NICE National Institute for Health and Care Excellence

Pressure ulcers: prevention and management of pressure ulcers

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Introduction

This guideline updates and replaces 'Pressure ulcers' (NICE clinical guideline 29) and 'Pressure ulcer prevention' (NICE clinical guideline 7). See About this guideline for details.

Pressure ulcers are caused when an area of skin and the tissues below are damaged as a result of being placed under pressure sufficient to impair its blood supply. Typically they occur in a person confined to bed or a chair by an illness and as a result they are sometimes referred to as 'bedsores', or 'pressure sores'.

All patients are potentially at risk of developing a pressure ulcer. However, they are more likely to occur in people who are seriously ill, have a neurological condition, impaired mobility, impaired nutrition, or poor posture or a deformity. Also, the use of equipment such as seating or beds which are not specifically designed to provide pressure relief, can cause pressure ulcers. As pressure ulcers can arise in a number of ways, interventions for prevention and treatment need to be applicable across a wide range of settings including community and secondary care. This may require organisational and individual change and a commitment to effective delivery.

Pressure ulcers are often preventable and their prevention is included in domain 5 of the Department of Health's NHS outcomes framework 2014/15. The current guideline rationalises the approaches used for the prevention and management of pressure ulcers. Its implementation will ensure practice is based on the best available evidence. It covers prevention and treatment and applies to all people in NHS care and in care funded by the NHS.

Recommendations for prevention include methods for identification and risk assessment and the preventive measures that should be applied. Treatment of pressure ulcers includes recommendations on wound care, adjunctive therapies and support surfaces. While there is much clinical expertise and good practice focused on preventing and treating pressure ulcers, it is hoped that this evidence-based guidance will contribute to reducing the number of pressure ulcers nationally through its implementation throughout the NHS.

The guideline will assume that prescribers will use a drug's summary of product characteristics to inform decisions made with individual patients.

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Patient-centred care

This guideline offers best practice advice on the care of people with pressure ulcers.

Patients and healthcare professionals have rights and responsibilities as set out in the NHS Constitution for England – all NICE guidance is written to reflect these. Treatment and care should take into account individual needs and preferences. Patients should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If the patient is under 16, their family or carers should also be given information and support to help the child or young person to make decisions about their treatment. Healthcare professionals should follow the Department of Health's advice on consent. If someone does not have capacity to make decisions, healthcare professionals should follow the code of practice that accompanies the Mental Capacity Act and the supplementary code of practice on deprivation of liberty safeguards.

NICE has produced guidance on the components of good patient experience in adult NHS services. All healthcare professionals should follow the recommendations in Patient experience in adult NHS services.

If a young person is moving between paediatric and adult services, care should be planned and managed according to the best practice guidance described in the Department of Health's Transition: getting it right for young people.

Adult and paediatric healthcare teams should work jointly to provide assessment and services to young people at risk of developing or who have developed pressure ulcers. Diagnosis and management should be reviewed throughout the transition process, and there should be clarity about who is the lead clinician to ensure continuity of care.

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Key priorities for implementation

The following recommendations have been identified as priorities for implementation.

Adults: risk assessment

- Carry out and document an assessment of pressure ulcer risk for adults:
  - being admitted to secondary care or care homes in which NHS care is provided or
  - receiving NHS care in other settings (such as primary and community care and emergency departments) if they have a risk factor, for example:
    - significantly limited mobility (for example, people with a spinal cord injury)
    - significant loss of sensation
    - a previous or current pressure ulcer
    - nutritional deficiency
    - the inability to reposition themselves
    - significant cognitive impairment.

Adults: skin assessment

- Offer adults who have been assessed as being at high risk of developing a pressure ulcer a skin assessment by a trained healthcare professional (see recommendation 1.3.4). The assessment should take into account any pain or discomfort reported by the patient and the skin should be checked for:
  - skin integrity in areas of pressure
  - colour changes or discoloration[1]
  - variations in heat, firmness and moisture (for example, because of incontinence, oedema, dry or inflamed skin).

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All ages: care planning

- Develop and document an individualised care plan for neonates, infants, children, young people and adults who have been assessed as being at high risk of developing a pressure ulcer, taking into account:
  - the outcome of risk and skin assessment
  - the need for additional pressure relief at specific at-risk sites
  - their mobility and ability to reposition themselves
  - other comorbidities
  - patient preference.

