Journal of Tissue Viability (2016) **25**, 16–25

ELSEVIER

JOURNAL OF tissueviability

www.elsevier.com/locate/jtv

Clinical study

# Pressure ulcer and wounds reporting in NHS hospitals in England part 2: Survey of monitoring systems

**Susanne Coleman** [a,*], **Isabelle L. Smith** [a], **Jane Nixon** [a], **Lyn Wilson** [a,b], **Sarah Brown** [a]

[a] *Leeds Institute of Clinical Trials Research, University of Leeds, Leeds, LS2 9JT, UK*
[b] *Mid Yorkshire Hospital NHS Trust, Wakefield, UK*

**KEYWORDS**
Pressure ulcer;
Incident reporting;
Adverse events;
Patient safety;
Improvement;
Harm

**Abstract** This is the second of a two related papers describing work undertaken to compare and contrast Pressure Ulcer (PU) monitoring systems across NHS in-patient facilities in England. The work comprised 1) a PU/Wound Audit (PUWA) and 2) a survey of PU monitoring systems.

This second paper focusses on the survey which explores differences in the implementation of PU adverse event monitoring systems in 24 NHS hospital Trusts in England. The survey questionnaire comprised 41 items incorporating single and multiple response options and free-text items and was completed by the PUWA Trust lead in liaison with key people in the organisation. All 24 (100%) Trusts returned the questionnaire, with high levels of data completeness (99.1%).

The questionnaire results showed variation between Trusts in relation to the recording of PUs and their reporting as part of NHS prevalence and incident monitoring systems and to Trust boards and healthcare commissioners including the inclusion (or not) of device ulcers, unstageable ulcers, Deep Tissue Injury, combined PUs/Incontinence Associated Dermatitis, category $\geq$ 1 ulcers or category $\geq$ 2 ulcers, inherited ulcers, acquired ulcers, avoidable and unavoidable ulcers and the definition of Present On Admission. These fundamental differences in reporting preclude Trust to Trust comparisons of PU prevalence and incident reporting and

*Abbreviations:* STh, Safety thermometer; STEIS, Strategic executive information system; SIs, Serious incidents; IRS, Incident reporting systems; PUWA, Pressure ulcer/wound audit; TVS, Tissue viability society; NHS, National health service; PU, Pressure ulcer; CQUIN, Commissioning for quality and innovation; NRLS, National reporting and learning system; CQC, Care quality commission; IAD, Incontinence associated dermatitis; POA, Present on admission; HA, Hospital acquired.

* Corresponding author.
*E-mail address:* medscole@leeds.ac.uk (S. Coleman).

http://dx.doi.org/10.1016/j.jtv.2015.11.002

monitoring systems due to variation in local application and data collection methods. The results of this work and the PUWA led to the development of recommendations for PU monitoring practice, many of which are internationally relevant.


## 1. Introduction

As part of a national safety agenda a number of initiatives have been introduced throughout the NHS in England to reduce avoidable pressure ulcer (PU) harm including prevalence reporting through the Safety Thermometer (STh) [1] and incident reporting through Incident Reporting Systems (IRS) [2], and the Strategic Executive Information System (STEIS) for the reporting of Serious Incidents [3]. Full details of the adverse event reporting monitoring systems are detailed elsewhere [13]. While these initiatives have been implemented across England, a lack of comprehensive guidance has led to concerns about variation in local implementation (e.g. type of ulcer to be reported, classification system to be used) and a subsequent lack of consistency for pressure ulcer reporting across the country [4].

A wider literature has also identified difficulties in the interpretation of adverse event data collected by designated teams [5—11], yet there is a prevailing culture of adverse event monitoring in the NHS in England. This raises concerns regarding inappropriate interpretation and comparisons of data between NHS organisations [4] and by healthcare Commissioners in their assessment of Trust[1] performance, with (in some cases) associated financial penalties [12]. The Tissue Viability Society (TVS) therefore funded a two-part project, supported by NHS England, to inform interpretation and further development of PU adverse event monitoring. The work comprised 1) a 'gold standard' Pressure Ulcer/Wound Audit (PUWA) [13] reported pp. 3—15 and 2) a survey of monitoring systems in participating hospitals.

In part 1 a PUWA [13] was conducted using 'gold standard' PU prevalence methods in a stratified random sample of NHS Trusts providing in-patient services for adult patient populations in England (reported pp. 3—15). Wards from a range of specialities were randomly selected from participating Trusts and included in the study which was conducted on the STh census date in October 2014. A total of 2239 patients were fully assessed as part of the PUWA from a total bed-base of 2468 beds across 121 wards randomly selected from 24 of 34 (70.6%) Trusts who agreed to participate. The results indicate high levels of under-reporting for all PU categories across existing monitoring systems. The high level of under-reporting of category 3 and 4 ulcers raises particular concerns because such ulcers are a serious patient harm [13].

