



National Patient Safety Agency

Patient Safety Division

ISSUE 8

1 JANUARY 2007 TO 31 MARCH 2008

NATIONAL REPORTING
AND LEARNING SYSTEM
DATA SUMMARY

Putting patient safety first

Contents

Data overview	2
Introduction	3
The data	3
Workbook	3
Using the data	3
Patient safety highlights	4
Article alert	4
Initiatives	5
Section 1: Reporting to the National Reporting and Learning System	6
Number of reports and organisations reporting to the NRLS	7
Section 2: Trends and patterns in patient safety incidents	8
Interpreting the data	8
Volume of patient safety incidents	8
Care setting of incident reports	9
Reported incident types	11
Acute/general hospitals	11
Mental health and learning disabilities services	14
<i>Bleep-related incidents</i>	17
<i>Radiotherapy-related incidents</i>	19
Community services (including community hospitals), community pharmacies, community and general dental services, and community optometry and optician services	22
Ambulance services	24
General practice	24
Impact of incidents on patients	27
Degree of harm	27
Severe harm or death by care setting	27
The National Reporting and Learning System	30
References	31

An overview of the data contained in this Quarterly Data Summary:

- Between 1 January and 31 March 2008, the NPSA received **229,804** reports of patient safety incidents (based on date of submission), bringing the total number of incidents reported to the NPSA's National Reporting and Learning System (NRLS) to **2,375,410**.
- The number of incidents reported between January and March 2008 was lower compared to the number reported between October and December 2007 (264,706 incidents). This decrease is likely to have been caused by the deadline for the Organisational Feedback reports falling in the previous quarter.
- Of the 427 NHS organisations in England and Wales, **356** (83 per cent) submitted at least one report to the NRLS in the quarter January to March 2008. This is lower than the equivalent proportion seen in the previous quarter (89 per cent).
- Among all NHS organisations, **43 per cent** reported consistently (at least once per month) in the quarter January to March 2008. This figure was similar to that seen in the previous quarter.
- As of 7 April 2008, **188,776** patient safety incidents were reported as having occurred in the quarter October to December 2007, based on incident date.
- The total number of patient safety incidents reported as having occurred during the 12 month period January 2007 to December 2007 was **811,746**.
- Between January and December 2007 the most commonly reported type of incident was **patient accidents**: accounting for more than a third of all incidents that occurred in that period (34 per cent).
- An overwhelming majority of patient safety incidents reported as having occurred between January and December 2007 occurred in **acute trusts/general hospitals** (73 per cent). The second most common care setting for reported incidents was mental health services (14 per cent).
- In **ambulance services** the proportion of incidents reported as being related to infrastructure increased consistently and substantially during 2007 (from five per cent in January to March 2007 to 17 per cent in October to December 2007). In contrast, there was a consistent decrease in incidents from ambulance services that were categorised as access/admission/transfer/discharge (from 27 per cent in January to March 2007 to 20 per cent in October to December 2007). The proportion of incidents related to accidents also decreased, from 20% in January – March 2007 to 9% in October – December 2007.
- The majority of incidents occurring between January and December 2007 were reported as causing **'no harm'** (66 per cent) to the patient, while 27 per cent were reported as causing 'low harm' and six per cent were reported as causing 'moderate harm'.
- One per cent of all incidents were reported as causing **'severe harm'**; the proportion of incidents reported to have resulted in death was negligible (rounded down to 0 per cent).
- The proportion of incidents reported as causing severe harm or death varies across care settings. The highest proportion of incidents resulting in either severe harm or death was reported by general practices (2.4 per cent), followed by mental health services (1.7 per cent).

Introduction

Ensuring patients are treated safely is the top priority for NHS staff. When incidents do happen, it is important that lessons are learned across the NHS to prevent the same incidents occurring elsewhere.

The National Patient Safety Agency (NPSA) collects and analyses reports of patient safety incidents received from NHS staff. These data are fed back to the NHS and other interested parties via these quarterly data summary (QDS) reports and the accompanying workbooks.

The QDS reports provide an overview of the volume of incident reports received, what sector they are from, what type of incidents they describe and the level of resulting harm to the patient/s involved. This quarter we also provide sections highlighting the issues of bleep and radiotherapy-related incidents.

The data

The data summarised here are from the NPSA's National Reporting and Learning System (NRLS) and include all patient safety incidents reported from NHS organisations in England and Wales.

For further information on the NRLS, see the appendix on page 30.

Note that with effect from January 2007, incidents coded as 'other' were no longer routinely recoded, which is reflected by an increase in the overall proportion of 'other' incidents in the quarter January to March 2007 and onwards.

