

Avoidable pressure ulcer rates in six acute UK Trusts

KEY WORDS

- ▶ Avoidable pressure damage
- ▶ Incidence
- ▶ Pressure ulcer
- ▶ Unavoidable pressure damage

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It remains widely quoted that 95% of pressure ulcers (PUs) are avoidable. However, in the second year of reporting on six acute Trusts within NHS Midlands and East, pooled data collected between April 2013 and March 2014 on hospital-acquired category III–IV PUs again found the percentage of avoidable PUs to be less than a third of this 95% figure. In addition, this report includes category II PUs. The implications of these findings with regard to looking at avoidable PU prevention will be discussed in this article.

In 2013, Downie et al reported on results obtained from five acute UK Trusts (April 2012–March 2013) for all hospital-acquired category III–IV pressure ulcers (PUs) developed within these organisations. They described the reporting and validation methodology used by all five organisations to determine the avoidable or unavoidable status of their hospital-acquired category III–IV PUs. Prior to this publication, it was extensively cited in the literature that 95% of PUs were thought to be preventable and, therefore, ‘avoidable’ by definition (Hibbs, 1998; Arblaster, 1999; Clarkson, 2007; Stephen-Haynes, 2010). The figure of 95% of PUs are preventable originated from a comment that Hibbs made at a conference in 1988. However, Downie et al (2013) 25 years later concluded that only 43% of category III–IV PUs acquired within their organisations over a 1-year period were avoidable.

In this article, the authors are reporting a second year (April 2013–March 2014) of data on hospital-acquired category III–IV PUs; with the addition of category II PUs and a sixth acute Trust’s results. Again, the percentage of category II–IV PUs classified as avoidable or unavoidable will be discussed. The article will go on to consider the implications of these findings with regard to future areas of consideration when examining avoidable PU prevention.

METHOD

The six acute Trusts taking part in this project are all within the NHS Midlands and East area

and comprise of the following: four district general hospitals; one large university teaching hospital; and one tertiary acute specialist centre. Collectively, these institutions have approximately 3,625–3,841 beds (given seasonal fluctuations). Staff at these six Trusts report and investigate hospital-acquired category III–IV PUs as previously described by Downie et al (2013); for this analysis the methodology previously reported remains the same for category III–IV PUs.

The reporting of category II PUs in all six organisations is as follows:

- ▶ Incident form completed in the ward/unit in which the PU developed
- ▶ A tissue viability nurse (TVN) confirms and validates the PU grading on the incident form where possible — where patients are discharged or deceased prior to TVN seeing them; TVN validation cannot occur
- ▶ Full root cause analysis (RCA) ($n=1$ hospital), shortened RCA ($n=3$ hospitals) or avoidable/unavoidable checklist ($n=2$ hospitals) is commenced by the ward’s/unit’s senior nurse with multidisciplinary input, including the TVN for final sign-off
- ▶ Decision is made regarding the avoidability or unavoidability of the PU, this being made in conjunction with the senior nurse, TVN and in one hospital they go through a scrutiny panel
- ▶ Resulting action plan agreed, disseminated, monitored and evaluated.

Data analysed were collected between April 2013 and March 2014. In addition, this data will

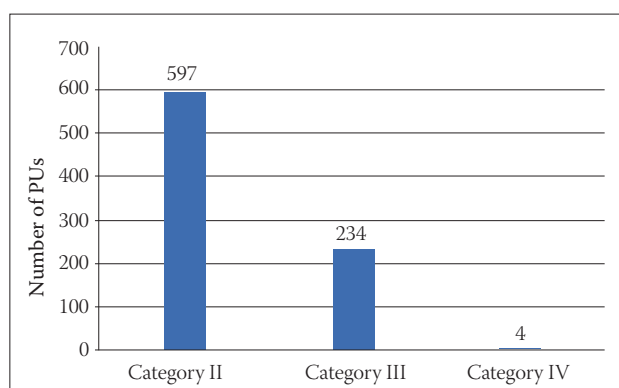


Figure 1. Total number of PUs developed within the six Trusts (2013–2014)

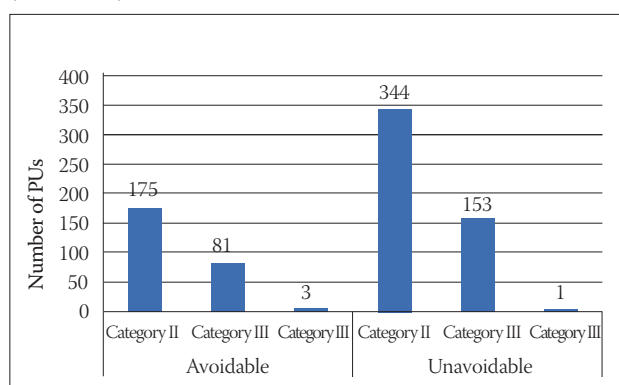


Figure 2. Avoidability of hospital-acquired PUs by category (2013–2014)