While planning the part 1 PUWA the need to elicit further information and explore differences between Trusts in their recording and reporting of PUs in NHS adverse event monitoring systems was highlighted. This prompted part 2 of the project; a survey of the NHS hospitals in England who participated in part 1 and is the focus of this paper.

## 2. Aim

The aim of the survey was to explore differences between NHS Trusts in the implementation of PU adverse event monitoring systems (STh, IRS, STEIS) and the recording of PUs in nursing documentation.

## 3. Methods

Twenty-four UK NHS hospital Trusts who took part in part 1 PUWA [13] were invited to participate in a survey. The survey questionnaire comprised 41 items incorporating single and multiple response option items and free-text items about local practice for the recording and reporting of PUs in NHS monitoring systems (STh, IRS, STEIS) incorporating:

1. Routine reporting practice in nursing documentation i.e. classification systems used, and differentiation of different types of skin ulcers.
2. Local reporting practice for each monitoring systems for:
   a) Inclusion of device ulcers.
   b) Inclusion of unstageable ulcers.
   c) Inclusion of DTI.

[1] Hospitals and inpatient services are managed by NHS Trusts in England.

3. Specific system processes for IRS (a—g), STEIS (e, f and h) and STh (i) with regard to the:
   a) Inclusion of category $\geq 1$ or $\geq 2$ ulcers.
   b) Inclusion of combined pressure/IAD ulcers.
   c) Inclusion of inherited ulcers i.e. Present on Admission (POA).
   d) Inclusion of acquired ulcers i.e. Hospital Acquired (HA).
   e) Inclusion of avoidable.
   f) Inclusion of unavoidable ulcers.
   g) Definition for inherited ulcers.
   h) Deterioration.
   i) Data collection methods.
4. Validation processes for each monitoring system.
5. Data reporting to Trust Boards and Healthcare Commissioners including the data sources used and the type, categories, origin (i.e. POA or HA) and attribution (i.e. avoidable or unavoidable) of ulcers reported and PU targets.

The survey questionnaire was reviewed by the authors and an external PU professional group to ensure face and content validity. It was also piloted prior to implementation to ensure it was easy to understand and use. No formal ethical scrutiny was required or sought for this survey. Questionnaires were completed electronically or by hand by the PUWA Trust lead in liaison with appropriate key people in the organisation [13]. Completed questionnaires were entered onto a secure, bespoke spreadsheet and analysis was undertaken using simple descriptive statistics.

## 4. Results

All 24 (100%) NHS Trusts included in the part 1 PUWA [13] participated in the survey and there were high levels of data completeness (99.1%). The questionnaire results are presented as routine practice in nursing documentation, local reporting practice for adverse event monitoring systems, specific system processes, validation processes for monitoring systems, reporting to Trust Boards and NHS Commissioners and PU targets.

### 4.1. Nursing documentation

All Trusts reported that they use the NPUAP/EPUAP (2009) classification system or an adaptation of it within their nursing documentation (Fig. 1). Only 5 (20.8%) Trusts use the full classification (categories 1—4 and Unstageable and Deep Tissue Injury), 4 (16.7%) use categories 1—4 and Unstageable, 11 (45.8%) use categories 1 to 4 only, and 4 (16.7%) use the NHS Midlands and East Classification which is an adaptation of the NPUAP/EPUAP(2009) classification where unstageable ulcers are recorded as category 3.

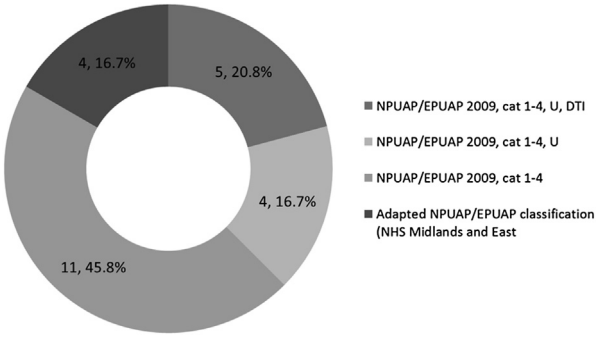


**Fig. 1** Pressure ulcer classification systems used in nursing documentation.

A majority of participating Trusts (20/24 83.3%) indicated that they recognised the difference between PUs and Incontinence Associated Dermatitis (IAD) in their nursing documentation. IAD was documented as a Moisture lesion by (20/24, 83.3%) participating Trusts with only 4/24 (16.7%) using both Moisture lesion and IAD terminology. A large proportion of Trusts (17/24, 70.8%) indicated that they do not distinguish between PUs and device related ulcers in their nursing documentation.

