

KEY WORDS

- ▶▶ Pressure ulcers
- ▶▶ Root Cause Analysis
- ▶▶ Community

PRESENTING A LOCAL AUDIT OF PRESSURE ULCER ROOT CAUSE ANALYSIS

Pressure ulcers are an expensive and all-too common problem, which cost the NHS billions to treat annually, not accounting for the impact on patients' quality of life. This paper presents the results of one trust's efforts to introduce a standardised reporting mechanism to reduce the incidence of care-acquired pressure ulcers using root cause analysis (RCA). It details lessons learnt, resulting initiatives and perceived future challenges following implementation of local guidance and reporting.

In 2010, the National Patient Safety Agency (NPSA) adopted a zero-tolerance approach to pressure ulcers, urging all NHS organisations in England and Wales to work towards preventing all incidences of healthcare-acquired ulcers (NPSA, 2010a). Reporting of pressure ulcers as clinical incidents has been encouraged since the introduction of a National Institute of Health and Clinical Excellence (NICE) clinical guideline in 2005, which deals with the management of pressure ulcers in primary and secondary care (NICE, 2005). However, while most trusts complied with this requirement, prevention was mainly relegated to locally focused initiatives led by tissue viability teams with varying degrees of support.

In 2010, the NPSA introduced a campaign to significantly reduce levels of harm within the NHS (NPSA, 2010b). It encouraged organisations to work together to reduce instances of harm to all patients that use NHS services. The 10 areas chosen were all high risk areas — such as safer surgery, making childbirth safer and reducing harm from falls — as well as pressure ulcers. The NPSA allocated clinical leads to work with NHS organisations across England and Wales to raise awareness and implement working practices. They also used national campaigns (Department of Health [DH], 2010a; Tissue Viability Society (TVS)/Wound Care Alliance, 2012) to drive change in these 10 key clinical areas.

In addition, local fiscal targets were set by the DH as an incentive to trusts to meet the targets. The Commissioning for Quality and Innovation (CQUIN) payment framework (DH, 2010b) enabled commissioners to reward good practice by linking a proportion of provider service income to the achievement of local quality improvement goals. The challenge for clinicians was to reduce the incidence of category 2, 3 and 4 healthcare-acquired pressure ulcers (European Pressure Ulcer Advisory Panel [EPUAP], 2009). In addition all healthcare-acquired category 3 and 4 ulcers were to be investigated by root cause analysis (RCA).

In relation to pressure ulceration, difficulties lay not only with standardising methods of data collection, which in itself was an onerous task, but also with standardisation and acceptance of definitions to enable regional comparison and accuracy of reporting.

ROOT CAUSE ANALYSIS

Every day one million people are treated safely and successfully in the NHS. However, when incidents do happen, it is important that lessons are learned to prevent the same incident occurring elsewhere. RCA investigation is a well-recognised way of doing this and is widely used in the NHS by infection control teams to investigate threats such as methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile*.

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Table 1

Definitions of avoidable and unavoidable pressure ulcers.

Avoidable	Unavoidable
The person receiving care developed a pressure ulcer and the provider of care did not do one of the following: evaluate the person's clinical condition and pressure ulcer risk factors; plan and implement interventions that are consistent with the person's needs and goals, and recognised standards of practice; monitor and evaluate the impact of the interventions; or revise the interventions as appropriate	The person receiving care developed a pressure ulcer even though the provider of the care had evaluated the person's clinical condition and pressure ulcer risk factors; planned and implemented interventions that are consistent with the person's needs and goals; and recognised standards of practice; monitored and evaluated the impact of the interventions; and revised the approaches as appropriate; or the individual person refused to adhere to prevention strategies in spite of education of the consequences of non-adherence

Patient safety RCA investigations should be conducted at the appropriate level and the NPSA RCA toolkit (2008) provides guidelines for what might be considered appropriate and proportionate:

- ▶▶ Level 1 is described as a concise investigation
- ▶▶ Level 2 is a comprehensive investigation
- ▶▶ Level 3 is usually an independent investigation carried out by a third party.