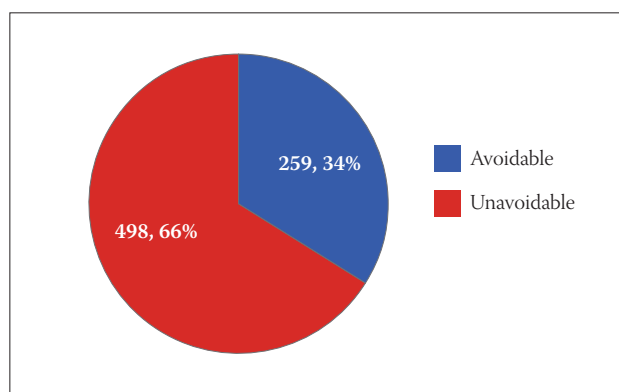


Figure 3. Percentage of patients with avoidable and unavoidable category II–IV PUs 2013–14

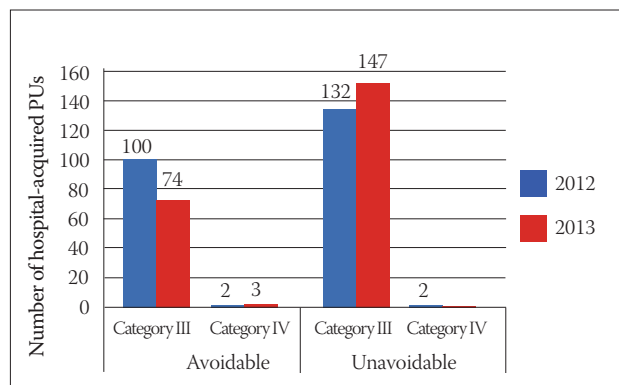


Figure 4. Comparison of category III and IV status 2012–2013 vs 2013–2014

be combined with the previous years' data (April 2012–March 2013) to present the full 2-year dataset – between April 2012 and March 2014.

RESULTS

For the study period April 2013–March 2014, there were 835 patients who acquired category II–IV PUs during their hospital stay. Of these PUs, 71.5% were category II, 28% category III and 0.5% were category IV (Figure 1). In this analysis, 78/597 of the category II PU incidents did not have an avoidable or unavoidable status assigned, as the voidable/unavoidable checklist or RCA was not documented as completed (this missing data was in 3/6 organisations only). In 2013/14, it was not mandatory to complete an RCA, so if an RCA for a category II PU was not returned to the TVN/risk department it was chased for completion to the area it developed once only. Therefore, for the purpose of analysis of avoidable versus unavoidable PUs in this paper, these 78 have not been included changing the total PUs included for analysis to 757. Of the 757 category II–IV hospital-acquired pressure ulcers (HAPUs) (Figure 2) included, 66% were deemed to be unavoidable and 34% avoidable (Figure 3). This rate was fairly consistent when the grades were divided out into category II (66% unavoidable) and categories III–IV (65% unavoidable). This compares favourably to the 57% unavoidable rate determined in the previous analysis (2012–13).

In order to compare the latest analysis (2013–14) to the previous analysis (2012–13), it is necessary to remove the additional organisation included in this analysis and the category II HAPUs from the comparison. This present analysis saw a 4.5% decrease in the total number of category III (232 compared to 221) HAPUs reported. However, when separated into avoidable category III HAPUs, there was a 26% decrease in the number (100 compared to 74) reported. There were the same number of category IV HAPUs in each analysis (four), with three being deemed avoidable in the latest analysis compared to two in the previous analysis (Figure 4).

DISCUSSION

This article reports that a figure of 35% of category III–IV HAPUs acquired within the six

organisations, over the second year of analysis, were avoidable. With the addition of the category II HAPUs, some 34% of PUs acquired within the six reporting organisations were avoidable. Examining the previously reported figure of 43% of category III–IV PUs acquired within the five organisations being avoidable (Downie et al, 2013), this article has shown a continued improvement in reducing the avoidable category III–IV PUs – a 9% improvement.

What is more challenging to report are those numbers of patients who were prevented from developing any pressure damage at all. It is, however, possible to speculate on the total number of PUs prevented using the data from one of the included organisations over a 4-year period (2010–14). This data include both avoidable and unavoidable category II–IV HAPU over the period from April 2010 to March 2014 (*Figure 5*). It demonstrates a year on year reduction in the number of patients developing a HAPU. Over this timeframe, there have been many patients who have been admitted to this organisation who may have gone on to develop a PU previously, but possibly because of practice improvements and heightened awareness, have not done so.