### 4.2. Local reporting practices

Of the 24 Trusts, the majority indicated that they include reports of device ulcers within their PU adverse event monitoring systems including 75.0% for STh, 87.5% for IRS and 75.0% for STEIS. There is variation in the way in which participating Trusts indicated they reported unstageable and DTI PUs across reporting systems (Fig. 2), with differences noted between classification for clinical records and actual reporting on the monitoring systems. An important minority of Trusts (8.3—25.0%) do not report Unstageable PUs with slightly higher levels of non-reporting for DTI (25—37.5%) (Fig. 2). However, additional comments by Trusts suggested the PU would be reported once the category of ulcer (1—4) could be established with a period of 'watchful waiting'.

### 4.3. Specific monitoring system processes

#### 4.3.1. IRS

There were 16 (66.7%) Trusts who confirmed that they report combined PU/IADs and 11 (45.8%) who report IAD to the IRS. Trusts were asked to confirm

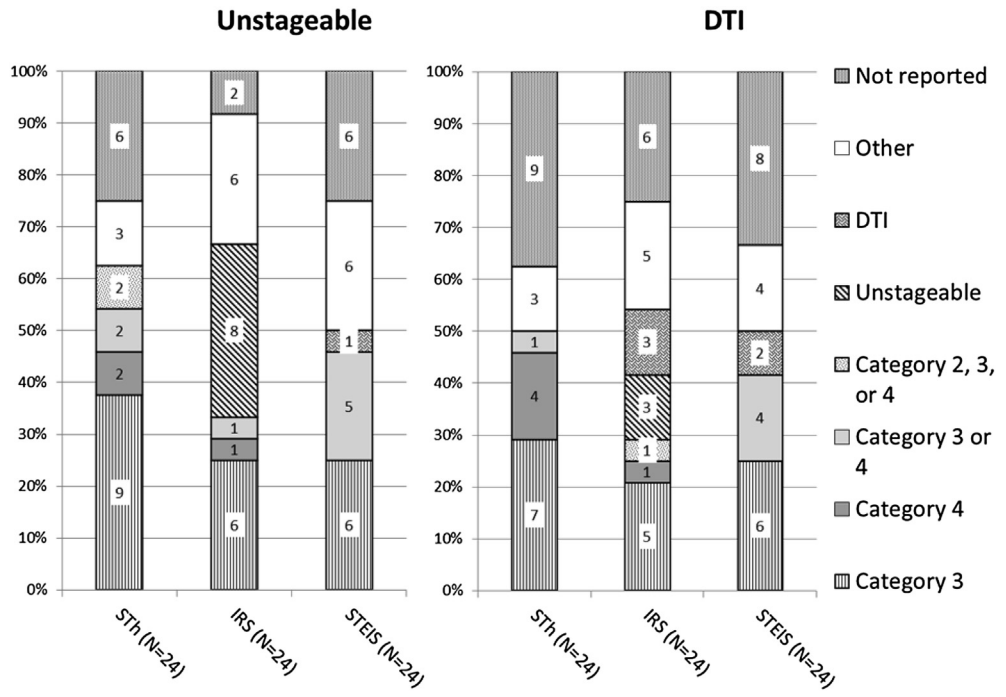


**Fig. 2** Category reported for unstageable and DTI PUs across different adverse event monitoring systems.

the categories of PUs included in their IRS reporting. Fifty per cent of Trusts confirmed that they report category 1 and above ulcers, and 50% report category 2 and above ulcers to IRS.

Most Trusts indicated that they routinely reported whether PUs were POA (23/24, 95.8%) or HA (22/24, 91.7%) on the IRS. It should be noted that there was variation in the way that POA was defined with 10/24 (41.7%) Trusts indicating this would be reported if a PU was recorded during the 'on admission' skin assessment and 12/24 (50.0%) Trusts indicating they use the STh definition of an 'Old' PU, that is, if recorded at any time within 72 h of admission (Fig. 3). There were 10 (41.7%) Trusts who also report whether the PUs were avoidable or unavoidable on the IRS.

