

Prevention of pressure ulcers: could a care bundle approach be a success?

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Nurses and other healthcare professionals strive to do the best for their patients. However, in a world of increasing complexity, where hundreds of new clinical papers are published weekly, it is unrealistic to expect practitioners to perform the best evidence-based practices perfectly, 100% of the time, without some form of support mechanism. As leaders, we have a responsibility to propose and implement systems that support safe and reliable practice.

In many fields of health care, particularly in the sphere of infection prevention, the adoption of a 'bundle' approach to translating research into practice has paid great dividends, with demonstrable and sustainable reductions in morbidity and mortality (Pronovost et al, 2006, Pronovost et al, 2010). This approach seeks to consistently implement a relatively small number of interventions that are well supported by evidence of effectiveness. The evidence must demonstrate that each individual intervention reduces risk. However, the theory underpinning the implementation of a 'bundle' approach means that when auditing compliance with each aspect of care delivery, it is compliance with the entire bundle and not each of the individual elements that is recorded as an indicator of successful implementation of evidence-based care.

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the risks of complications. The individual elements in any bundle are accepted best practices, soundly based on evidence, and all practitioners should be familiar with them. This is, in itself, a problem when implementing a bundle approach. Sometimes the very fact that practitioners are aware of them may cause professionals to dismiss the bundle, as the elements are already known and are established individually. There is often an assumption that because these elements are familiar, they are obviously already being incorporated into everyday practice. Sadly, this assumption is not always accurate. It is important that we accept that in routine clinical practice, all elements of care may not always be performed consistently, leading to variations in the standards of care that patients receive. Therefore, a bundle aims to bind the elements together into a cohesive unit of care delivery that must be implemented for every patient and on every occasion. Ideally, all of the measures are necessary

and applicable in every case, and must all occur in the specified period and place.

Aristotle is credited with the expression, 'The whole is different from the sum of its parts', and, if one applies this to a bundle of care, this means that the effectiveness of the elements is magnified. Each individual aspect enhances the effect of the others and leads to the implementation of optimal performance for every patient.

This approach was first developed in reducing ventilator-associated pneumonia in the field of critical care (Resar et al, 2005), where units that consistently applied the bundle were able to reduce infection rates by 44%. This work was followed up with further studies demonstrating similar reductions in central line-related, catheter, and bloodstream infections at local (Berenholtz et al, 2004) and later state-wide levels (Pronovost et al, 2006). In this latter study, Pronovost et al reduced the rate of infection in central lines across the state of Michigan, from 7.7–1.4 infections per 1000 device-days. This work has demonstrated a high degree of sustainability (Pronovost et al, 2010).

Given the reported successes in the area of prevention of healthcare-associated infections (HAIs), there are other risks to healthcare service users that could be applied to these principles. Prevention of pressure ulcers would seem to be an ideal candidate for the construction and implementation of a bundle of measures aimed at reducing risk. However, attempts to implement this approach are thinly described in the

literature. One published paper (Baldelli and Paciella, 2008) has described an attempt to use a bundle approach to enhance education in pressure ulcer prevention. Eight simple elements were chosen (Table 1), and the educational programme was structured around increasing knowledge of preventative measures that staff should be implementing for patients at risk from pressure ulcers.

Although the authors audited the individual elements of the care bundle and remedied any shortcomings, there are no reported measurements of total bundle compliance. Feedback to clinicians also seems to have been restricted to information on pressure ulcer acquisition rates. It was not reported if overall compliance with the entire bundle of care was ever recorded, or whether this information was disseminated to the clinicians. This aspect of auditing compliance is important, as systemic failures at an organisational level can be readily detected, therefore directing future educational approaches aimed at remedying the deficit.

A more recently published paper (Gray-Siracusa, and Schrier, 2011) has followed the same approach in a critical care environment, producing reductions in pressure ulcer incidence. However similarly, data on the compliance with the bundle were not provided and it would have been beneficial to have seen if an increasing compliance correlated with a reduction in incidence.

There are a number of other advantages of bundle implementation, not the least of which is that if consistent and reliable practice is achieved, the effectiveness of any new interventions can be more readily assessed with a minimisation of confounding factors. Other significant advantages include providing organisations with quantifiable assurance that best practice is carried out. It also means that they can ensure that there are no differences in standards of care provided between different units and clinicians, and that systemic failures with specific aspects

of the bundle are being used to shape future service development and educational interventions.

The use of the best available evidence-based practice is particularly important in pressure ulcer prevention, as it remains an area where evidence is still being sought and clarified. For example, the importance of risk assessment tools (Moore and Cowman, 2008), and the effectiveness of support surfaces in the strategy of preventing pressure ulcers (McInnes et al, 2008). These are two major areas where evidence remains low grade. However, using a risk assessment tool for pressure ulcer development is recognised as an aide-memoire in assisting clinical judgement, and may provide a logical approach to how the risk assessment is undertaken. Again, there is some evidence that the use of higher specification foam mattresses rather than standard hospital foam mattresses may reduce the risk of pressure ulcer development (McInnes et al, 2008). In an area where evidence is less robust and where there is still confusion in practice as to which care is best to prevent pressure ulcers developing, a simple care bundle approach may be the answer.

It should be possible with the construction of a care bundle approach to create a simple checklist that would guide nurses in the right direction to provide preventative care to minimise the risks of pressure ulcer formation. The NHS in Scotland has been working on this approach, however at the time of writing there are no published outputs. We await the results of this work with great interest, as there is enormous potential for this model in enhancing practice and ensuring the best, evidence-based care is provided to all in need of it. This would standardise and streamline care, removing the margin for potential human error when nurses are working under increasing pressure. Pressure ulcer prevention is an ideal candidate for the introduction of a bundle that could potentially reduce risks to patients, while also lessening the impact of avoidable and costly complications to care providers. This is an area that has enormous potential for further research. **WUK**

Table 1

Bundle of measures recommended by Baldelli and Paciella (2008)

- ▶▶ Risk assessment using recognised tool
- ▶▶ Skin assessment on admission and eight-hourly
- ▶▶ Head of bed to be raised by <30 degrees
- ▶▶ Management of incontinence
- ▶▶ Turning and positioning at specified frequencies
- ▶▶ Heel elevation
- ▶▶ Nutritional assessment
- ▶▶ Pressure relief aids

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