Two sets of data and analysis are presented:

Section one describes the level of reporting to the NRLS by quarter and uses data based on the date that the report was received by the NPSA. * The data cover the period from when the NRLS was first set up in October 2003 until the end of March 2008.

Section two contains an overview of patterns and trends in patient safety incident reports. It uses data based on the date that the patient safety incidents were reported as having occurred. The data cover the four quarters between January and December 2007.

The following notation is used when per cent is shown in the report and accompanying workbook:

- '0' is used for percentages that are rounded down to zero;
- '-' is used for a true zero in a row/column showing per cent, i.e. when there are no cases in a category;
- '**' is used when the base number is deemed too small to provide reliable percentages (n<30). This notation may differ compared to that used in QDS reports and workbooks prior to Issue 6.

Note that rounded figures are presented in this report. Therefore totals may differ marginally compared to the sum of figures as stated in the text. Please see the workbook for the exact figures.

Workbook

This report summarises the NRLS data, drawing out key trends and themes. To accompany the report, a data workbook is available on the NPSA website (www.npsa.nhs.uk/patientsafety/patient-safety-incident-data/quarterly-data-reports/). As well as containing all the data underpinning the analysis in this summary (frequencies and per cent), the workbook provides charts showing trends in the data on a quarterly basis. In contrast to previous QDS reports, the workbook for the current issue shows the data broken down by country.

Using the data

Data presented in this report and the accompanying data workbook can be used in several ways, including as an indicator to benchmark local data against national trends; provide denominator data for research; and to enable triangulation with other data sources.

Notes to aid accurate interpretation of NRLS data are provided in the appendix on page 30.

Note: *Comparisons should not be made between the data in sections 1 and 2, since they are based on different datasets.*

* The date the report was received by the NPSA is also referred to as 'date of submission'.

Patient safety highlights

This section contains selected highlights of literature published in the quarter and key patient safety initiatives.

Article alert

'How willing are patients to question healthcare staff on issues related to the quality and safety of their healthcare? An exploratory study'. RE Davis, M Koutantji and CA Vincent, *Quality and Safety in Health Care*, 2008; 17: 90-96

This study explored surgical patients' willingness to question healthcare staff about their treatment; differences between patients' willingness to ask factual versus challenging questions related to the quality and safety of their healthcare; patient demographic characteristics that could affect patients' willingness to ask questions; and the impact of doctors' instructions on patients' willingness to ask questions. The study sampled 80 patients who had undergone surgery. The findings showed that patients were significantly more willing to ask doctors factual versus challenging questions; nurses factual versus challenging questions; doctors versus nurses factual questions; and nurses versus doctors challenging questions. The study demonstrated that surgical patients, particularly men, those who were less educated, or those who were unemployed were less willing to challenge healthcare staff regarding their care than to ask healthcare staff factual questions. The study concluded that patient involvement strategies that take into account patient characteristics need to be developed for patients and staff in order to encourage patient involvement in this area.

'Patient safety events reported in general practice: a taxonomy'. MAB Makeham, S Stromer, C Bridges-Webb, M Mira, DC Saltman, C Cooper, and MR Kidd, *Quality and Safety in Health Care*, 2008; 17: 53-57

The objective of this study was to develop a taxonomy describing patient safety events in general practice from reports submitted by a random representative sample of GPs, and to determine proportions of reported event types. 433 reports received by the Threats to Australian Patient Safety (TAPS) study were analysed by three investigating GPs, who classified the event types contained. A three-level taxonomy resulted from the study. At the first level, errors relating

to the processes of healthcare (type 1; n = 365 (69.5%)) were more common than those relating to deficiencies in the knowledge and skills of health professionals (type 2; n = 160 (30.5%)). At the second level, five type 1 themes were identified: healthcare systems (n = 112 (21.3%)); investigations (n = 65 (12.4%)); medications (n = 107 (20.4%)); other treatments (n = 13 (2.5%)); and communication (n = 68 (12.9%)). Two type 2 themes were identified: diagnosis (n = 62 (11.8%)) and management (n = 98 (18.7%)). The third level comprised 35 descriptors of the themes. Good inter-coder agreement was demonstrated with an overall score of 0.66. The study concluded that the proposed taxonomy for reported events in general practice provides a comprehensible tool for clinicians describing threats to patient safety, and could be built into reporting systems to remove difficulties arising from coder interpretation of events.