If practices in care had not changed beyond 2010, then it could be hypothesised that over the 4-year period a total of 2,084 patients ($n = 521$ patients \times 4 years) could have been expected to have developed category II–IV HAPUs during their hospital stay. However, because of improved prevention care delivery, 1,267 patients actually developed category II–IV HAPUs. This means a possible 39.2% ($n = 817$) of patients who might have developed a HAPU were prevented from doing so. This figure is conjectural, however.

Determining a statistically proven rate of preventability may not be possible. And yet, the rate of 95% of PUs being preventable (NHS Midlands and East, 2014), or indeed that most PUs can be prevented (Johansen et al, 2014) continues to be cited. What this article offers to the debate is a commentary about rates of avoidability for those patients who did develop HAPUs. It also offers some evidence that involvement with the NHS Midlands and East ambition (Guy et al, 2013) for one organisation meant that an overall improvement rate of 77% was seen in the

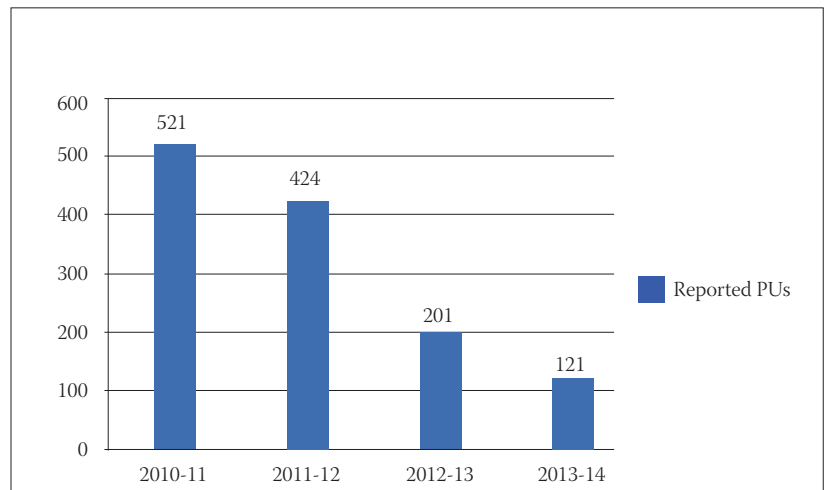


Figure 5: Total number of patients developing avoidable and unavoidable hospital-acquired PUs from 2010–14 in one of the reporting organisations.

number of patients developing both avoidable and unavoidable HAPUs.

It is important that organisations continue to learn from the continued scrutiny of RCAs and PU prevention care bundle audits. Both of these processes can highlight gaps in care and service delivery; disseminating the lessons learnt from these processes may, and should, lead to further reduction of avoidable PUs (McGregor Clarkson, 2013).

Ultimately, all organisations should be aiming for 100% of PUs acquired in their organisation as unavoidable. With better understanding of the root causes of avoidable category II–IV PUs acquired within our organisations, we are better placed to put in place the necessary strategies to prevent avoidable PU development. However, what about the unavoidable PUs? What lessons can be learnt from this category of PUs and what are the root causes of their development? If 66% of category II–IV PUs developed in this analysis are deemed unavoidable (i.e. have occurred despite best practice) this suggests the need for further understanding of their multifactorial development.

We need to further understand the development of PUs, particularly the bruised/discooured suspected deep tissue injury lesions (SDTIs), which are presently categorised as III until proven otherwise (NHS Midlands and East, 2012b). If an SDTI presents itself on the heel of a patient who has had a long theatre episode with a heel protective device in situ, and was unable to be repositioned for this period – possibly a significant period following theatre while they are haemodynamically unstable – but all other PU preventative measures are in place, this SDTI



Figure 6. Category III (SDTI) (NHS Midlands and East, 2012b) apex of 1st toe. HAPU from 2010–2014 in one of the reporting organisations.

would be classified as unavoidable. In this instance, the SDTI may not be due to pressure, but as a result of the patient being exposed to periods of ischaemia-reperfusion (Smart, 2013) because of physiological changes in perfusion to the tissues. If this is the case, the use of pressure redistributing/relieving surfaces in theatre will help with preventing pressure damage, but not necessarily with ischaemia-reperfusion injury due to physiological changes in perfusion, which may manifest itself as a dark bruised area to the heel, for example.

