers alert (all recorded as either category 3 or 4 damage) assists practitioners to identify potential ‘at risk’ anatomical areas at the time of this patient’s new admission / readmission / reassessment and therefore to plan care accordingly. The system facilitates individual clinical ward dashboards that show reports such as a summary of current /transferred patients with pressure ulcers on each ward to assist with ward management processes.

Methods

PUNT improves the process of managing information about patients with pressure ulcers across all four hospital sites that make up the United Lincolnshire Hospitals NHS Trust (ULHT). PUNT was developed jointly by the Tissue Viability and ICT departments. It is developed in industry standard technologies and meets all patient safety related DISCs including the use of NHS / Microsoft Common User Interface (MSCUI) components. Following a patient’s skin assessment in the clinical setting (either on admission or on-going) if any pressure damage is noted then the practitioner will record this information in the PUNT system, which is accessed via the Trust intranet. In late 2011, an SOP was also introduced within the Orthopaedic wards in one Trust Hospital that included the use of an alternating pressure mattress (Nimbus) and prophylactic heel protection (Ademira) for all patient’s with a fractured neck of femur from admission until mobile. Since 2012 the use of prophylactic heel protection has been promoted actively Trust-wide.

Additionally, appropriately ‘at risk’ scores, such as the Waterlow, Glamorgan or Plymouth scores have been included in the tool and may be updated either weekly or as the patient’s clinical condition dictates. Finally a number of appropriate care interventions are also included to assist all practitioners in both planning immediate care and to facilitate audit of subsequent care.

Key Impacts / Observations

Incidence of heel pressure ulcers decreased since introduction of SOP

Current incidence % of all pressure ulcer and % of hospital acquired down to the equivalent of a 25% reduction in pressure ulcer Nationally.

Presssure Ulcer Incidence (all ulcers)

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Trends / Incidence of Heel Pressure Ulceration

Other patient safety gains include (but are not limited to) the following:-

- Improved patient quality of care.
- Includes data about where patients were admitted from, which helps to inform primary care settings of potential problem areas. Previous significant ulcers (category 3 and 4) are always highlighted when a patient record is retrieved.
- PUNT is fully audited so all user actions can be identified to an individual.
- PUNT is linked to the patient administration system for positive identification of patients and patient demographics.
- All input data is validated to avoid invalid data input.
- Improves legibility of information transferred between clinicians.
- Improved reliability of data required by an reported to external agencies.

Summary

From Spring 2012 there has been a national drive in the UK to reduce the incidence of all avoidable Pressure Ulcers (Stop the Pressure campaign [4]) originating from the department of health to make sure all hospitals are reporting pressure ulcer data in a comparable way. Unfortunately a tool known as the Safety Thermometer was chosen to record /report this data. However, as data is only collected on one day each month - this is prevalence data. If incidence data is collected generally this is in a paper format , the results of which are then collated retrospectively. PUNT has the ability to report both prevalence and incidence data and as ‘real time’, this data is updated straight after assessment so the latest information is always available to relevant individuals within the organisation. PUNT also allows frequent reports to be generated for review /discussion, e.g. Monthly / Quarterly / Annual Directorate / Trust reports.

Monitoring of performance improvement is impossible unless you have a robust monitoring system in place first!
Summary? Potential for adoption?

• You cannot demonstrate improvements unless you are counting in the first place!

• Simple consistent actions can produce big results!

• Protocol can be adopted by any healthcare setting!

• A great example of which is now going to be illustrated....
ANY QUESTIONS?