Adults: repositioning

- Encourage adults who have been assessed as being at risk of developing a pressure ulcer to change their position frequently and at least every 6 hours. If they are unable to reposition themselves, offer help to do so, using appropriate equipment if needed. Document the frequency of repositioning required.

Adults: devices for prevention of pressure ulcers

- Use a high-specification foam mattress for adults who are:
  - admitted to secondary care
  - assessed as being at high risk of developing a pressure ulcer in primary and community care settings.

Neonates, infants, children and young people: risk assessment

- Carry out and document an assessment of pressure ulcer risk for neonates, infants, children and young people:
  - being admitted to secondary care or tertiary care or

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  - receiving NHS care in other settings (such as primary and community care and emergency departments) if they have a risk factor, for example:
    - significantly limited mobility (for example, people with a spinal cord injury)
    - significant loss of sensation
    - a previous or current pressure ulcer
    - nutritional deficiency
    - the inability to reposition themselves
    - significant cognitive impairment.

All ages: healthcare professional training and education

- Provide training to healthcare professionals on preventing a pressure ulcer, including:
  - who is most likely to be at risk of developing a pressure ulcer
  - how to identify pressure damage
  - what steps to take to prevent new or further pressure damage
  - who to contact for further information and for further action.
- Provide further training to healthcare professionals who have contact with anyone who has been assessed as being at high risk of developing a pressure ulcer. Training should include:
  - how to carry out a risk and skin assessment
  - how to reposition
  - information on pressure redistributing devices
  - discussion of pressure ulcer prevention with patients and their carers
  - details of sources of advice and support.

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Adults: management of heel pressure ulcers

- Discuss with adults with a heel pressure ulcer and if appropriate, their carers, a strategy to offload heel pressure as part of their individualised care plan.

[1] Healthcare professionals should be aware that non-blanchable erythema may present as colour changes or discolouration, particularly in darker skin tones or types.

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1 Recommendations

The following guidance is based on the best available evidence. The full guideline gives details of the methods and the evidence used to develop the guidance.

The wording used in the recommendations in this guideline (for example, words such as 'offer' and 'consider') denotes the certainty with which the recommendation is made (the strength of the recommendation). See About this guideline for details.

Terms used in this guideline

Adults, neonates, infants, children and young people

This guideline covers people of all ages at risk of, or who have, a pressure ulcer. These terms are defined as follows:

- adults: 18 years or older
- neonates: under 4 weeks
- infants: between 4 weeks and 1 year
- children: 1 year to under 13 years
- young people: 13 to 17 years.

Risk assessment

This guideline uses the terms 'at risk' and 'at high risk' to identify people who may develop a pressure ulcer. For the purposes of this guideline:

- Adults considered to be **at risk** of developing a pressure ulcer are those who, after assessment using clinical judgement and/or a validated risk assessment tool, are considered to be at risk of developing a pressure ulcer.
- Adults considered to be **at high risk** of developing a pressure ulcer will usually have multiple risk factors (for example, significantly limited mobility, nutritional deficiency, inability to reposition themselves, significant cognitive impairment[2]) identified during risk assessment

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with or without a validated risk assessment tool. Adults with a history of pressure ulcers or a current pressure ulcer are also considered to be at high risk.

- Neonates, infants, children and young people considered to be **at risk** are those who, after assessment using clinical judgement and/or a validated risk assessment tool, are considered to be at risk of developing a pressure ulcer.
- Neonates, infants, children and young people considered to be **at high risk** of developing a pressure ulcer will usually have multiple risk factors (for example, significantly limited mobility, nutritional deficiency, inability to reposition themselves, significant cognitive impairment[2]) identified during risk assessment with or without a validated risk assessment tool. Those with a history of pressure ulcers or a current pressure ulcer are also considered to be at high risk.

1.1 Prevention: adults

Risk assessment

1.1.1 Be aware that all patients are potentially at risk of developing a pressure ulcer.

1.1.2 Carry out and document an assessment of pressure ulcer risk for adults:

- being admitted to secondary care or care homes in which NHS care is provided or
- receiving NHS care in other settings (such as primary and community care and emergency departments) if they have a risk factor, for example:
  - significantly limited mobility (for example, people with a spinal cord injury)
  - significant loss of sensation
  - a previous or current pressure ulcer
  - nutritional deficiency
  - the inability to reposition themselves
  - significant cognitive impairment.