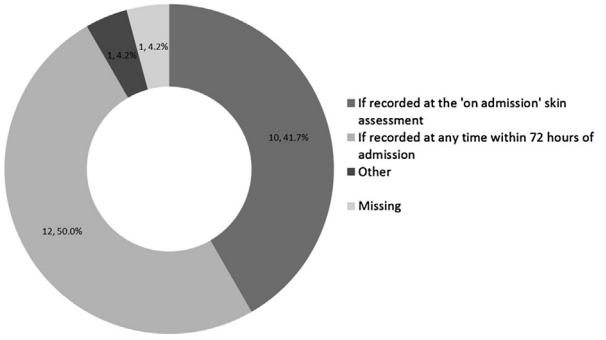


**Fig. 3** Definition of present on admission (POA).

#### 4.3.2. STEIS

The majority (19/24, 79.2%) of Trusts indicated that they do not assess whether ulcers are avoidable before reporting to STEIS, and 15 (62.5%) Trusts do not remove PUs from STEIS if they are subsequently found to be unavoidable. Additionally, if a STEIS reported PU deteriorates, just over half (13/24, 54.2%) of the Trusts confirmed that they would submit a further report to document this.

#### 4.3.3. Safety thermometer

Table 1 details the initial data collection methods used for STh and the use of patient identifiers (e.g. NHS number, hospital number, date of birth) varies, with 10/24 (41.7%) confirming that they do use patient identifiers for their initial data collection, and 13/24 (54.2%) confirming that they do not.

### 4.4. Validation processes for each monitoring system

The majority of Trusts had validation processes in place for the STh submission (17/24, 70.8%) and IRS (22/24, 91.7%). The categories of ulcer validated for IRS varied, though all Trusts (with a

**Table 1** Initial data collection methods for safety thermometer.

| | N = 24 |
|---|---|
| On paper with no patient identifiers (e.g. NHS number, hospital number, date of birth) | 5 (20.8%) |
| On paper with patient identifiers | 5 (20.8%) |
| Electronically with patient identifiers | 3 (12.5%) |
| Combination of paper and electronic with no patient identifiers | 8 (33.3%) |
| Combination of paper and electronic with patient identifiers | 2 (8.3%) |
| Missing | 1 (4.2%) |

validation process) confirmed that it was in place for all category 3 and category 4 PUs (Table 2). Questions around the validation of data reported to STEIS were not applicable because the report requires investigation of the ulcer as a serious incident.

Participating Trusts indicated that the Tissue Viability Nurse was the most likely person to undertake ulcer validation for the IRS (21/22, 95.5%), with a number of Trusts indicating a range of staff were involved including Ward Sisters/Managers (6/22, 27.3%), Matrons (8/22, 36.4%) and other staff (2/22, 9.1%) including a PU Panel (including the Director of Nursing) and a Community Nursing Sister. For STh Tissue Viability Nurses were also most likely to undertake the validation process (11/17, 64.7%) with Ward Sister/Managers (5/17, 29.4%), Matrons (4/17, 23.5%) and other staff (6/17, 35.3%) also being involved (including Quality Assurance Nurses, Audit Leads, Specialist Nurse practitioners from other fields (i.e. falls), Senior Staff Nurse and Deputy Chief Nurse).

Validation methods varied across Trusts and monitoring systems and included; direct assessment of the patient, liaison with the ward/discussion about the patient, from patient clinical record, checking against IRS and/or additional internal registers (Table 2). It is noteworthy that the validation process for the IRS (21/22, 95.5%) was more likely to involve direct assessment of the patient than the STh (10/17, 58.8%), as well as the use of other data sources. For STh the validation process would more likely involve liaison with the ward/discussion about the patient (13/17 76.5%) (Table 2).

**Table 2** Validation processes including the category of ulcers validated and methods.

| | STh (N = 17) | IRS (N = 22) |
|---|---|---|
| **Category of PUs validated** | | |
| Category 1 | N/A | 7 (31.8%) |
| Category 2 | N/A | 20 (90.9%) |
| Category 3 | N/A | 22 (100.0%) |
| Category 4 | N/A | 22 (100.0%) |
| Unstageable | N/A | 19 (86.4%) |
| DTI | N/A | 14 (63.6%) |
| **Validation methods** | | |
| Direct assessment of the patient | 10 (58.8%) | 21 (95.5%) |
| Liaison with the ward/discussion about the patient | 13 (76.5%) | 15 (68.2%) |
| From patient clinical records | 5 (29.4%) | 13 (59.1%) |
| Checked against incident reporting system | 8 (47.1%) | N/A |
| Checked against additional internal register | 2 (11.8%) | 0 (0.0%) |
| Other | 1 (5.9%) | 3 (13.6%) |