THE PROJECT

North East England as a region has a proven track record of joint working and sharing best practice in tissue viability via an established regional group. Local knowledge of professionals working in the field of tissue viability, skills and experience were used in conjunction with available evidence to create a document, which lays out definitions for healthcare acquired-pressure ulcers, alongside an agreed definition of a preventable pressure ulcers and a list of exclusions/considerations (Table 1).

This document was initially circulated for comments among the group, which included representatives from all local NHS organisations (both acute and community) and then a draft was sent by group members to heads of participating organisations, such as matrons, business managers, heads of nursing and local commissioners to achieve consensus and gain buy-in to the process.

The document achieved a standardised terms of reference, so that organisations involved in pressure ulcer RCAs were collecting, reporting and investigating pressure ulceration using a standardised and agreed methodology.

This document was adopted in Autumn 2011 by all but two NHS providers in the North East and enabled consistency of approach and reporting (Milne et al, 2011). Monitoring at organisational level included all of the above and any additional data to monitor effectiveness of local strategies or identify specific organisational issues.

Following this and many other local initiatives the call from tissue viability nurses and business managers for a national initiative to standardise pressure ulcer reporting was taken up by the TVS and in collaboration with David Foster, the Deputy Chief Nursing officer for England, they introduced *Achieving Consensus in Pressure Ulcer Reporting* in April 2012 (TVS, 2012).

Local RCA

As per the DH guidance and the local terms of reference, all community acquired category 3 and 4 pressure ulcers undergo a level 2 RCA in the author's organisation.

To facilitate this, the team developed a Pressure Ulcer RCA tool, as part of the document, to collect data in a structured and consistent way. The document also has a standardised, scored summary of

Table 2
Identified scored themes.

<i>Patient assessment</i>	<i>Documentation</i>	<i>Equipment/ Environment/Training</i>	<i>Wound care treatment</i>	<i>Referrals to specialist services</i>
<ul style="list-style-type: none"> ▶ Adequate completion of risk assessment tools on admission to case load ▶ Skin inspections documented ▶ Correct category identification of pressure ulcer ▶ Evidence of visual documentation of pressure ulcer ▶ Concordance issues (if applicable) 	<ul style="list-style-type: none"> ▶ Adequate wound care documentation completed ▶ Evidence of positional care discussions and importance of same ▶ Review dates set ▶ Delegation of care documented appropriately ▶ Specific contributory factors / task ▶ Review dates met and evaluated ▶ Adequate patient and family communication documented ▶ Patient information leaflet given 	<ul style="list-style-type: none"> ▶ Correct equipment ordered ▶ Delays in ordering specialist equipment ▶ Delays in receiving specialist equipment ▶ Evidence of review of condition in relation to equipment ordered ▶ Environmental issues ▶ Team training/ education 	<ul style="list-style-type: none"> ▶ Correct wound care dressings prescribed ▶ Compatible with Wound Care Formulary Guidelines 2011–13 ▶ Evidence of evaluation documented ▶ Review dates set 	<ul style="list-style-type: none"> ▶ Referrals made to TVNS service in a timely manner ▶ Delays evident in referrals to other relevant services ▶ Communication between MDT

events (Table 2) and an action plan that identifies whether the actions are to be implemented at a local or organisational level. Local actions are set out to address common themes such as documentation, lack of either initial risk assessment on entry to the case load or reassessment of risk. These can be addressed by raising the issues in local team meetings, at staff awareness and training events and at an organisational level, to enable sharing of information across teams.

All cases are presented within a month of reporting at the monthly RCA panel, which is chaired by the Head of Nursing and has core group members, including tissue viability, business managers and modern matrons. Staff are encouraged to participate and present the findings of their case to the panel. The panel reviews the evidence presented and agrees the action, then consensus is used to determine if the pressure ulcer was avoidable or unavoidable using the regional guidance.