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1.1.3 Consider using a validated scale to support clinical judgement (for example, the Braden scale, the Waterlow score or the Norton risk-assessment scale) when assessing pressure ulcer risk.

1.1.4 Reassess pressure ulcer risk if there is a change in clinical status (for example, after surgery, on worsening of an underlying condition or with a change in mobility).

Skin assessment

1.1.5 Offer adults who have been assessed as being at high risk of developing a pressure ulcer a skin assessment by a trained healthcare professional (see recommendation 1.3.4). The assessment should take into account any pain or discomfort reported by the patient and the skin should be checked for:

- skin integrity in areas of pressure
- colour changes or discoloration[3]
- variations in heat, firmness and moisture (for example, because of incontinence, oedema, dry or inflamed skin).

1.1.6 Use finger palpation or diascopy to determine whether erythema or discolouration (identified by skin assessment) is blanchable.

1.1.7 Start appropriate preventative action (see recommendations 1.1.1–1.1.17) in adults who have non-blanching erythema and consider repeating the skin assessment at least every 2 hours until resolved.

Repositioning

1.1.8 Encourage adults who have been assessed as being at risk of developing a pressure ulcer to change their position frequently and at least every 6 hours. If they are unable to reposition themselves, offer help to do so, using appropriate equipment if needed. Document the frequency of repositioning required.

1.1.9 Encourage adults who have been assessed as being at high risk of developing a pressure ulcer to change their position frequently and at least every 4 hours.

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If they are unable to reposition themselves, offer help to do so, using appropriate equipment if needed. Document the frequency of repositioning required.

Skin massage

1.1.10 Do not offer skin massage or rubbing to adults to prevent a pressure ulcer.

Nutritional supplements and hydration

1.1.11 Do not offer nutritional supplements specifically to prevent a pressure ulcer in adults whose nutritional intake is adequate.

1.1.12 Do not offer subcutaneous or intravenous fluids specifically to prevent a pressure ulcer in adults whose hydration status is adequate.

Pressure redistributing devices

1.1.13 Use a high-specification foam mattress for adults who are:

- admitted to secondary care
- assessed as being at high risk of developing a pressure ulcer in primary and community care settings.

1.1.14 Consider a high-specification foam theatre mattress or an equivalent pressure redistributing surface for all adults who are undergoing surgery.

1.1.15 Discuss with adults at high risk of developing a heel pressure ulcer and, where appropriate, their family or carers, a strategy to offload heel pressure, as part of their individualised care plan.

1.1.16 Consider the seating needs of people at risk of developing a pressure ulcer who are sitting for prolonged periods.

1.1.17 Consider a high-specification foam or equivalent pressure redistributing cushion for adults who use a wheelchair or who sit for prolonged periods.

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Barrier creams

1.1.18 Consider using a barrier preparation to prevent skin damage in adults who are at high risk of developing a moisture lesion or incontinence-associated dermatitis, as identified by skin assessment (such as those with incontinence, oedema, dry or inflamed skin).

1.2 Prevention: neonates, infants, children and young people

Risk assessment

1.2.1 Carry out and document an assessment of pressure ulcer risk for neonates, infants, children and young people:

- being admitted to secondary or tertiary care or
- receiving NHS care in other settings (such as primary and community care and emergency departments) if they have a risk factor, for example:
  - significantly limited mobility
  - significant loss of sensation
  - a previous or current pressure ulcer
  - nutritional deficiency
  - the inability to reposition themselves
  - significant cognitive impairment.

1.2.2 Use a scale validated for this population (for example, the Braden Q scale for children), to support clinical judgement.

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Skin assessment

1.2.3 Offer neonates, infants, children and young people who are assessed as being at high risk of developing a pressure ulcer a skin assessment by a trained healthcare professional. Take into account:

- skin changes in the occipital area
- skin temperature
- the presence of blanching erythema or discoloured areas of skin.

1.2.4 Be aware of specific sites (for example, the occipital area) where neonates, infants, children and young people are at risk of developing a pressure ulcer.

Repositioning

1.2.5 Ensure that neonates and infants who are at risk of developing a pressure ulcer are repositioned at least every 4 hours.