## 4.5. Reporting to trust boards and healthcare commissioners and targets

Local reporting requirements to respective Trust Boards and health service commissioners were explored. Respondents indicated that multiple data sources are reported to Trust Boards including STh data (24/24, 100.0%), IRS (21/24, 87.5%), and STEIS (24/24 100.0%), with a similar proportion of Trusts reporting this data to the local health service Commissioners (Table 3). The majority of Trusts included both PUs and device ulcers, though 3 Trusts do not report device ulcers to the Trust Boards and Commissioners (Table 3). The results indicate that while some Trusts reported incidents of all ulcer categories to their Trust Board and Commissioners only Category 4 PUs were reported by all responding Trusts to both their Trust Board and Commissioners. There was variation in the reporting of unstageable and DTI ulcers with the largest proportion (29.2%) indicating they would be reported as category 3 ulcers. DTI ulcers were less likely to be reported to Trust boards/commissioners compared to unstageable ulcers (Fig. 4).

When considering the origin and attribution of PUs, responses from participating Trusts indicated variation in the type of reporting undertaken. The largest proportion indicated that all four PU types 'POA, HA, Avoidable, Unavoidable' would be

**Table 3** Reporting of PUs to trusts boards and commissioners.

| | Trust board N = 24 | Commissioners N = 24 |
|---|---|---|
| **Data sources reported** | | |
| STh | 24 (100.0%) | 21 (87.5%) |
| IRS | 21 (87.5%) | 23 (95.8%) |
| Other | 1 (4.2%) | N/A |
| Missing | 0 (0.0%) | 1 (4.2%) |
| **STEIS reported PUs** | | |
| Yes | 24 (100.0%) | 23 (95.8%) |
| No | 0 (0.0%) | 1 (4.2%) |
| **Type of ulcers included in reported incidents** | | |
| PUs | 24 (100.0%) | 23 (95.8%) |
| Device ulcers | 21 (87.5%) | 20 (83.3%) |
| Missing | 0 (0.0%) | 1 (4.2%) |
| **Categories included** | | |
| Category 1 | 10 (41.7%) | 11 (45.8%) |
| Category 2 | 21 (87.5%) | 17 (70.8%) |
| Category 3 | 23 (95.8%) | 23 (95.8%) |
| Category 4 | 24 (100.00%) | 23 (95.8%) |
| Unstageable | 12 (50.0%) | 10 (41.7%) |
| DTI | 6 (25.0%) | 7 (29.2%) |
| Missing | 0 (0.0%) | 1 (4.2%) |
| **PU origin and attribution in reported incidents** | | |
| POA, HA, avoidable, unavoidable | 8 (33.3%) | 9 (37.5%) |
| POA only | 0 (0.0%) | 1 (4.2%) |
| POA, HA | 2 (8.3%) | 4 (16.7%) |
| POA, HA, avoidable | 1 (4.2%) | 2 (8.3%) |
| HA only, | 3 (12.5%) | 2 (8.3%) |
| HA, Avoidable | 3 (12.5%) | 1 (4.2%) |
| HA, avoidable, unavoidable | 7 (29.2%) | 3 (12.5%) |
| Avoidable only | 0 (0.0%) | 1 (4.2%) |
| Missing | 0 (0.0%) | 1 (0.0%) |
| **PU data reported** | | |
| Number of patients with PUs | 10 (41.7%) | 10 (41.7%) |
| Number of patients with PUs, number of pressure/device ulcers | 1 (4.2%) | 0 (0.0%) |
| Number of patients with PUs, number of PUs, % of patients with PUs/number of admissions | 0 (0.0%) | 1 (4.2%) |
| Number of patients with PUs, number of PUs, number of PUs/1000 bed days | 1 (4.2%) | 2 (8.3%) |
| Number of patients with PUs, % of patients with PUs/ number of admissions | 1 (4.2%) | 1 (4.2%) |
| Number of patients with PUs, % of patients with PUs/ number of admissions, number of PUs/1000 bed days | 1 (4.2%) | 0 (0.0%) |
| Number of patients with PUs, number of PUs/1000 bed days | 2 (8.3%) | 1 (4.2%) |

(*continued on next page*)

Table 3 (*continued*)

| | Trust board N = 24 | Commissioners N = 24 |
|---|---|---|
| Number of patients with PUs and other[a] | 1 (4.2%) | 1 (4.2%) |
| Number of PUs | 4 (16.7%) | 1 (4.2%) |
| Number of PUs, % of patients with PUs/number of admissions | 1 (4.2%) | 1 (4.2%) |
| Number of PUs, number of PUs/1000 bed days | 2 (8.3%) | 2 (8.3%) |
| Number of PUs, other[a] | 0 (0.0%) | 1 (4.2%) |
| Other[a] | 0 (0.0%) | 2 (8.3%) |
| Missing | 0 (0.0%) | 1 (4.2%) |

[a] Other: local reporting of varied PU data.

included in their reporting to the Trust Board (8/24, 33.3%) and Commissioners (9/24, 37.5%). Respondents reported 13 different combinations of ways in which PU information was reported to Trust Boards and Commissioners, although the largest proportion of Trusts (10/24, 41.7%) indicated they reported 'number of patients with PUs' only (Table 3).

