

# EffectivenessMatters

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## Preventing pressure ulcers



- **Pressure ulcers affect around 5% of patients: but the majority of these may be avoidable**
- **Pressure ulcers can become painful, infected and malodorous, reduce health related quality of life and increase length of hospital stay**
- **Multicomponent interventions are recommended, incorporating: pressure-relieving surfaces, skin inspections, repositioning of patients, incontinence/moisture management, and nutrition/hydration support**
- **Key to implementation are: simplification and standardisation of pressure ulcer specific interventions, multidisciplinary teams and leadership, accountability and celebrating success, designated skin champions and ongoing education**
- **There is evidence of cost savings from pressure-ulcer prevention programmes**

This issue of *Effectiveness Matters* has been produced by CRD in collaboration with the Yorkshire and Humber AHSN Improvement Academy. The views expressed in this bulletin are those of the authors and not necessarily those of the AHSN or the University of York.

## Background

Pressure ulcers are a serious concern, affecting around 5% of patients in England.<sup>1</sup> Yet an estimated 80%-95% of these may be avoidable.<sup>2</sup>

Pressure ulcers are a type of injury that breaks down the skin and underlying tissue due to impaired blood supply caused by pressure and/or friction, often over bony prominences. All patients confined to bed or a chair are potentially at risk of developing a pressure ulcer, particularly those unable to reposition themselves (e.g. unconscious or sedated). This risk is increased in those who are seriously ill, have significant cognitive impairment, inadequate nutrition, a neurological condition, impaired sensation or mobility, incontinence, poor posture, or deformity. Pressure ulcers can become painful, infected and malodorous, reduce health related quality of life,<sup>3</sup> and increase length of hospital stay.<sup>4</sup>

2004 estimates placed the cost of pressure ulcers to the NHS at £1.4 to 2.1 billion per year, equivalent to 4% of total NHS expenditure.<sup>5</sup> More recently, the cost of treating individual pressure ulcers has been estimated to range from £1,200 to £14,000, depending upon the stage of the wound.

As an indicator of the size and importance of the problem, the proportion of patients with category 2, 3 and 4 pressure ulcers has been included as part of the NHS Outcomes Framework for 2014/15.<sup>6</sup>

This issue of *Effectiveness Matters* summarises the evidence relating to the implementation of interventions to prevent pressure ulcers in hospital and community care settings. The bulletin is based on existing sources of synthesised and quality-assessed evidence.

## Single and multicomponent interventions

A number of standalone interventions to prevent pressure ulcers have been evaluated in high quality systematic reviews. These reviews have found convincing evidence of effectiveness for high-specification foam mattresses<sup>7</sup> but not for standalone nutritional interventions<sup>8</sup> or for the application of topical agents over bony prominences.<sup>9</sup> While both risk assessment and repositioning of patients are likely to be worthwhile practices, there is currently no clear evidence to favour one particular pressure ulcer risk assessment tool,<sup>10</sup> or a particular frequency or position for repositioning.<sup>11</sup>

In practice, multicomponent interventions or 'care bundles' are generally recommended over standalone interventions for the prevention of pressure ulcers. Recently, an NHS 'Stop the

Pressure' campaign was rolled out nationally to support a 50% reduction in pressure ulcer prevalence throughout winter 2013/14.<sup>2</sup> As well as providing educational resources, the campaign promotes the "SSKIN" care bundle that emphasises the need for a bundle of practices, incorporating appropriate pressure-relieving surfaces, skin inspections, repositioning of patients, incontinence/moisture management, and where necessary nutrition/hydration support.

## NICE guidance

NICE has identified a number of priorities for the implementation of interventions for the prevention and management of pressure ulcers.<sup>12</sup> These include:

- **Risk assessment** for all patients being admitted to secondary care or care homes, and in other settings if they have a risk factor (such as limited mobility or nutritional deficiency)
- Provision of a **skin assessment** for patients assessed as being at high risk of developing a pressure ulcer
- **Individualised care plans** for patients at high risk of developing a pressure ulcer, with a specific strategy to offload pressure in patients with heel ulcers
- Encouraging patients to reposition themselves frequently, offering help where necessary, and documenting the frequency of required **repositioning**
- Use of **high-specification foam mattresses** for all adults admitted to secondary care, and for those at high risk of developing a pressure ulcer in primary and community care settings
- Provision of **training and education** to healthcare professionals on predicting, identifying, preventing, and managing pressure damage

The NICE guideline further states that additional research is needed on debridement techniques, negative wound pressure therapy, risk assessment in children, pressure redistribution devices, and the optimum position and frequency for repositioning patients.