1.2.6 Encourage children and young people who are at risk of developing a pressure ulcer to change their position at least every 4 hours. If they are unable to reposition themselves, offer help to do so, using appropriate equipment if needed.

1.2.7 Consider more frequent repositioning than every 4 hours for neonates and infants who have been assessed as being at high risk of developing a pressure ulcer. Document the frequency of repositioning required.

1.2.8 Encourage children and young people who have been assessed as being at high risk of developing a pressure ulcer to change their position more frequently than every 4 hours. If they are unable to reposition themselves, offer help to do so, using equipment if needed. Document the frequency of repositioning required.

1.2.9 Ensure that repositioning equipment is available to aid the repositioning of children and young people, if needed.

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1.2.10 Ensure that healthcare professionals are trained in the use of repositioning equipment.

1.2.11 Ensure that patients, parents and carers understand the reasons for repositioning. If children and young people decline repositioning, document and discuss their reasons for declining.

1.2.12 Consider involving a play expert to encourage children who have difficulty with, or who have declined repositioning.

1.2.13 Relieve pressure on the scalp and head when repositioning neonates, infants, children and young people at risk of developing a pressure ulcer.

Skin massage

1.2.14 Do not offer skin massage or rubbing to neonates, infants, children and young people to prevent a pressure ulcer.

Nutritional supplements and hydration

1.2.15 Do not offer nutritional supplements specifically to prevent a pressure ulcer in neonates, infants, children and young people with adequate nutritional status for their developmental stage and clinical condition.

1.2.16 Do not offer subcutaneous or intravenous fluids specifically to prevent a pressure ulcer in neonates, infants, children and young people with adequate hydration status for their development stage and clinical condition.

Pressure redistributing devices

1.2.17 Use a high-specification foam cot mattress or overlay for all neonates and infants who have been assessed as being at high risk of developing a pressure ulcer as part of their individualised care plan.

1.2.18 Use a high-specification foam mattress or overlay for all children and young people who have been assessed as being at high risk of developing a pressure ulcer as part of their individualised care plan.

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1.2.19 Discuss with children and young people at high risk of developing a heel pressure ulcer and their parents and carers, where appropriate, a strategy to offload heel pressure as part of their individualised care plan.

1.2.20 Offer infants, children and young people who are long-term wheelchair users, regular wheelchair assessments and provide pressure relief or redistribution.

1.2.21 Offer neonates, infants, children and young people at risk of developing an occipital pressure ulcer an appropriate pressure redistributing surface (for example, a suitable pillow or pressure redistributing pad).

Barrier creams

1.2.22 Use barrier preparations to help prevent skin damage, such as moisture lesions, for neonates, infants, children and young people who are incontinent.

1.3 Prevention: all ages

Care planning

1.3.1 Develop and document an individualised care plan for neonates, infants, children, young people and adults who have been assessed as being at high risk of developing a pressure ulcer, taking into account:

- the outcome of risk and skin assessment
- the need for additional pressure relief at specific at-risk sites
- their mobility and ability to reposition themselves
- other comorbidities
- patient preference.

Patient and carer information

1.3.2 Offer timely, tailored information to people who have been assessed as being at high risk of developing a pressure ulcer, and their family or carers. The

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information should be delivered by a trained or experienced healthcare professional and include:

- the causes of a pressure ulcer
- the early signs of a pressure ulcer
- ways to prevent a pressure ulcer
- the implications of having a pressure ulcer (for example, for general health, treatment options and the risk of developing pressure ulcers in the future).

Demonstrate techniques and equipment used to prevent a pressure ulcer.

1.3.3 Take into account individual needs when supplying information to people with:

- degenerative conditions
- impaired mobility
- neurological impairment
- cognitive impairment
- impaired tissue perfusion (for example, caused by peripheral arterial disease).

Healthcare professional training and education

1.3.4 Provide training to healthcare professionals on preventing a pressure ulcer, including:

- who is most likely to be at risk of developing a pressure ulcer
- how to identify pressure damage
- what steps to take to prevent new or further pressure damage
- who to contact for further information and for further action.

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1.3.5 Provide further training to healthcare professionals who have contact with anyone who has been assessed as being at high risk of developing a pressure ulcer. Training should include:

- how to carry out a risk and skin assessment
- how to reposition
- information on pressure redistributing devices
- discussion of pressure ulcer prevention with patients and their carers
- details of sources of advice and support.