The broadening agenda

The TVS (2012) document sought to introduce a national standardised data set for pressure ulcer reporting and eventually provide answers to how many case of

pressure ulcers there are in the UK, enable true comparison of incidence and establish how many pressure ulcers are avoidable.

Achieving Consensus in Pressure Ulcer Reporting (TVS, 2012) suggests 16 proposals that encompass the ‘how, when and what’ must be done in relation to reporting, including:

- ▶ Skin damage determined to be as a

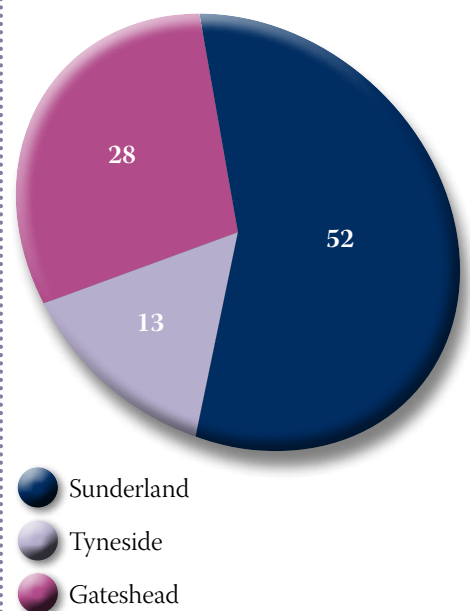


Figure 1: Number of reports per locality.

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result of incontinence and/or moisture alone, should not be recorded as a pressure ulcer

- ▶▶ A lesion that has been determined as combined; that is, caused by incontinence, moisture and pressure, should be recorded as a pressure ulcer
- ▶▶ Both avoidable and unavoidable pressure ulcers should be reported. For national reporting purposes, the DH definitions for avoidable/unavoidable pressure ulcers should be used.

Encouragingly, the 16 key points have already been incorporated into the author’s organisation.

LOCAL AUDIT

South Tyneside Foundation Trust provides a range of NHS Services to both hospital and community patients across Tyneside, Gateshead and Sunderland. The community arm of the trust serves a population of 622,000 people from diverse social backgrounds.

This paper presents a retrospective audit of the findings of all community pressure ulcer RCA data collected between April 2011–April 2012. The results of the audit are presented in *Table 3*, which shows a total of 93 category 3 and 4 ulcers were reported, equating to an average of seven

ulcers a month (range 0–12). Only 65 of the 93 reported cases (70% of cases) proceeded to a full RCA investigation as described above.

The remaining cases were reclassified during the initial stages of the investigation for the following reasons:

- ▶▶ Twelve did not proceed as on examination the ulcer was re-categorised from category 3 to category 2 by a member of the tissue viability team
- ▶▶ One case was an arterial foot ulcer
- ▶▶ One case was an arterial leg ulcer
- ▶▶ Three were Kennedy terminal ulcers
- ▶▶ Nine were hospital- and not community-acquired
- ▶▶ Two were nursing home-acquired.

Figure 1 shows a breakdown of Datix® (a web-based patient safety software package) reports per locality — reflecting the respective patient populations.

Sunderland has the largest population followed by Gateshead and South Tyneside. It is important to note that this in no way reflects the care given by the individual teams, as it was clear at the panel that some teams embraced reporting from the outset and have used the process as a positive learning experience. Other teams have been

Table 3
April 2011—March 2012 Category 3 and 4 pressure ulcer Datix reports.