## Implementation

The American Association for Healthcare Research and Quality (AHRQ) report *Making Health Care Safer II*<sup>13</sup> assessed evidence on the implementation of multicomponent interventions for preventing in-facility pressure ulcers. This review included 23 moderate-quality studies.

Most multicomponent interventions evaluated in acute care settings were found to reduce pressure ulcer incidence and/or prevalence, though results were less consistent when such interventions were implemented in long-term care facilities. No harms were reported in either acute or long-term settings.

The settings and interventions were diverse: even within acute care settings, multicomponent interventions were implemented in organisations ranging in size from 18 to 800 beds. Some programmes were focused specifically on reducing pressure ulcer rates, while others formed part of comprehensive initiatives aimed at patient safety more broadly.

Across evaluation studies, implementation tools included audit and feedback, education and training, identifying specific groups of patients at risk, monitoring progress and compliance, and streamlining of products and processes.

A number of barriers to implementation of pressure ulcer prevention programmes were noted, including: difficulties expanding the scale of an existing programme, staffing barriers (lack of motivation, turnover, and resistance to change), limited resources, inconsistent or missing documentation, difficulties in exporting data for clinical decision-making reports, miscommunication between electronic systems, and increased ulcer rates following less frequent monitoring of processes.

In spite of these barriers, substantial reductions in pressure ulcer rates were observed across most of the included studies. The majority of successful pressure ulcer prevention initiatives incorporated the following key components:

- Simplification and standardisation of pressure ulcer specific interventions. One study reported a successful pressure ulcer prevention intervention that incorporated streamlining and standardisation of a skin product line, alongside rationalisation of seven existing policies and procedures into one.<sup>14</sup> Two studies reported that success was more easily sustained through the implementation of simple components (such as institution-wide pressure relieving mattresses) than more complex components (particularly those dependent on staffing).<sup>15,16</sup>
- Involvement of multidisciplinary teams and leadership. All studies specifically mentioned the influence of staff on implementation. Several studies attributed success to the engagement of multiple clinical disciplines<sup>14,15,17,18</sup> and strong support across different levels of leadership.<sup>15,17,19</sup>
- Ensuring leadership and staff accountability

## Key components of successful pressure ulcer prevention initiatives

- Simplification and standardisation of pressure ulcer specific interventions
- Multidisciplinary teams and leadership
- Ensuring leadership and staff accountability  
learning from front-line staff  
celebrating success  
sustained audit and feedback
- Designated skin champions
- Ongoing education
- Implementing change one unit at a time

and celebrating success. Typically, this has been achieved through sustained audit and feedback.

One study recommended that managers should anticipate a possible spike in reported skin breakdown immediately after the successful implementation of a programme, due to increased awareness, education and reporting among front-line staff.<sup>20</sup>

- Designated skin champions. In response to barriers such as high staff turnover, several studies suggested that wound care coordinators or similar specialist roles can help sustain improvements.<sup>16,17,18, 21-28</sup>
- Ongoing education. One study demonstrated the need for weekly reports indicating the completion of training to maintain initial improvements in ulcer rates.<sup>29</sup>
- Implementing change one unit at a time. One study reported an attempt to expand an initiative from a single critical care unit to all nursing units on two sites, noting difficulties in coordinating a skin committee, coordinating schedules, and tracking the acquisition of new equipment.<sup>19</sup>

## Economic evaluation

The AHRQ report included five US-based studies providing information on the costs of pressure ulcer prevention programmes. With the exception of one study that reported an increase in costs attributable to new technology,<sup>28</sup> all reported substantial cost-savings.<sup>24,27,30, 31</sup> One further US-based cost effectiveness analysis showed a programme for nursing care residents at risk of developing pressure ulcers to be effective and cost efficient.<sup>32</sup>

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## About Effectiveness Matters

*Effectiveness Matters* is a summary of reliable research evidence about the effects of important interventions for practitioners and decision makers in the NHS and public health. This issue is produced by CRD in collaboration with the Yorkshire and Humber AHSN Improvement Academy. *Effectiveness Matters* is extensively peer reviewed.