1.4 Management: adults

Ulcer measurement

1.4.1 Document the surface area of all pressure ulcers in adults. If possible, use a validated measurement technique (for example, transparency tracing or a photograph).

1.4.2 Document an estimate of the depth of all pressure ulcers and the presence of undermining, but do not routinely measure the volume of a pressure ulcer.

Categorisation

1.4.3 Categorise each pressure ulcer in adults using a validated classification tool (such as the International NPUAP-EPUAP [2009] Pressure Ulcer Classification System). Use this to guide ongoing preventative strategies and management. Repeat and document each time the ulcer is assessed.

Nutritional supplements and hydration

1.4.4 Offer adults with a pressure ulcer a nutritional assessment by a dietitian or other healthcare professional with the necessary skills and competencies.

1.4.5 Offer nutritional supplements to adults with a pressure ulcer who have a nutritional deficiency.

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1.4.6 Provide information and advice to adults with a pressure ulcer and, where appropriate, their family or carers, on how to follow a balanced diet to maintain an adequate nutritional status, taking into account energy, protein and micronutrient requirements.

1.4.7 Do not offer nutritional supplements to treat a pressure ulcer in adults whose nutritional intake is adequate.

1.4.8 Do not offer subcutaneous or intravenous fluids to treat a pressure ulcer in adults whose hydration status is adequate.

Pressure redistributing devices

1.4.9 Use high-specification foam mattresses for adults with a pressure ulcer. If this is not sufficient to redistribute pressure, consider the use of a dynamic support surface.

1.4.10 Do not use standard-specification foam mattresses for adults with a pressure ulcer.

1.4.11 Consider the seating needs of adults who have a pressure ulcer who are sitting for prolonged periods.

1.4.12 Consider a high-specification foam or equivalent pressure redistributing cushion for adults who use a wheelchair or sit for prolonged periods and who have a pressure ulcer.

Negative pressure wound therapy

1.4.13 Do not routinely offer adults negative pressure wound therapy to treat a pressure ulcer, unless it is necessary to reduce the number of dressing changes (for example, in a wound with a large amount of exudate).

Hyperbaric oxygen therapy and electrotherapy

1.4.14 Do not offer the following to adults to treat a pressure ulcer:

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- electrotherapy
- hyperbaric oxygen therapy.

Debridement

1.4.15 Assess the need to debride a pressure ulcer in adults, taking into consideration:

- the amount of necrotic tissue
- the grade, size and extent of the pressure ulcer
- patient tolerance
- any comorbidities.

1.4.16 Offer debridement to adults if identified as needed in the assessment:

- use autolytic debridement, using an appropriate dressing to support it
- consider using sharp debridement if autolytic debridement is likely to take longer and prolong healing time.

1.4.17 Do not routinely offer adults with a pressure ulcer:

- larval (maggot) therapy
- enzymatic debridement.

  Consider larval therapy if debridement is needed but sharp debridement is contraindicated or if there is associated vascular insufficiency.

Systemic antibiotics and antiseptics

1.4.18 After a skin assessment, offer systemic antibiotics to adults with a pressure ulcer if there are any of the following:

- clinical evidence of systemic sepsis
- spreading cellulitis

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- underlying osteomyelitis.

1.4.19 Discuss with a local hospital microbiology department which antibiotic to offer adults with infection to ensure that the chosen systemic antibiotic is effective against local strains of infection.

1.4.20 Do not offer systemic antibiotics specifically to heal a pressure ulcer in adults.

1.4.21 Do not offer systemic antibiotics to adults based only on positive wound cultures without clinical evidence of infection.

Topical antimicrobials and antiseptics

1.4.22 Do not routinely use topical antiseptics or antimicrobials to treat a pressure ulcer in adults.

Dressings

1.4.23 Discuss with adults with a pressure ulcer and, if appropriate, their family or carers, what type of dressing should be used, taking into account:

- pain and tolerance
- position of the ulcer
- amount of exudate
- frequency of dressing change.

1.4.24 Consider using a dressing for adults that promotes a warm, moist wound healing environment to treat grade 2, 3 and 4 pressure ulcers.

1.4.25 Do not offer gauze dressings to treat a pressure ulcer in adults.

Heel pressure ulcers

1.4.26 Discuss with adults with a heel pressure ulcer and, if appropriate, their family or carers, a strategy to offload heel pressure as part of their individualised care plan.

