

1. Introduction

Most pressure ulcers are avoidable.

Avoidable means that the person receiving care developed a pressure ulcer and the provider of care did not do one of the following:

- Evaluate the person's clinical condition and pressure ulcer risk factors
- Plan and implement interventions which are consistent with the person's needs and goals, and recognised standards of practice.
- Monitor and evaluate the impact of the interventions
- Or revise the interventions as appropriate (DH England)

A pressure ulcer is defined as an area of localised damage to the skin and the underlying tissue caused by pressure, shear, friction and / or a combination of these factors. In adults damage usually occurs over bony prominences.

Whilst the evidence for preventing pressure ulcers has some limits it is generally agreed the key components of prevention are:

- Surface
- Skin care
- Keep patient moving
- Incontinence / continence
- Nutrition and hydration

It is these components which form the basis of the prevention bundle. (Appendix 1)

This guideline should be read in conjunction with local protocols

2. Risk Assessment Policy

- a. Each health care organisation must have a policy in place which includes
 - A structured approach to risk assessment which is relevant to the healthcare setting and clinical areas,
 - The timing of risk assessments and reassessment,
 - Documentation of risk assessment and
 - Clear communication processes to inform the wider health care team.
- b. An education process, which ensures the achievement of an accurate and reliable risk assessment.
- c. Documentation which acts as a communication method within the team provides evidence that care planning is appropriate and serves as a benchmark for monitoring the individual's progress.

3. Risk Assessment

- a. Organisations will need to use appropriate screening and risk assessment tools for the different patient groups they care for.
- b. All patients should be assessed for their risk of developing a pressure ulcer.
- c. The recommended screening assessment tool to be used is Andersen

d. The recommended full risk assessment tools to be used are either Waterlow or Braden

e. A risk assessment should be undertaken each time the patient's condition or circumstances alter e.g. Patient goes to theatre, falls, infection, nil by mouth etc.

Setting	Assessment type	Additional criteria
In-patient beds (including community hospitals and mental health)	Full	On admission and then in accordance with local guidelines. This should be a minimum of weekly
Assessment units (e.g. EAU, MAU, SAU)	Full	Within 6 hours of decision to admit
Single episode of day care	Full	On admission
Sessional (repeat) day care e.g. Dialysis,	Full	On 1st occasion and at each planned review
Equipment and wheelchair clinics	Full	On initial attendance and at each planned review
MIU and A&E	Screening	For patients who have been in the unit for 4 or more hours
	Full	On decision to admit
Complex outpatient appointment	Screening	Where a patient is scheduled to be in unit for 4 or more hours
Patients own home/ residential home	Full	On admission to clinical caseload and then at least monthly
Children with complex needs	Full	On full assessment / review
Prisons	Screening	In reception
Maternity	Screening	On admission, in labour with epidural and post complex delivery
Neonatal	Full	On admission and then in accordance with local guidelines. This should be a minimum of weekly

f. The table below gives an overview of the range of clinical settings and the type of screening or full assessment to be used. The type of assessment indicated is the minimum expected.

g. The list above is not exhaustive and clinical judgement must be used to ensure all patients in all settings receive the correct level of assessment.

h. Factors which need to be considered include:

- Activity and mobility
- Skin assessment – are there any alterations and is the skin intact? Other factors include. dry skin, erythema and other alterations
- Nutritional indicators including anaemia, haemoglobin, serum albumin levels, nutritional intake and weight
- Factors affecting perfusion and oxygenation include diabetes, cardiovascular instability, low blood pressure, ankle brachial index and oxygen use.
- Skin moisture
- Advanced age

i. Consider the potential impact of the following on an individual's risk of pressure ulcer development

- Friction and shear
- Sensory perception
- General health status
- Body temperature

j. Develop and implement a prevention plan when individuals

are identified as being at risk of developing pressure ulcers

4. Skin assessment

- a. Ensure that a complete skin assessment is part of the risk assessment process. The skin assessment should include identification of any areas of blanching, localised heat, oedema and hardness.
- b. Evidence suggests grade 1 pressure ulcers are under reported in individuals with darkly pigmented skin because areas of redness are not easily seen.
- c. Inspect the skin regularly for signs of redness in individuals identified as being at risk. The frequency will need to be increased in response to any deterioration in the patients overall condition.
- d. The patient should be asked if they have any areas of discomfort or pain that could be attributed to skin damage. A number of studies have identified pain as a major factor for individuals with pressure ulcers. Pain over the site may be a precursor to tissue breakdown.
- e. Observe the skin for pressure damage caused by medical devices (e.g. catheters, oxygen tubing, ventilation tubing etc)
- f. All skin assessments must be documented, including any pain potentially related to pressure damage. Accurate documentation is

essential for monitoring the progress on an individual and to aid communication between professionals.