'Evaluation of a preoperative checklist and team briefing among surgeons, nurses, and anesthesiologists to reduce failures in communication'. L Lingard, G Regehr, B Orser, R Reznick, GR Baker, D Doran, S Espin, J Bohnen and S Whyte, *Archives of Surgery*, 2008; 143(1): 12-17

This study assessed whether structured team briefings improve operating room communication. This 13-month prospective study used a pre-intervention/post-intervention design. All staff and trainees in the division of general surgery at a Canadian academic tertiary care hospital were invited to participate. Participants included 11 general surgeons, 24 surgical trainees, 41 operating room nurses, 28 anesthesiologists, and 24 anesthesia trainees. The primary outcome measure was the number of communication failures (late, inaccurate, unresolved, or exclusive communication) per procedure. Secondary outcomes were the number of checklist briefings that demonstrated 'utility' (an effect on the knowledge or actions of the team) and participants' perceptions of the briefing experience. 172 procedures were observed (86 pre-intervention, 86 post-intervention). The mean (SD) number of communication failures per procedure declined from 3.95 (3.20) before the intervention to 1.31 (1.53) after the intervention ($P < .001$). Thirty-four per cent of briefings demonstrated utility; including identification of problems, resolution of critical knowledge gaps, decision-making, and follow-up actions. The article concludes that interprofessional checklist briefings reduces the number of communication failures and promotes proactive and collaborative team communication.

Initiatives

Rapid Response Report: Risks with intravenous heparin flush solutions (ref: NPSA/2008/RRR0002)

Intravenous heparin flushes are widely used in healthcare to keep both peripheral and central lines open. Risks with heparin flushes are not well recognised by practitioners and risks are increased if they are not formally prescribed or subject to a patient group direction.

Other problems include confusion with other 'look-alike' products, selecting wrong medicine when placed in an unlabelled syringe, and errors in calculating and making up dilutions.

Further information and support materials are available at: www.npsa.nhs.uk/patientsafety/alerts-and-directives/rapidrrr/risks-with-intravenous-heparin-flush-solutions/

Hospital Hydration Best Practice Toolkit

Good hydration is important for the safety and well being of hospital patients. However, inadequate hydration, identified by the NPSA as a patient safety issue, can be a common problem in hospitals.

The NPSA and the Royal College of Nursing have developed an online toolkit to encourage hydration best practice in hospitals.

The toolkit provides practical advice for healthcare staff on how to minimise the risk and potential harm that poor hydration can cause, and offers solutions to improving the provision of water to hospital patients.

Further information on dehydration can be found at: www.npsa.nhs.uk/patientsafety/alerts-and-directives/cleaning-and-nutrition/nutrition/hydration/

10 key characteristics of good nutritional care: implementation factsheets

The NPSA has launched the first three in a series of 10 fact sheets to support the 10 key characteristics of good nutritional care, produced by the Council of Europe Alliance (UK).

The fact sheets have been developed by the NPSA in conjunction with the Royal College of Nursing, the Hospital Caterers Association, the National Association of Care Catering and key stakeholders from the private sector. The first three fact sheets explore:

- food service and safe delivery of nutritional care;
- hospital-wide support for a multidisciplinary approach to nutritional care;
- implementation of Protected Mealtimes.

The fact sheets can be found at: www.npsa.nhs.uk/patientsafety/alerts-and-directives/cleaning-and-nutrition/nutrition/

Reporting to the NRLS

This section is an overview of the volume and frequency of patient safety incidents reported to the NRLS.

The data analysed in this section have been extracted using the date that the incident report was submitted to the NRLS. The most recent quarter covered is January to March 2008.

“ 98 per cent of incidents were reported via Local Risk Management Systems ”

Number of reports and organisations reporting to the NRLS

Between October 2003, when the NRLS was first set up, and March 2008, 2,375,410 incidents reports have been received, based on the date of submission.

In the quarter January to March 2008, 229,804 incident reports were submitted. The number of incidents reported between January and March 2008 was slightly lower compared to the previous quarter (264,706 incidents in October to December 2007). This decrease is likely to have been caused by the deadline for the Organisational Feedback reports falling in the previous quarter.

Overall, of the 427 NHS organisations in England and Wales,* 356 organisations (83 per cent) reported at least once during the quarter January to March 2008, and 43 per cent of all NHS organisations reported at least once every month. While the proportion of organisations that reported at least once every month remained the same as the previous quarter, the overall proportion of organisations that reported at least once during the quarter decreased slightly (from 89 per cent in October to December 2007 to 83 per cent in January to December 2008).

The source of reports to the NRLS from January to March 2008 continues the trend seen in previous quarters. The Local Risk Management System remains the dominant route for report submission: 98 per cent of incidents received in the most recent quarter were reported via this route. The proportion of reports submitted via this route has not dropped below 98 per cent since the quarter January to March 2004.