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1.5 Management: neonates, infants, children and young people

Ulcer measurement

1.5.1 Document the surface area of all pressure ulcers in neonates, infants, children and young people, preferably using a validated measurement technique (for example, transparency tracing or a photograph).

1.5.2 Document an estimate of the depth of a pressure ulcer and the presence of undermining, but do not routinely measure the volume of a pressure ulcer in neonates, infants, children and young people.

Categorisation

1.5.3 Categorise each pressure ulcer in neonates, infants, children and young people at onset using a validated classification tool (such as the International NPUAP-EPUAP [2009]) Pressure Ulcer Classification System) to guide ongoing preventative and management options. Repeat and document each time the ulcer is assessed.

Nutritional supplements and hydration

1.5.4 Offer an age-related nutritional assessment to neonates, infants, children and young people with a pressure ulcer. This should be performed by a paediatric dietitian or other healthcare professional with the necessary skills and competencies.

1.5.5 Discuss with a paediatric dietitian (or other healthcare professional with the necessary skills and competencies) whether to offer nutritional supplements specifically to treat a pressure ulcer in neonates, infants, children and young people whose nutritional intake is adequate.

1.5.6 Offer advice on a diet that provides adequate nutrition for growth and healing in neonates, infants, children and young people with a pressure ulcer.

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1.5.7 Discuss with a paediatric dietitian whether to offer nutritional supplements to correct nutritional deficiency in neonates, infants, children and young people with a pressure ulcer.

1.5.8 Assess fluid balance in neonates, infants, children and young people with a pressure ulcer.

1.5.9 Ensure there is adequate hydration for age, growth and healing in neonates, infants, children and young people. If there is any doubt, seek further medical advice.

Pressure redistributing devices

1.5.10 Consider using specialist support surfaces (including dynamic support surfaces where appropriate) for neonates, infants, children and young people with a pressure ulcer, taking into account their current pressure ulcer risk and mobility.

1.5.11 Use a high-specification cot or bed mattress or overlay for all neonates, infants, children and young people with a pressure ulcer.

1.5.12 If pressure on the affected area cannot be adequately relieved by other means (such as repositioning), consider a dynamic support surface, appropriate to the size and weight of the child or young person with a pressure ulcer, if this can be tolerated.

1.5.13 Tailor the support surface to the location and cause of the pressure ulcer for neonates, infants, children and young people.

Negative pressure wound therapy

1.5.14 Do not routinely use negative pressure wound therapy to treat a pressure ulcer in neonates, infants, children and young people.

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Hyperbaric oxygen therapy and electrotherapy

1.5.15 Do not use the following to treat a pressure ulcer in neonates, infants, children and young people:

- electrotherapy
- hyperbaric oxygen therapy.

Debridement

1.5.16 Consider autolytic debridement with appropriate dressings for dead tissue in neonates, infants, children and young people. Consider sharp and surgical debridement by trained staff if autolytic debridement is unsuccessful.

Systemic antibiotics and antiseptics

1.5.17 Consider systemic antibiotics for neonates, infants, children and young people with a pressure ulcer with clinical evidence of local or systemic infection.

1.5.18 Discuss with a local hospital microbiology department which antibiotic to offer neonates, infants, children and young people with infection to ensure that the chosen systemic antibiotic is effective against local strains of bacteria.

Topical antimicrobials and antiseptics

1.5.19 Do not routinely use topical antiseptics or antimicrobials to treat a pressure ulcer in neonates, infants, children and young people.

Dressings

1.5.20 Consider using a dressing that promotes a warm, moist healing environment to treat grade 2, 3 and 4 pressure ulcers in neonates, infants, children and young people.

1.5.21 Consider using topical antimicrobial dressings to treat a pressure ulcer where clinically indicated in neonates, infants, children and young people, for example, where there is spreading cellulitis.

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1.5.22 Do not use iodine dressings to treat a pressure ulcer in neonates.

1.5.23 Do not offer gauze dressings to treat a pressure ulcer in neonates, infants, children and young people.

Heel pressure ulcers

1.5.24 Discuss with the parents or carers of neonates and infants and with children and young people (and their parents or carers if appropriate), a strategy to offload heel pressure as part of their individualised care plan to manage their heel pressure ulcer, taking into account differences in size, mobility, pain and tolerance.