Month	Cat 3 and 4	Reasons for reclassification following investigation						RCA	RCA Outcome Unavoidable	RCA Outcome Avoidable
		Cat 2 not Cat 3	Arterial ulcer	Leg ulcer	Kennedy ulcer	Hospital acquired	Nursing home-acquired			
Apr-11	0	0	0	0	0	0	0	0	0	
May-11	10	0	0	0	0	3	0	7	6	1
Jun-11	10	1	0	0	0	1	0	8	6	2
Jul-11	12	3	0	0	0	0	0	9	9	0
Aug-11	6	2	0	0	0	0	0	4	4	0
Sep-11	6	0	0	0	0	0	0	6	6	0
Oct-11	8	0	0	0	0	0	0	8	8	0
Nov-11	10	1	0	0	0	3	0	6	6	0
Dec-11	11	0	0	0	2	0	1	8	8	0
Jan-12	8	2	0	0	1	1	1	3	3	0
Feb-12	8	1	0	1	0	1	0	5	5	0
Mar-12	4	2	1	0	0	0	0	1	1	0
Total	93	12	1	1	3	9	2	65	62	3

slower to embrace the reporting of incidents despite ongoing support and encouragement.

A total of 1,311 pressure ulcer incidents were reported in the same timeframe. As mentioned above, 93 were category 3 and 4 ulcers deemed to meet the criteria to progress to an RCA and of these only 65 proceeded to a full RCA. Of this total of 1,311 reports, only 557 pressure ulcer incidents were reported as occurring in the patient's home, while he or she was on the district nursing case load in receipt of a package of care (a prevalence of 11.6% of community-acquired category 3 and 4 ulcers, or 4.95% of the overall community prevalence).

It is unlikely that these figures offer a true representation as the accuracy and frequency of reporting has increased month on month throughout the time period audited. As such, next year's data may offer a better reference and plans are in place to compare the data with this year.

Figure 2 shows the number of pressure ulcers reported by category — as can be seen the majority (70%) of the ulcers reported were category 3 ulcers on a total of 93 patients with 106 ulcers. *Figure 3* shows that 15 patients had more than one ulcer with three patients having three or more full thickness ulcers at the time of the investigation.

Figure 4 shows the pressure ulcers by body location — the most commonly reported body location was the sacrum, with 27 patients having damage in this area, which equates to 25% of all reports. This was closely followed by heel damage, — 24 patients had 30 incidents of heel damage. Interestingly, 54 (51%) of the ulcers were reported in the seating area. Patients' heels and ischia were the most common areas for reported bilateral full thickness damage.

The main focus of any RCA investigation is to identify key themes and events that contributed to the incident. Pressure ulcer development is multifaceted as is alluded to by the most commonly used current definition:

'A localised injury to the skin and/or underlying tissue usually over a bony

‘The main focus of any RCA investigation is to identify key themes and events that contributed to the incident’

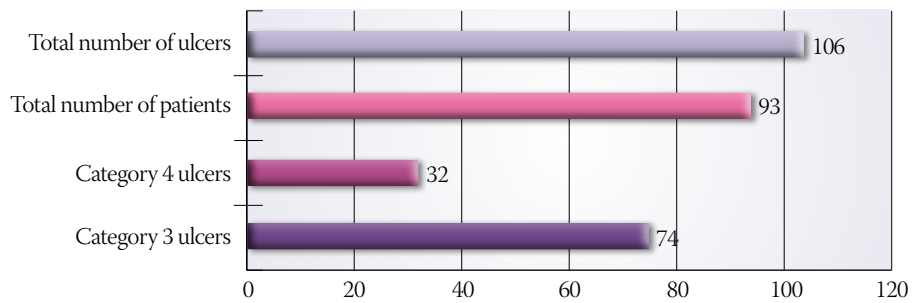


Figure 2: Number of pressure ulcers reported by category.

prominence, as a result of pressure, or pressure in combination with shear. A number of contributing or compounding factors are also associated with pressure ulcers; the significance of all these factors is yet to be elucidated’ (NPUAP/ EPUAP, 2009).

Unsurprisingly, in this audit none of the investigated incidents identified a lone identifiable or causative factor. Instead, all cases were multifaceted, with numerous contributory factors leading to the development of the ulcers. All cases had action plans completed that identified contributory factors from the list shown in Table 2. Patient’s notes are reviewed for evidence and each identified causative factor is scored using the following tool. A score of 1 is given if all the required documented evidence is apparent and consistent; a score of 2 is given if documented evidence is lacking or inconsistent; finally any omissions in the documented evidence are given a score of 3.