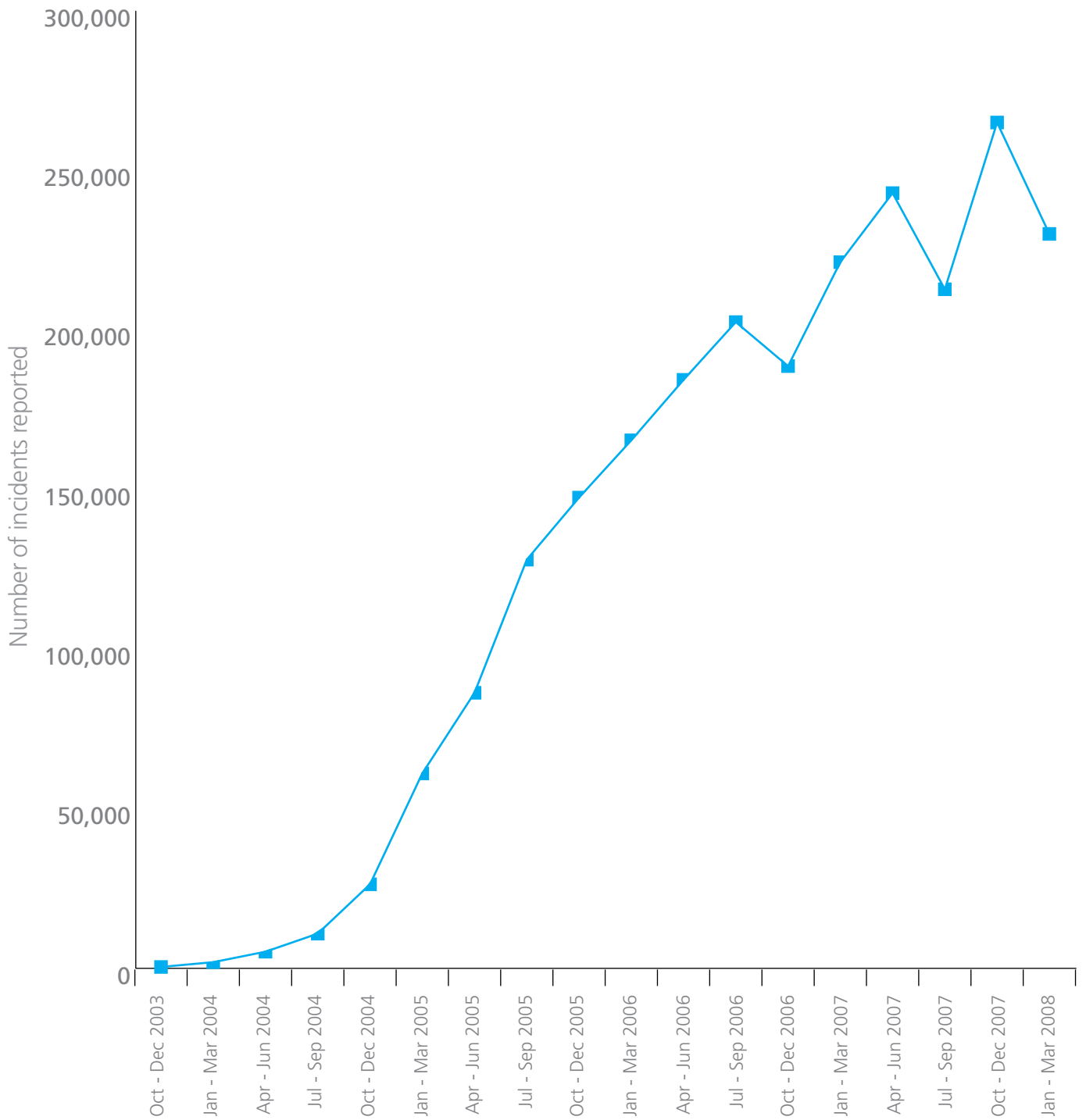
* Since the start of the quarter July to September 2007, there have been two mergers resulting in 427 NHS organisations in England and Wales as of 1 October 2007. No further mergers have occurred since this date.

Section:

1

Figure 1:

Number of incidents reported,
October 2003 to March 2008



Trends and patterns in patient safety incidents

This section provides an overview of the patterns and trends in patient safety incidents, focusing primarily on incident types and care settings.

The data presented covers the period January to December 2007, based on the date when the incidents were reported as having occurred.

Interpreting the data

The data presented in this issue covers the four consecutive quarters from 1 January 2007 to 31 December 2007. The three month time lag in publishing this data allows time for the majority of incidents to be reported, uploaded to the NRLS and processed.