[2] Please note that the examples given are not exhaustive.

[3] Healthcare professionals should be aware that non-blanchable erythema may present as colour changes or discolouration, particularly in darker skin tones or types.

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2 Research recommendations

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future.

2.1 Debridement

What is the effect of enzymatic debridement of non-viable tissue compared with sharp debridement on the rate of healing of pressure ulcers in adults?

Why this is important

Debridement of dead tissue is vital as its presence can delay healing and encourage infection. Although autolytic debridement via natural processes (supported by use of an appropriate dressing) is considered to be adequate for the majority of pressure ulcers, other methods, including mechanical, enzymatic, sharp debridement and larval therapy are available.

There is limited high quality evidence on whether removal of dead tissue via sharp (carried out at the bedside) or enzymatic debridement produces the best outcomes. Use of enzymatic debridement in the UK is limited and the availability of these agents is variable, however, it is used in other countries. Additionally, there is some evidence that it may be slower than sharp debridement and result in the removal of viable tissue.

Identifying the best method of debridement may have significant benefits, including reducing the length of time people with pressure ulcers need to stay in hospital.

2.2 Negative pressure wound therapy

Does negative pressure wound therapy (with appropriate dressing) improve the healing of pressure ulcers, compared with the use of dressing alone in adults with pressure ulcers?

Why this is important

Negative pressure wound therapy is used for a variety of wounds, including pressure ulcers. It aims to assist healing, reduce the surface area of a wound and remove wound exudate. Negative pressure wound therapy creates a suction force which helps drain the wound and

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promote wound healing. There is evidence to suggest some benefit in the use of negative pressure wound therapy in other wound areas (for example, surgical wounds) but there is limited evidence to support its use for pressure ulcers.

Negative pressure wound therapy is used variably across the NHS and many trusts have purchased or hired negative pressure wound therapy pumps. There would be benefits to patients and the NHS in establishing whether negative pressure wound therapy improves the healing of pressure ulcers.

2.3 Risk assessment in neonates, infants, children and young people

Which pressure ulcer tools are most effective for predicting pressure ulcer risk in children?

Why this is important

There are a few published pressure ulcer risk assessment tools for children, but most of these have no evidence of validity and over half have been developed from adult pressure ulcer risk assessment tools. Of the tools which have validation data, the evidence is mainly poor quality. When healthcare professionals are choosing a risk assessment tool to use in clinical practice, they should be looking for a tool that has evidence to demonstrate that it is good a predicting risk in the population of interest.

2.4 Pressure redistributing devices

Dopressure redistributing devices reduce the development of pressure ulcers for those who are at risk of developing a pressure ulcer?

Why this is important

Pressure redistributing devices are widely accepted methods of trying to prevent the development of pressure areas for people assessed as being at risk. These devices include different types of mattresses, overlays, cushions and seating. They may work by reducing or redistributing pressure, friction or shearing forces. There is limited evidence on the effectiveness of these devices and much of the evidence has been funded by industry. The cost of pressure redistributing devices can vary significantly and there is limited evidence on whether more

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sophisticated devices (for example, alternating pressure devices) provide any additional benefit compared to more basic devices such as high-specification foam mattresses.

There is also limited evidence on whether different at-risk sites benefit from using different pressure redistributing devices. For example, a pressure redistributing device used for pressure relief on one site could cause pressure on another site. Further research is needed to identify what devices are beneficial for specific at-risk sites for all age groups.

2.5 Repositioning

When repositioning a person who is at risk of developing a pressure ulcer, what is the most effective position – and optimum frequency of repositioning – to prevent a pressure ulcer developing?

Why this is important

It is generally accepted that repositioning people who are at risk of developing a pressure ulcer can prevent one developing by removing pressure from the at-risk site. Identifying the most effective position – and the optimum frequency of repositioning – will minimise discomfort and maximise pressure ulcer prevention.

There is limited evidence on the most efficient position and frequency of repositioning for all age groups. Many studies include people who are on pressure redistributing surfaces, so it is unclear whether prevention is because of the support surface or the repositioning. A randomised study of different frequencies and positions on a standard support surface (for example, a high-specification foam mattress) is needed.

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3 Other information

3.1 Scope and how this guideline was developed

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover.