An action plan is created for all areas that score 2 or 3. Some actions are implemented locally at a team level, while

organisational actions are logged and led by the tissue viability team and solutions implemented once identified and piloted (some examples are discussed below).

A small part of the investigation is to determine if the pressure ulcer was avoidable or unavoidable. It is the belief of the author that the focus of any investigation should be on improving patient outcomes by sharing the lessons learnt in an open and honest culture, which does not focus on blame. However, using the NPSA (2010c) definitions of avoidable and unavoidable pressure ulcers (Table 1), it can be seen that only three of the 65 incidents investigated here were thought to be avoidable.

All of these were device-related ulcers as described by Fletcher (2012) — one ulcer was related to incorrectly applied compression bandaging; one was at the knee of a patient wearing TED stockings; and one patient developed an ulcer under her arm while in a total contact cast. All patients had full sensation but failed to alert staff to discomfort prior to their next appointment, despite being signposted to do so.

DISCUSSION

Over the past two decades there have been attempts to use pressure ulcer rates as a quality indicator for nursing and health care services. However, problems have been encountered in setting up robust reporting mechanisms and also the interpretation of event rates from prevalence and incidence data — using case mix adjustment. It is also recognised that some patients develop pressure ulcers despite the provision of the best possible care, while in other situations standards may have been less than optimal. What is clear from the author’s experience is that pressure ulcer prevention in a community setting is fraught, not

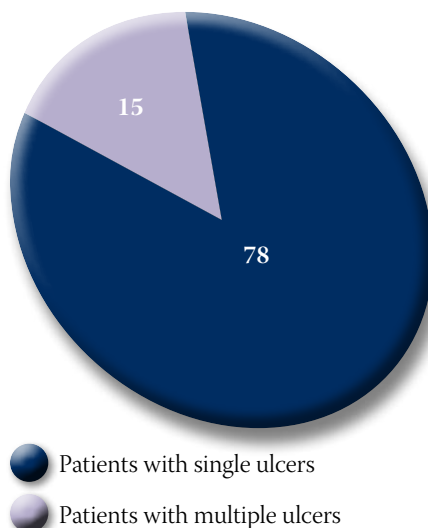
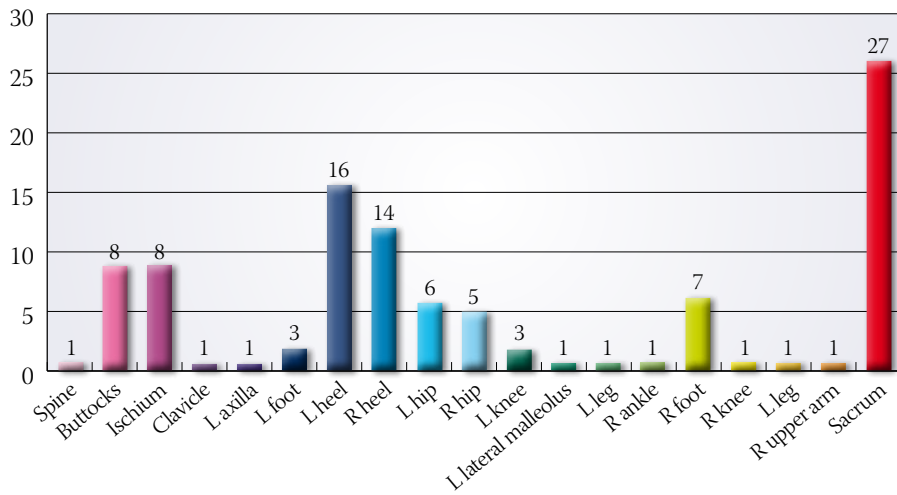


Figure 3: Numbers of patients with single or multiple pressure ulcers.