A large proportion (19/24, 79.2%) of participating Trusts indicated they had Commissioning targets for PUs. The targets were developed locally and the 18 descriptions provided could not be categorised but 3 examples include; elimination of avoidable grade 2,3 and 4 PUs, reduction of old and new PUs by 40% from a 5% baseline, 10% reduction in the number of patients with avoidable PUs. The detail of these targets and associated financial penalties/incentives for 18 Trusts indicate great variation in Commissioning practices.

## 5. Discussion

The results of the survey add to the wider international debate relating to the interpretation of adverse event data and changes over time to assess improvement in patient safety and reductions in patient harms [5—11]. In this study we have described the local implementation of a national policy framework for one adverse event, PUs. We have identified considerable variation in the local implementation of national policy, in the

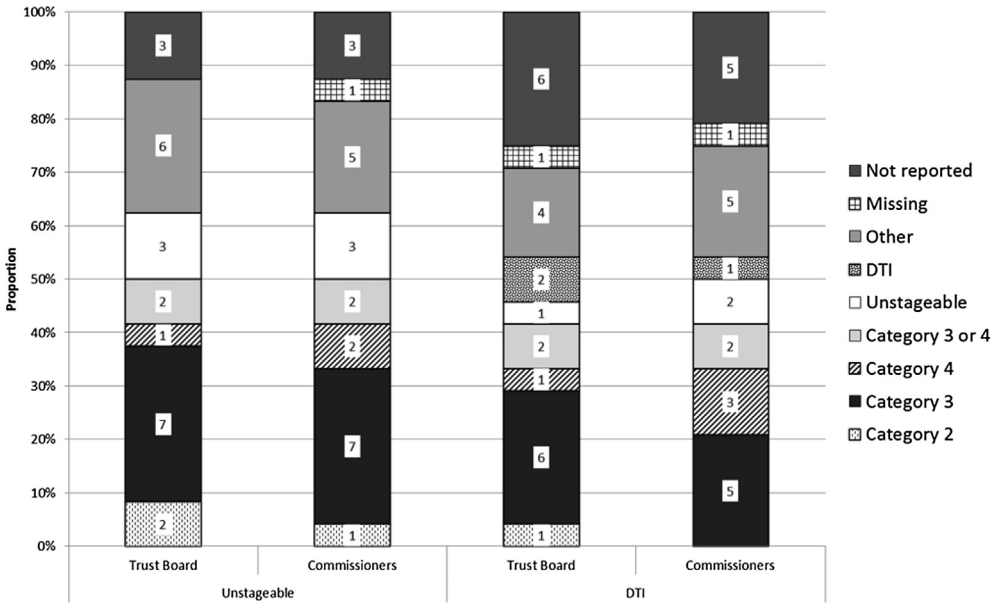


**Fig. 4** Category reported for unstageable and DTI PUs to trust boards and commissioners.

absence of clearly defined parameters for the reporting of PUs. Lack of standardisation is also an international concern with recent guidance incorporating PU outcome indicators and emphasising the need for consistency in PU prevalence and incidence studies [14].

Our findings demonstrate that the international PU classification system [14] incorporating categories 1—4, unstageable and DTI ulcers have not been fully adopted in England. Further work should be undertaken internationally to establish whether adoption difficulties are encountered elsewhere and how these can be addressed. We found that at a basic level there is variation in the definition of inherited (i.e. POA) PUs and the classification system used, particularly in relation to the inclusion of unstageable and DTI ulcers. These categories are therefore inconsistently reported across all PU reporting and adverse event monitoring systems and to Trust Boards and Commissioners. There is also inconsistent reporting of category 1 PUs in IRS and to Trust Boards and Commissioners. Whilst it can be argued that the impact of the inclusion or not of device ulcers, combined pressure/IAD, unstageable ulcers and DTI in both STh and IRS is small, due to the small proportion of these ulcers overall [13], concerns about these issues have previously dominated arguments about Trust to Trust comparisons [4] and missed the real issue identified by the PUWA, which is high levels of under-reporting [13].