How this guideline was developed

NICE commissioned the National Clinical Guideline Centre to develop this guideline. The Centre established a Guideline Development Group (see section 4), which reviewed the evidence and developed the recommendations.

The methods and processes for developing NICE clinical guidelines are described in The guidelines manual.

3.2 Related NICE guidance

Further information is available on the NICE website.

Published

General

- Patient experience in adult NHS services. NICE clinical guidance 138 (2012).
- Medicines adherence. NICE clinical guidance 76 (2009).

Condition-specific

- Incontinence in neurological disease. NICE clinical guideline 148 (2012).
- Lower limb peripheral arterial disease. NICE clinical guideline 147 (2012).
- Infection control. NICE clinical guideline 139 (2012).
- Diabetic foot problems. NICE clinical guideline 119 (2010).
- Surgical site infection. NICE clinical guideline 74 (2008).

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- Obesity. NICE clinical guideline 43 (2006).
- Nutrition support in adults. NICE clinical guideline 32 (2006).
- The Debrisoft monofilament debridement pad for use in acute or chronic wounds. NICE medical technologies guidance 17 (2014).
- The MIST Therapy system for the promotion of wound healing in chronic and acute wounds. NICE medical technologies guidance 5 (2011).
- End of life care for adults. NICE quality standard 13 (2011).

Under development

NICE is developing the following guidance (details available from the NICE website):

- Multiple sclerosis (update). NICE clinical guideline. Publication expected October 2014.
- Type 2 diabetes (update). NICE clinical guideline. Publication expected August 2015.
- Motor neurone disease. NICE clinical guideline. Publication expected February 2016.
- Parafricta bootees and undergarments to reduce skin breakdown in people with frail skin or at risk of pressure ulcers. NICE medical technologies guidance. Publication expected November 2014.

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About this guideline

NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions.

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover.

This guideline was developed by the National Clinical Guideline, which is based at the Royal College of Physicians. The Centre worked with a Guideline Development Group, comprising healthcare professionals (including consultants, GPs and nurses), patients and carers, and technical staff, which reviewed the evidence and drafted the recommendations. The recommendations were finalised after public consultation.

The methods and processes for developing NICE clinical guidelines are described in The guidelines manual.

NICE produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Update information

This guideline updates and replaces NICE clinical guideline 29 (published September 2005) and NICE clinical guideline 7 (published October 2003).

Strength of recommendations

Some recommendations can be made with more certainty than others. The Guideline Development Group makes a recommendation based on the trade-off between the benefits and harms of an intervention, taking into account the quality of the underpinning evidence. For some interventions, the Guideline Development Group is confident that, given the information it has

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looked at, most patients would choose the intervention. The wording used in the recommendations in this guideline denotes the certainty with which the recommendation is made (the strength of the recommendation).

For all recommendations, NICE expects that there is discussion with the patient about the risks and benefits of the interventions, and their values and preferences. This discussion aims to help them to reach a fully informed decision (see also Patient-centred care).

Interventions that must (or must not) be used

We usually use 'must' or 'must not' only if there is a legal duty to apply the recommendation. Occasionally we use 'must' (or 'must not') if the consequences of not following the recommendation could be extremely serious or potentially life threatening.

Interventions that should (or should not) be used – a 'strong' recommendation

We use 'offer' (and similar words such as 'refer' or 'advise') when we are confident that, for the vast majority of patients, an intervention will do more good than harm, and be cost effective. We use similar forms of words (for example, 'Do not offer…') when we are confident that an intervention will not be of benefit for most patients.

Interventions that could be used

We use 'consider' when we are confident that an intervention will do more good than harm for most patients, and be cost effective, but other options may be similarly cost effective. The choice of intervention, and whether or not to have the intervention at all, is more likely to depend on the patient's values and preferences than for a strong recommendation, and so the healthcare professional should spend more time considering and discussing the options with the patient.

Other versions of this guideline

The full guideline, 'Pressure ulcer prevention: the prevention and management of pressure ulcers in primary and secondary care' contains details of the methods and evidence used to develop the guideline. It is published by the National Clinical Guideline Centre.

The recommendations from this guideline have been incorporated into a NICE Pathway.

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We have produced information for the public about this guideline.

Implementation

Implementation tools and resources to help you put the guideline into practice are also available.

Your responsibility

This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summaries of product characteristics of any drugs.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

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