5. Skin care

- a. Whenever possible do not turn the patient onto a body surface that is still reddened from a previous episode of pressure loading as this indicates the body has not recovered from the previous loading and requires further respite from repeated loading.
- b. Do not use massage as a means to prevent pressure ulcers. Massage is contraindicated in the presence of acute inflammation and where there is the possibility of damaged blood vessels or fragile skin.
- c. Do not vigorously rub skin that is at risk for pressure ulceration. As well as being painful, rubbing the skin can also cause mild tissue damage or provoke an inflammatory reaction, particularly in the frail elderly.
- d. Do use skin emollients to hydrate dry skin in order to reduce the risk of skin damage. Dry skin seems to be a significant and independent risk factor for pressure ulcer development.
- e. Protect the skin from exposure to excessive moisture with a barrier product. The mechanical properties of the stratum corneum are changed by the presence of moisture and as a function of temperature.

6. Nutrition & Hydration for pressure ulcer prevention

- a. Screen and assess the nutritional status of every individual at risk of pressure ulcers in each health care setting. Since under nutrition is a reversible risk factor for pressure ulcer development, early identification and management are very important.
- b. Use a valid reliable and practical tool for nutritional screening which is quick and easy to use. (An example is provided at Appendix 2)
- c. Each organisation should have a nutritional screening policy in place in all health care settings, including recommendations for screening frequency.
- d. Best practice (EUPAP) advises individuals with nutritional risk and pressure ulcer risk should be referred to a dietician and a MDT as needed.
- e. Provide nutritional support to each individual with nutritional risk and pressure ulcer risk following the nutritional cycle. This includes:
 - Nutritional assessment
 - Estimation of nutritional requirements
 - Comparison of intake with requirements
 - Provide appropriate, nutritional intervention based on appropriate feeding route
 - Monitor and evaluate nutritional outcome, reassessing nutritional status at frequent intervals whilst the patient remains at risk

- f. Ensure the patient is adequately hydrated. (An example of fluid management tool can be found in Appendix 2)
- g. Patients who are at risk of pressure ulcers and who have a nutritional risk due to acute or chronic disease or following a surgical intervention should be offered high-protein mixed oral nutritional supplements in addition to their usual diet.
- h. Oral nutrition is the preferred route for nutrition and should be supported whenever possible. However nutritional supplements are of value because many pressure ulcer prone patients often cannot meet their nutritional requirements.
- i. Oral nutritional supplements seems to be associated with a significant reduction in pressure ulcer development, compared to routine care
- j. Enteral and parenteral nutrition may be necessary when oral nutrition is inadequate or not possible.
- c. High pressure over bony prominences for a short period of time and low pressure over bony prominences for a long period of time are equally damaging.
- d. In order to lessen the patents risk of developing a pressure ulcer developing it is important to reduce the time and the amount of pressure the patient is exposed to.
- e. The use of repositioning as a prevention strategy must take into consideration the condition of the patient and the support surface in use.

7. Repositioning for the prevention of pressure ulcers

7.1 Repositioning

- a. The use of repositioning should be considered in all at risk patients.
- b. Repositioning should be undertaken to reduce the duration and magnitude of pressure over vulnerable areas of the body.
- a. Frequency of repositioning will be influenced by variables concerning the individual and the support surface in use.
- b. Frequency will also be determined by the patient's tissue tolerance, level of activity and mobility, general medical condition, overall treatment objectives, and assessments of the patients skin.
- c. When assessing the patient's skin condition and general comfort, if the patient is not responding as expected reconsider the frequency and method of repositioning.
- d. Repositioning frequency should be influenced by the support surface used. A patient will require more frequent repositioning on a non-pressure-redistribution mattress than on a viscoelastic foam mattress.

The qualities of the pressure – redistribution mattress will also influence frequency of repositioning.

- e. It is essential to record all repositioning events, including position, time, observations of the skin

7.3 Repositioning technique

- a. Repositioning contributes to the patients comfort, dignity and functional ability.
- b. When repositioning you are aiming to relieve pressure and or redistribute pressure. It is important to avoid the skin being subjected to additional pressure or shearing, both of which may cause further damage.
- c. Transfer aids should be used to reduce friction and shear. Patients should be moved not dragged.
- d. Avoid positioning the patient directly onto medical devices such as tubes or drainage systems.
- e. Avoid positioning the individual on bony prominences with existing non-blanchable erythema.
- f. Repositioning should be undertaken using the 30 degree tilted side-lying position (right-side, back, left-side) and the prone position if the patient can tolerate this and their medical condition allows.
- g. Avoid postures which increase pressure such as the 90 degree side-lying position or the semi-

recumbent position
(Repositioning example from Bedford Hospital NHS Trust)

- h. If sitting up in bed is necessary avoid the head of the bed being elevated or the patient to be in a slouched position which places pressure and shear on the sacrum and coccyx.