In the previous consensus work undertaken by the Tissue Viability Society [4] there was consensus on the inclusion or not of combined pressure/IAD, unstageable, DTI, avoidable and unavoidable ulcers and that the STh 72 h definition of 'Old' should be discarded. The inclusion of category 1 or inherited/acquired PUs was not discussed as these were already defined as part of the STh reporting process, i.e. the STh data reporting includes both inherited and acquired ulcers (the issue was the 72 h definition) and require only category 2 and above ulcers [13].

Results indicate that in a representative group of randomly selected Trusts, despite previous recommendations, there remains local interpretation and inclusion/definition of 3 data components reported to STh (items 1—3 below) and 9 components in data reported from IRS to NLRS, Trust Boards and Commissioners as follows:

1) Inclusion of device ulcers (yes or no).
2) Inclusion of unstageable ulcers (yes or no).
3) Inclusion of DTI (yes or no).
4) Inclusion of combined pressure/IAD ulcers (yes or no).
5) Inclusion of category $\geq$ 1 ulcers or category $\geq$ 2 ulcers.
6) Inclusion of inherited ulcers (yes or no).
7) Inclusion of acquired ulcers (yes or no).
8) Inclusion of avoidable and unavoidable ulcers (yes or no).
9) POA definition or STh 72 h definition of 'Old' for inherited ulcers.

These fundamental differences in reporting preclude Trust to Trust comparisons, even for STh, as despite its written methodology there is variation in its local application and data collection methods. The interpretation of data from the NHS PU adverse event monitoring systems in England is further complicated by the use of clinical staff to capture adverse event data within the monitoring systems and the completeness of clinical records with high levels of under-reporting [13].

While in the present study we have focussed on PU adverse event monitoring systems in England, the principles of the 9 components have international relevance for ensuring a consistent approach. Variation in their adoption needs careful consideration prior to making comparisons between different healthcare organisations, hospitals or countries.

## 6. Conclusion

In this survey we have described the local implementation of a national policy framework for one adverse event, PUs by comparing current data sources including in-patient STh prevalence data and incident reporting to the IRS and STEIS. The key findings indicate substantial variation in the local implementation of national policy, demonstrated by different definitions and variation in data collection and validation processes. These differences preclude Trust-to-Trust comparisons of PU prevalence and incident rates. The results add to the wider international debate relating to the interpretation of adverse event data and its use in patient safety improvement initiatives.

The collective findings of the part 1 PUWA work [13] and the part 2 survey indicate that current systems used on a local, regional and national level to monitor PU patient harm lack standardisation, are characterised by high levels of under-reporting and despite their limitations have been used to compare Trusts and in some cases lead to financial penalties. Consideration of this work led to the development of 5 key recommendations to improve future PU monitoring, many of which are

internationally relevant as detailed below (NB: specific points relevant to England only are denoted with[2]):

## 7. Recommendation 1

### 7.1. National policy makers, commissioners and others reviewing PU monitoring should

a) Understand the limitations of the data sources.
b) Implement a checklist to confirm use of the 9 key numerator PU monitoring components (see recommendation 2).
c) Consider the impact of deviations from the standard 9 key numerator components upon PU rates (see recommendation 2).
d) Assess the level of under-reporting to support informed data interpretation.
e) Take into account the original purpose of the PU monitoring system (for example, to understand the scale of problem or to provide a benchmark for local improvement).
f) Avoid comparisons between Trusts (or hospitals and other healthcare organisations).
g) Rationalise the burden of multiple data collection approaches taking into account local utility of PU reporting.
h) Incentivise improvements in data capture methods.[2]
i) cross reference IRS and STEIS data.[2]

## 8. Recommendation 2

### 8.1. Standardise 9 key numerator components of PU monitoring systems

1) Inclusion of device ulcers (yes).
2) Inclusion of combined pressure/IAD ulcers (yes).
3) Inclusion of unstageable ulcers (yes).
4) Inclusion of DTI (no, until category can be established).
5) Inclusion of category $\geq$ 2 ulcers (not category $\geq$ 1).
6) Inclusion of inherited ulcers (yes).
7) Inclusion of acquired ulcers (yes).
8) Inclusion of avoidable and unavoidable ulcers (yes).
9) Use of the POA definition for inherited ulcers (yes), i.e. discard the STh 72 h. definition of 'Old'[2]

## 9. Recommendation 3

### 9.1. National policy makers should

a) Consider streamlining the current requirement of 3 data reporting systems (STh, NLRS and STEIS).[2]
b) Clarify to commissioners the terms prevalence, incidence and incident monitoring and if applicable (i.e. prevalence and incidence only) define the denominator.[2]
c) Undertake further work with the clinical community and data experts to consider how ulcers which have deteriorated are captured in incident reports.
d) Clarify the requirements for removal from STEIS of severe PUs later assessed as unavoidable.[2]