In addition, further understanding/research around the progression of SDTIs is essential to help prevent these lesions, such as a recent retrospective study where Sullivan (2013) looked at the trajectory of SDTIs and reported that only 12 (9.3%) out of 128 SDTIs observed actually deteriorated to full-thickness tissue loss. Of the remaining SDTIs,

85 (66.4%) were completely resolved or progressing to resolution, and 31 (24.2%) remained unchanged.

The 'unavoidable' definition used in this analysis was developed by NHS Midlands and East (2012a) expert working group. This definition highlights there are certain circumstances and clinical conditions that may result in the unavoidable development of a PU. It also details essential PU preventative strategies (*Box 1*) that need to be in place to prevent a PU occurring (NHS Scotland, 2011). If these strategies are in place and have been evaluated regularly with clear documented evidence to support this and then a PU develops despite these interventions, the ulcer is deemed unavoidable.

This leads to further discussion for our community partners. What is recognised as unavoidable in present times may in future actually be redefined as avoidable. For instance, if an older person falls undetected at home and fractures their femur, which results in a prolonged period of them lying on the floor leading to PU development, this may currently be classified as unavoidable. However, if their risk of falling had been identified and prevented or the length of time lying undetected could have been reduced, then the PU may have been avoidable. This kind of preventative activity requires involvement from

general practitioners (GP) and social services. The undertaking of an RCA in these situations requires going across the health and social care boundary and multidisciplinary working.

With the GP being at the centre of this person's health and social care, they are therefore arguably best placed to lead on any investigation. The national 2014–15 Commissioning for Quality and Innovation (CQUIN) target for PU reduction (NHS England, 2014) may start to improve prevention in these vulnerable groups and, as such, any PU development in this group of patients may be investigated with the possible outcome of being deemed avoidable rather than unavoidable.

Numbers of PUs are the common measure for outcome improvements. However, it is not just about numbers when it comes to PU damage. Since the NHS Midlands and East ambition was stated (Guy et al, 2013), it has been anecdotally reported by some TVNs that the type and severity of damage has changed. The size of the category III and IV PU is smaller and many of them are SDTIs rather than unstageable damage. With increased awareness amongst clinical staff about the importance of skin inspection to identify early signs of pressure damage, there has been an increased notification of SDTIs.

Perhaps, in previous years, many of these were not reported because they were small and not on the sacral area or heel (*Figure 6*) and, therefore, not recognised as pressure damage. With an increased recognition of SDTIs, it appears there may be better PU preventative measures put in place for this group of patients, hence the lesion being of a lesser severity.

Standardising a classification tool within a region-wide strategy for PU reduction raised awareness of SDTIs. Prior to the introduction of this classification tool, in some instances the purple

Box 1. PU preventative strategies.

- ▶▶ Risk assessment
- ▶▶ Skin inspection/management
- ▶▶ Pressure reducing/relieving equipment
- ▶▶ Repositioning schedule
- ▶▶ Management of incontinence/moisture
- ▶▶ Nutritional and hydration support

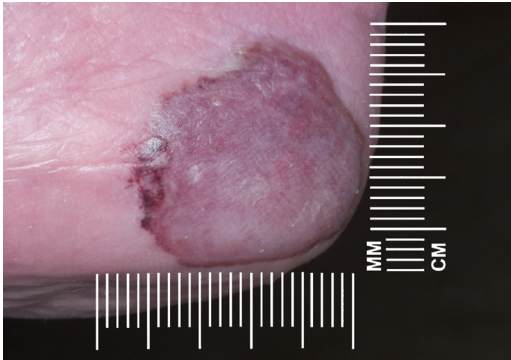


Figure 7. Purple discolouration on the heel such as this would now be classified as category III (SDTI).

discolouration may not have been recognised as pressure damage, perhaps it was considered a bruise (Figure 7) or blood blister (Figure 8). As such, there has been a decrease in the number of hospital-acquired PUs reported that are large and necrotic such as were seen prior to the NHS Midlands and East ambition (Guy et al, 2013).

CONCLUSION

With the continued uniformity and improvement in the reporting, documenting, and investigation of pressure damage it has been possible to accurately report the incidence of avoidable PUs in a large in-patient population. This present data analysis concluded that the 757 category II–IV HAPUs acquired over the six organisations, reported in this article, gave a 34% rate of avoidability (259/757). Again, this figure contradicts the widely quoted figure that 95% of PUs are avoidable.

With this continued evidence of reduction in avoidable HAPUs, it is now important to start scrutinising the HAPUs deemed unavoidable. There is a need to review what lessons can be learnt from this group of PUs. As discussed earlier in this article, it may be that in the future, with more cross-boundary working and a deeper understanding of SDTI PUs in place, we can start preventing PUs that are presently considered unavoidable. **WUK**

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Figure 8. Blood blister on the heel now classified as category III (SDTI).

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