The data were extracted as of 9 April 2008. Further incidents which occurred during the period January to December 2007 that have been sent to the NRLS since this date will be included in subsequent quarterly data summary reports. Accordingly, the figures presented in this report for the three quarters between January 2007 and October 2007 may also vary to a small extent compared to previous issues of the report, as additional incidents have been submitted since then.

Data in this section have been through data quality measures to eliminate duplicate data and blank reports.

The data in this section is generally presented on a 12 month basis, which is followed, where relevant, by a description of trends and changes in the patterns seen across the four individual quarters. Furthermore, the primary focus in this section is the data expressed in term of per cent. Figures and charts display the number of incidents, while also providing a visual overview of relevant patterns.

The full tables for this section, as well as additional charts showing trends in the data on a quarterly basis, are provided in the data workbook which accompanies this report (www.npsa.nhs.uk/patientsafety/patient-safety-incident-data/quarterly-data-reports/).

NOTE: Data presented in this section should not be compared with data in Section 1 of this report, as it is not based on the same time period. Care should also be taken when comparing data with previous issues of the quarterly data summary reports, since the number of incidents reported as having occurred in each quarter may vary to some extent in the different issues of the report.

Volume of patient safety incidents

Between January 2007 and December 2007, a total of 811,746 patient safety incidents occurred and were reported to the NRLS, based on the date when incidents were reported as having occurred. Of these incidents, 200,603 (25 per cent) were reported as having occurred between January and March 2007, while the equivalent figures were 211,837 (26 per cent) between April and June 2007, 210,530 (26 per cent) between July and September 2007, and 188,776 (23 per cent) between October and December 2007.

Although there appears to be about 20,000 fewer incidents in the quarter October to December 2007 compared to July to September 2007 (188,776 compared to 210,530 incidents), this is likely to reflect the time lag in incidents reaching the NRLS. For example, it can be seen that at the time of the previous QDS report (produced in February 2008), 195,370 incidents were reported as having occurred in the quarter July to September 2007. By the time of the current issue, the number of reported incidents in this quarter evidently increased to 210,530, which is indeed similar to the number of incidents reported to have occurred in the preceding quarter.

Care setting of incident reports

Overall, between January 2007 and December 2007, the majority of reported patient safety incidents occurred in acute trusts/general hospitals (73 per cent).

The second most common care setting for reported incidents was mental health services (14 per cent). Community services* (including community hospitals), which were combined with community pharmacy, community and general dental services, and community optometry/optician services, accounted for nine per cent.

Among the community services, community hospitals accounted for more than half (57 per cent) of incidents. Learning disabilities services accounted for three per cent of all reported incidents, while ambulance services accounted for a negligible proportion (rounded down to 0 per cent). This pattern was similar across all four quarters.

While looking at overall care settings for reported incidents may provide an overview of the pattern of reporting levels, it does not easily detect changes in reporting among individual care settings. In particular, changes among low reporting care settings that constitute a small proportion of total incident reports are unlikely to have an impact on the overall pattern. Therefore, the proportionate change in reporting levels is examined here, comparing July to September 2007 with October to December 2007 for each individual care setting.

There was a proportionate decrease among most care settings between July and September 2007 and October and December 2007. For example, in acute/general hospitals the number of reported incidents was 152,645 in July to September 2007, whereas the equivalent number was 135,993 in October to December 2007 (a decrease of 11 per cent).

In mental health services, the equivalent figures were 30,134 incidents and 28,027 incidents (a decrease of seven per cent) and in general practice the equivalent figures were 710 incidents and 576 incidents (a decrease of 19 per cent). Given the time lag in reporting, such a pattern is indeed expected.