‘Over the past two decades there have been attempts to use pressure ulcer rates as a quality indicator for nursing and health care services’

Figure 4: Pressure ulcers reported by location on the body.

only with the complex nature of the underlying problems and their associated cumulative effect, but also with the complexities associated with shared care provision. A large percentage of patients with community-acquired ulcers have elements of their care delivered through informal or formal care arrangements, e.g. paid or unpaid carers or care agencies. As

a result, one of the initiatives to come out of the RCA investigations at the author’s trust was the development of a ‘delegation of care standards’ tool, which is used to educate qualified staff about the safe steps to take to ensure the safe delegation of care to others. The tool is based on the RCN’s (2011) publication *Accountability and Delegation: What you need to know*.

‘What is clear from the author’s experience is that pressure ulcer prevention in a community setting is fraught’

This was introduced in early 2011 and is now being used effectively throughout the author’s organisation.

Other issues have been addressed, for example, there was a lack of access to cameras to enable clinical imaging and a robust policy to facilitate this. Simple aide-mémoires were developed to guide staff through the reporting process. The trust pressure ulcer policy, standards for practice and teaching materials were also updated, along with revision of the pressure ulcer patient information leaflet.

Staff involved in the RCA process have received NPSA training to educate them about the RCA methodology, process and outcome reporting. Action logs are kept centrally and RAG (red amber and green) rated — these are reviewed at each meeting and actions moved from red to amber and green as they are achieved. Reports to the trust board are made bi-monthly from an assurance perspective — these include common themes actions and outcomes. Completed RCAs are appended to the original Datix report.

January 2012 saw the introduction of Serious Incident Requiring Investigation (SIRI) (NPSA, 2010c) for those incidents listed in *Table 4* and compulsory monthly reporting of the outcome of investigations to the commissioners. This has led to the trust receiving reports from its two neighbouring trusts, which detail the pressure ulcers that are reported as community-acquired on admission to hospital. Initial findings confirm suspicions that not all teams/staff members are reporting all ulcers, as to date two new investigations have occurred, which were not reported in

Table 4
Pressure ulcer serious incident that requires investigation (SIRI).

- ▶▶ Loss of limb
- ▶▶ Loss of life
- ▶▶ Requiring surgery for their pressure ulcer
- ▶▶ Transfer for care of pressure ulcer, e.g. transfer to plastics for treatment
- ▶▶ Cluster of pressure ulcers in a clinical area
- ▶▶ At the provider organisation discretion

the data (*Figure 5*). The findings have also confirmed fears in relation to what is commonly termed double-counting — one of the ulcers was long-standing and had previously completed an RCA; two patients reported as community-acquired had developed the damage on earlier hospital admissions; and one patient had not accessed any healthcare services prior to admission to hospital. It is clear that this has resource implications, as to repeat the lengthy RCA process in multiple settings for the same patient has limited benefit unless both settings were causative factors in the ulcer development.

While it is clear that progress has been made to date, ongoing issues have also been identified that have been more difficult to address quickly. For instance, over 50% of the ulcers have been identified in the seating area, however, only a small percentage of these patients have been wheelchair users and access for non-wheelchair patients to specialist or appropriate seating is a currently under-resourced, a service gap commonly filled by ill-prepared district nursing teams.

Prevention of pressure ulcers in the seated patient is paramount (TVS, 2008) and the team is currently developing a risk assessment and seating needs tool to help staff choose appropriate equipment, not only to meet demand, but also to addresses the size, shape and environmental issues experienced in community settings.

The tool is currently being piloted and early feedback from users has been largely positive. This has been coupled with the development of a tool that groups equipment loaned from stores into levels:

- ▶▶ Level 1: equipment used for prevention of pressure ulcers
- ▶▶ Level 2: equipment used for high-risk prevention/treatment of category 1 and 2 ulcers
- ▶▶ Level 3: equipment used for the treatment of category 3 and 4 pressure ulcers.

All new equipment will be categorised using this method and staff training will centre on this approach, which helps staff to choose the most appropriate piece of equipment based on the risk level and reported patient behaviours.