7.4 Repositioning the seated patient

- a. Ideally the patient should be seated so they can maintain a full range of activities. Select a posture that is acceptable to the patient and minimises the pressure and extent of shear on the skin and soft tissues.
- b. Where the patients feet do not reach the floor, place the feet on a footrest. This will avoid the patient sliding forward out of the chair. The height of the footrest should be adjusted so as to slightly flex the pelvis forward by positioning the thighs slightly lower than horizontally.
- c. The time a patient spends seated in a chair without pressure relief should be time limited. When a patient is seated in a chair the weight of the body causes the greatest exposure to pressure to occur over the ischial tuberosities. As the loaded area in such cases is relatively small, the pressure will be high: therefore, without pressure relief, a pressure ulcer will occur quickly.

7.5 Repositioning documentation

- a. The following information regarding the patients repositioning needs should be documented at each event:
- Details of repositioning regime
 - Frequency of repositioning
 - Position adopted
 - Assessment of the skin at each change of position
 - Evaluation of the effectiveness of the regime
 - Amend care plan as required

7.6 Education and training

Education regarding pressure ulcer prevention is mandatory for all persons involved in care of patients at risk of pressure ulcer development, including the individual and their carer's.

Training in the correct methods of repositioning and the use of equipment should be offered to all people involved in the care of the patient.

8. Support surfaces

8.1 General principles

- a. The selection of a support surface should not be based solely on the perceived level of risk of pressure ulcer development or the grade of any existing pressure ulcers.
- b. The selection of an appropriate support surface should also take into account the following factors;

- Patients level of mobility within the bed
- The patients comfort
- The setting, and circumstances of the care provision.

- c. When selecting a support surface within the home setting consideration should be given to the weight of the bed, the structure of the home, width of doors, availability of an uninterrupted power supply, and the ability to promote ventilation of heat from the motor.

Consider the impact on a partner if the mattress is being used on a shared bed.

- d. On each visit discuss the appropriateness and functionality of the support surface with the patient and / or carer.
- e. The prescribing clinician needs to ensure the support surface is being used appropriately according to manufacturer's instruction and is within its functional lifespan.

8.2 Mattress and bed use in pressure ulcer prevention

- a. Use higher-specification foam mattresses rather than standard hospital foam mattresses for all patients assess as being at risk of pressure ulcer development.
- b. It is important to note there is no evidence of the superiority of one higher specification foam mattress over alternative higher-specification foam mattresses.

- c. Use an active support surface (overlay or mattress) for patients at higher risk of pressure ulcer development where frequent manual repositioning is not possible.
- d. Alternating-pressure active support overlays have a similar efficacy in terms of pressure ulcer incidence.
- e. Do not use small-cell alternating-pressure air mattresses or overlays. Alternating pressure air mattresses with small air cells (diameter \wedge 10 cm) cannot be sufficiently inflated to ensure pressure relief over the deflated air cells. Internal sensors are being utilised in models currently under development that may resolve this problem.
- f. Continue to turn and reposition, where possible, all individuals at risk of developing pressure ulcers

8.3 The use of support surfaces to prevent heel pressure ulcers

- a. Ensure the heels are free of the surface of the bed.
- b. Heel-protection devices should elevate the heel completely (off-load them) in such a way as to distribute the weight of the leg along the calf without putting pressure on the Achilles tendon. The knee should be in slight flexion. Hyperextension of the knee may cause obstruction of the popliteal vein and this could predispose an individual to deep vein thrombosis.
- c. Use a pillow under the calves so that the heels are elevated i.e. floating from the mattress

- d. Ensure the heels are inspected regularly in accordance with the patients repositioning regime.

8.4 Use of support surfaces to prevent pressure ulcers while seated.

- a. Use a pressure redistributing seat cushion for individuals sitting in a chair whose mobility is reduced and who are therefore at risk of pressure ulcer development.
- b. Limit the time an individual spends seated in a chair without pressure relief.

8.5 The use of other support surfaces in pressure ulcer prevention

- a. Avoid the use of synthetic sheepskin pads: cut-out, ring or donut type devices and water filled gloves.
- b. Natural sheepskin pads on top of mattresses might assist in preventing pressure ulcers.

9. Special population: patients in the operating room

- a. Refine the risk assessment of patients undergoing surgery by examining other factors that are likely to occur and will increase the risk of pressure ulcer development including:
 - Length of the operation
 - Increased hypotensive episodes intra-operatively

- Low core temperature during surgery
 - Reduced mobility on day one (post-operatively).
- b. Use a pressure-redistributing mattress on the operating table for all patient`s identified as being at risk of pressure ulcer development.
 - c. Position the patient in such a way as to reduce the risk of pressure ulcer development during surgery
 - d. Elevate the heels completely (offload them) in such a way as to distribute the weight of the leg along the calf without putting all the pressure on the Achilles tendon. The knee should be in slight flexion.
- e. Pay attention to pressure redistribution prior to and after surgery by:
 - a) placing the patient on a pressure redistribution mattress both prior to and after surgery and
 - b) Position the patient in a different posture preoperatively and postoperatively from the posture adopted during the surgery.

For more information visit
www.eoe.nhs.uk/ambitions/pressureulcers

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