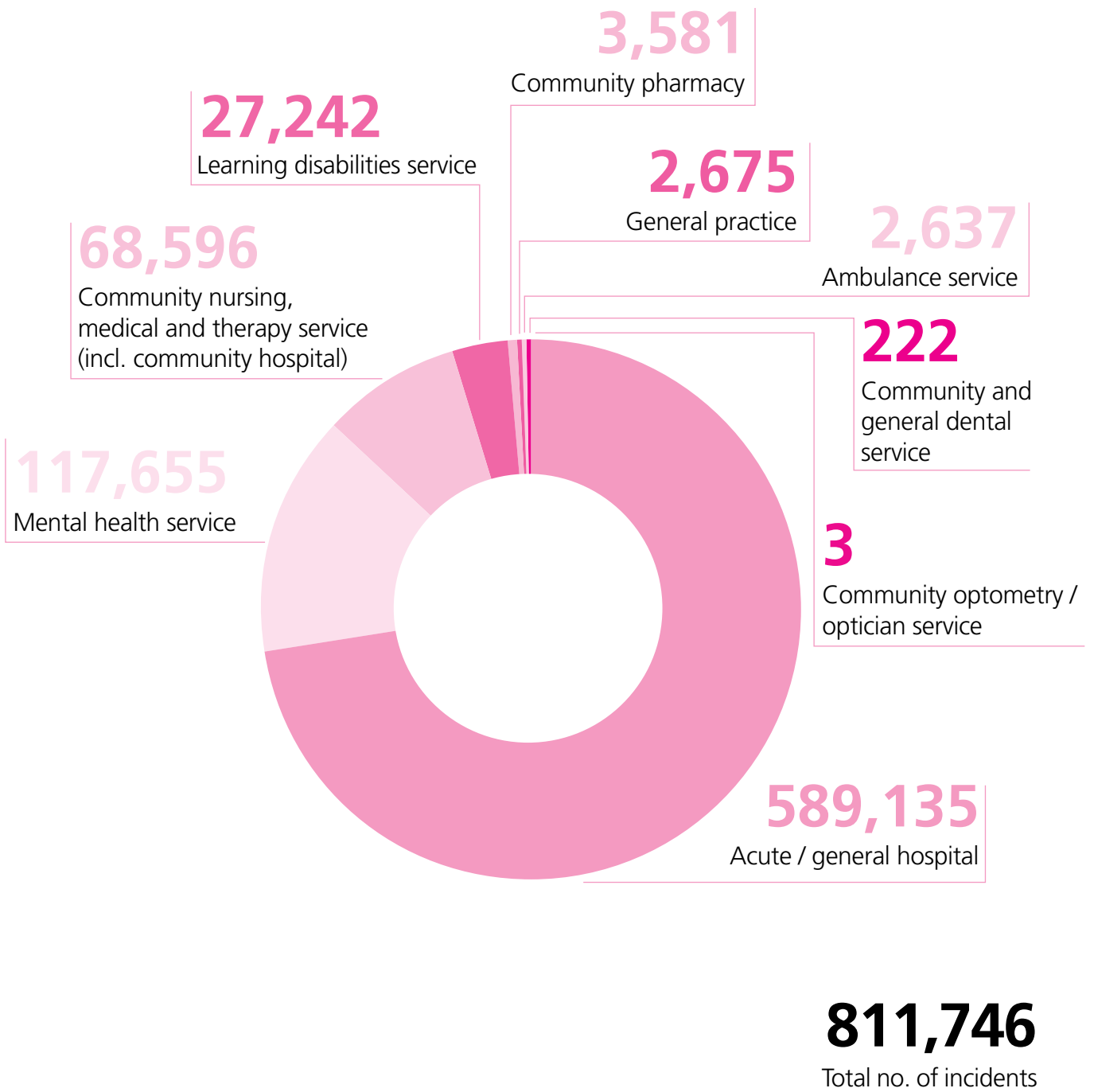
The exceptions to this pattern were community pharmacy (958 incidents in July to September 2007 and 1,028 incidents in October to December 2007) and community and general dental service (64 incidents in July to September 2007 and 66 incidents in October to December 2007). There was also a proportionate increase in the number of incidents reported by ambulance services (599 incidents in July to September 2007 and 730 incidents in October to December 2007). Since the total number of reported incidents from these care settings is relatively low, this trend, which follows on from the previous quarters, is particularly encouraging.

* Community services include community nursing, medical and therapy services.

2

Figure 2:

Care setting of incident reports,
January 2007 to December 2007



Reported incident types

Overall, between January 2007 and December 2007, the most commonly reported type of incident was patient accident, which accounted for 34 per cent of all incidents.

The next most commonly reported incident types were treatment/procedure and medication (both nine per cent), and access/admission/transfer/discharge (seven per cent). Infrastructure (including staffing, facilities, and environment) accounted for six per cent, whereas documentation (including records and identification) and clinical assessment (including diagnosis, scans, tests, and assessments) both accounted for five per cent of all incidents.

Disruptive/aggressive behaviour and consent/communication/confidentiality both accounted for four per cent, while medical device/equipment, self-harming behaviour, and implementation of care each accounted for three per cent of all incidents. The least commonly reported incident types were infection control and abuse of patient by third party, which accounted for two per cent and one per cent of all incidents, respectively. Four per cent of all incidents were categorised as 'other'.

The pattern of incident types within each care setting, reported between January 2007 and December 2007, show that there was substantial variation across the different care settings. Yet patient accident was consistently the most commonly reported incident type in care settings taking inpatients (ranging from 33 per cent in acute/general hospitals to 51 per cent in community services (including community hospitals)).

Acute/general hospitals

Between January 2007 and December 2007, the most commonly reported type of incident in acute/general hospitals was patient accident (33 per cent).