## 10. Recommendation 4

### 10.1. Trusts should

a) Establish local systems which improve the accuracy of PU reporting.[2]
b) Make incident reports clearly accessible in the clinical record.[2]
c) Improve handover systems at ward level which ensure all harms are known to the nurse in charge.[2]
d) Improve the process of escalating category 3 and 4 PUs reported as incidents on the local IRS to STEIS.[2]

## 11. Recommendation 5

### 11.1. Clinical, performance, improvement, commissioning and academic professionals should

Work together to explore methods to improve data capture and accurate reporting; the benefits of monitoring patient harm and; the use of data to incentivise reductions in harm.

## Conflict of interest statement

No conflict of interest has been declared by the authors.

## Acknowledgements

The authors are extremely grateful to the following organisations and people for their support in undertaking this work:

NHS England's Patient Safety Domain.

NHS England—North (Yorkshire & the Humber) Pressure Ulcer Safeguarding Professional Reference Group.

The 24 participating NHS Trusts and their staff.

Val Henderson, Clinical Lead Tissue Viability, Northumbria Healthcare Foundation Trust.

Margaret Broome, Wound Care Research Nurse, Harrogate and District NHS Foundation Trust.

Tracy Vernon, Lead Nurse - Tissue Viability, Doncaster & Bassetlaw Hospitals NHS Foundation Trust.

This publication presents independent research funded by the Tissue Viability Society. The views expressed in this publication are those of the author(s) and not necessarily those of the Tissue Viability Society.

## References

[1] HSCIC. NHS safety thermometer: annual publication, patient harms and harm free care England. April 2012—March 2014, official statistics. H.a.S.C.I. Centre, Editor. HSCIC; 2014.

[2] NPSA. Seven steps to patient safety: full reference guide. NPSA, Editor. London: NPSA; 2004.

[3] NHS-England. Serious incident framework. N.E.P.S. Domain, Editor: London. 2015.

[4] Dealey C, Chambers T, Beldon P, Benbow M, Fletcher J, Fumarola S, et al. Achieving consensus in pressure ulcer reporting. J Tissue Viability 2012;21(3):72—83.

[5] Shojania KG, Marang-van de Mheen PJ. Temporal trends in patient safety in the Netherlands: reductions in preventable adverse events or the end of adverse events as a useful metric? BMJ Qual Saf 2015.

[6] Baines R, Langelaan M, de Bruijne M, Spreeuwenberg P, Wagner C. How effective are patient safety initiatives? A retrospective patient record review study of changes to patient safety over time. BMJ Qual Saf 2015;24(9):561—71.

[7] Vincent C, Amalberti R. Safety in healthcare is a moving target. BMJ Qual Saf 2015.

[8] Baines RJ, Langelaan M, de Bruijne MC, Asscheman H, Spreeuwenberg P, van de Steeg L, et al. Changes in adverse event rates in hospitals over time: a longitudinal retrospective patient record review study. BMJ Qual Saf 2013;22(4):290—8.

[9] Shojania KG, Thomas EJ. Trends in adverse events over time: why are we not improving? BMJ Qual Saf 2013;22(4):273—7.

[10] Landrigan CP, Parry GJ, Bones CB, Hackbarth AD, Goldmann DA, Sharek PJ. Temporal trends in rates of patient harm resulting from medical care. N Engl J Med 2010;363(22):2124—34.

[11] Tanner J, Padley W, Kiernan M, Leaper D, Norrie P, Baggott R. A benchmark too far: findings from a national survey of surgical site infection surveillance. J Hosp Infect 2013;83(2):87—91.

[12] TVS. Pressure ulcer prevalence monitoring and interpretation of safety thermometer data a briefing paper for commissioners and NHS trusts. 2013. http://tvs.org.uk/wp-content/uploads/2013/05/TVS_PU_Prevalence_Measurement_Safety_Thermometer_Data_Interpretation1.pdf.

[13] Smith IL, Nixon J, Brown S, Wilson L, Coleman S. Pressure ulcer and wounds reporting in NHS hospitals in England part 1: audit of monitoring systems. J Tissue Viability 2016;25(1):3—15.

[14] NPUAP/EPUAP/PPPIA. National pressure ulcer advisory panel, European pressure ulcer advisory panel and pan pacific pressure injury alliance. In: Haesler Emily, editor. Prevention and treatment of pressure ulcers: clinical practice guideline. Obsborne Park Western Australia: Cambridhe Media; 2014.