One unresolved issue is the provision of heel off-loading devices for mobile patients. There are no 'off-the-shelf' devices currently available on Drug Tariff or that can be recycled and issued easily via home loan stores, to facilitate the effective off-loading of the heel in these patients, while safely encouraging mobility and rehabilitation.

Another commonly identified problem is patient concordance — largely associated with chronic debilitating conditions such as spina bifida, multiple sclerosis, spinal injury, morbid obesity and Parkinson's disease. These patients commonly have mental capacity under the Mental Capacity Act 2005 (i.e. are deemed to have the capacity to make decisions about their care once the risks have been explained even if taking the risk would lead to harm) and may have experienced ulcers in the past.

However, despite this, many choose to decline interventions and ignore advice regarding off-loading, especially with regard to reduced sitting times. Clinicians have to respect the patient's right to decline treatment, which could be viewed as wilful self-neglect, however, this not a safeguarding issue as because of the Act, a patient judged to have capacity is deemed to have the ability to make decisions based on the facts presented to them at the time. The team are currently working with the legal department to develop an advanced directive to be used in these cases in order that any discussions with the patient can be accurately documented, with patient collaboration, consultation and reassessment at the heart of the process.

Another area to focus on in the future is a patient and public engagement campaign, with the aim of educating people about pressure ulcers. The Your Turn (2012) campaign and this year's Stop Pressure Ulcer Day, which takes place on November 16, will go some way towards this. However, if lessons are to be learnt from infection control hand-washing campaigns, it is clear that more can be done to put pressure ulcers at the forefront of people's minds.

CONCLUSION

Initially all RCAs in the trust were

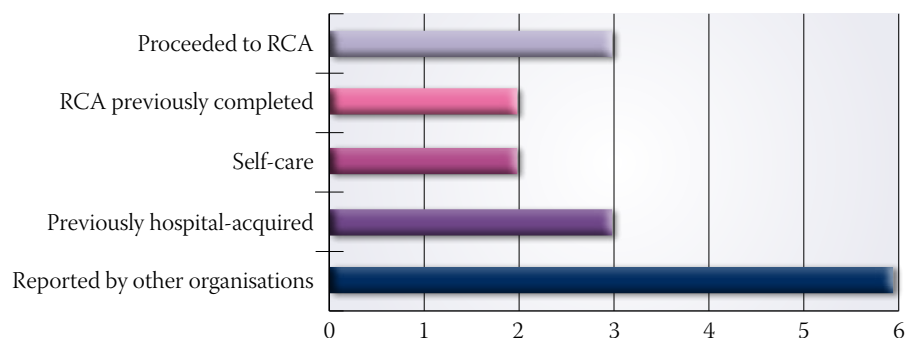


Figure 5: Category 3 and 4 pressure ulcers as community-acquired by other organisations, January–March, 2012.

carried out by the tissue viability team, however, heightened awareness of pressure ulcers has led to a volume of work that cannot be sustained by the current staff numbers. As a result, this has been passed to wider teams, with these taking responsibility for reviewing and creating their own reports (the number of RCA made it prohibitive for a small team to complete them all — as such the safe care leads and matrons in each team perform them with input, if required, from the tissue viability team).

On the whole, the RCA process has been viewed positively. While performing pressure ulcer RCAs is time-consuming (an average investigation can take approximately 20 hours to complete), the outcome of the investigation and the organisation's commitment to the process have led to positive changes in practice.

As a specialty, it is essential that tissue viability works collaboratively to ensure standard setting is fair and equitable and that all organisations are in agreement. This will avoid variances and allow a true comparison of outcome data. It remains to be seen how the introduction of internal market forces and the competition involved in Any Qualified Provider legislation (DH, 2012) will affect projects like this going forward.

However, to avoid repeating work it is essential that a central patient record is created that enables all organisations to work collectively to reduce the incidence of pressure ulcers where possible as well as managing them effectively. This is especially true in those patients who develop ulcers despite the appropriate care and intervention. **WUK**