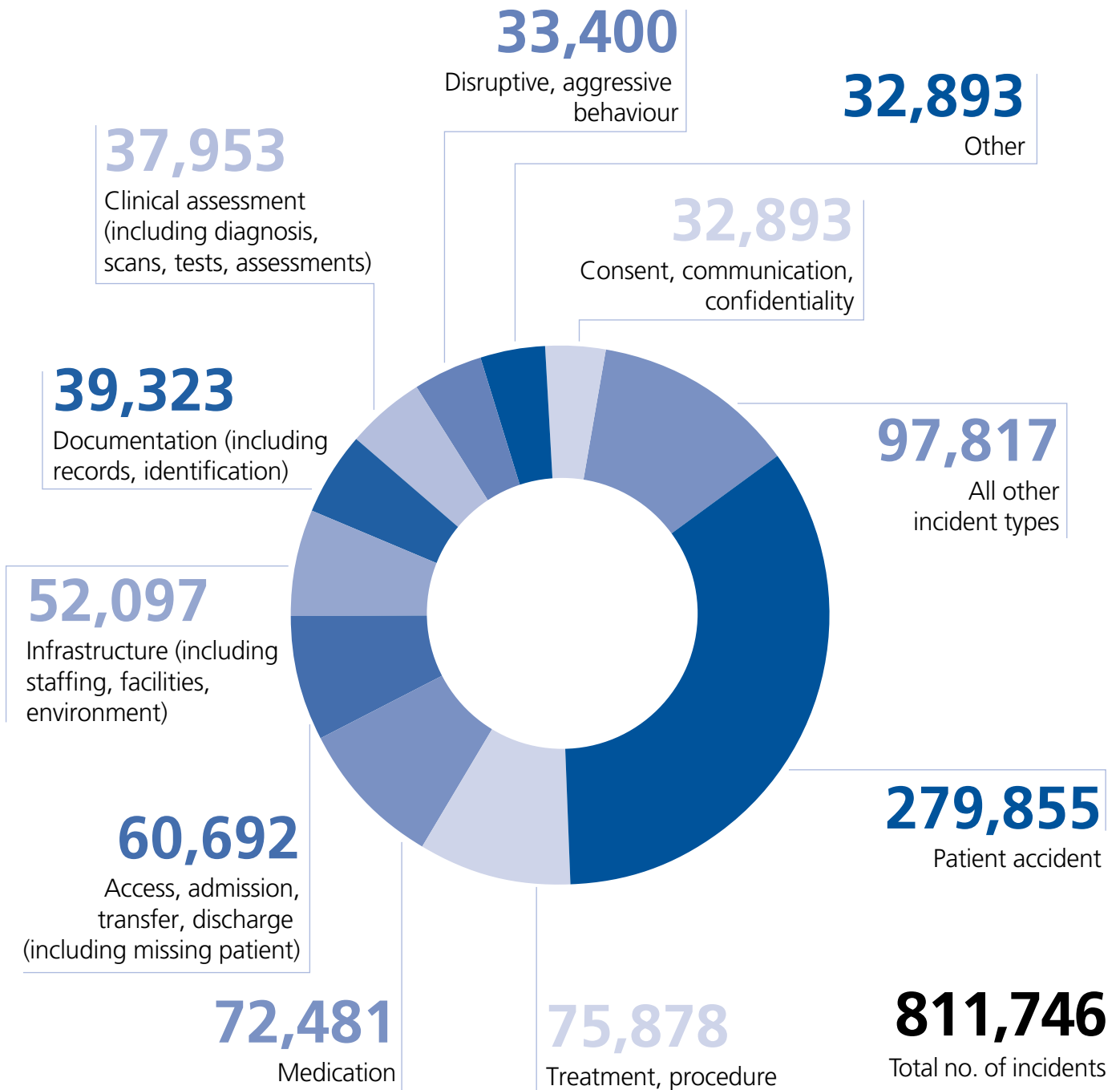
Treatment/procedure was the second most commonly reported incident type (12 per cent), followed by medication (nine per cent), infrastructure (eight per cent), and access/admission/transfer/discharge (seven per cent).

Clinical assessment, documentation, consent/confidentiality, medical device/equipment, implementation of care and ongoing monitoring/review, and incidents coded as 'other' ranged between six per cent and three per cent. Incidents categorised as infection control accounted for two per cent of all incidents. The remaining incident types (disruptive/aggressive behaviour, self-harming behaviour, and patient abuse) each accounted for a negligible proportion (each rounded down to 0 per cent). A similar pattern was seen in all four quarters.

2

Figure 3:

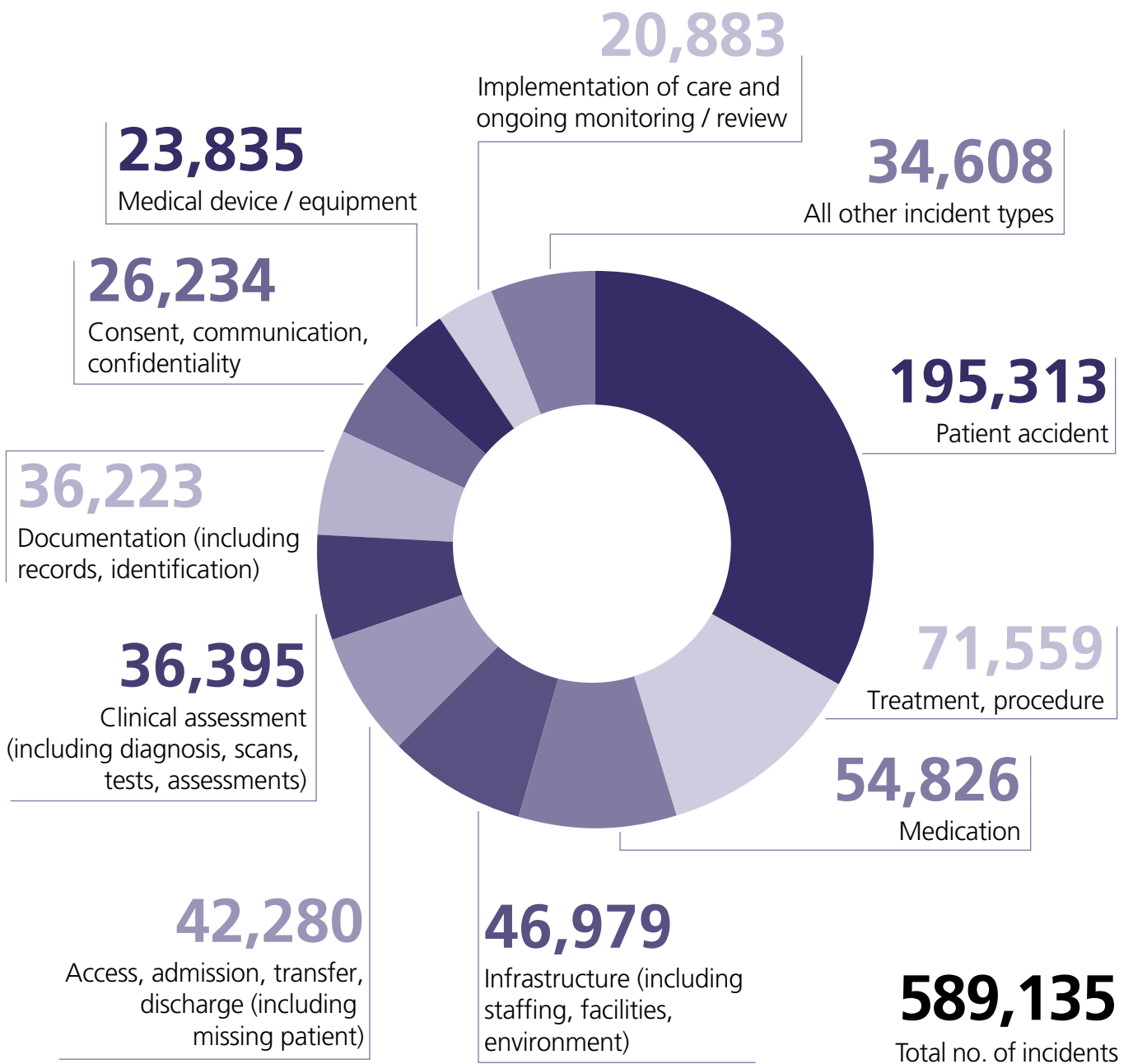
Reported incident types,
January 2007 to December 2007



2

Figure 4:

Reported incident types in acute/general hospitals, January 2007 to December 2007



Mental health and learning disabilities services

The pattern of incident types in mental health services was somewhat different compared to other care settings, although patient accidents still accounted for the largest proportion of incidents (34 per cent) reported between January 2007 and December 2007.

In contrast to other care settings, disruptive/aggressive behaviour was the second most commonly reported incident type (19 per cent), followed by self-harming behaviour (15 per cent). Incidents categorised as access/admission/transfer/discharge accounted for 10 per cent of all incidents, while 'other' incidents accounted for eight per cent, medication accounted for six per cent, and patient abuse accounted for four per cent. The remaining incident types each accounted for two per cent or less.

Although the pattern of incident types was largely similar across the quarters, there was a small but consistent decrease in the proportion of incidents classed as self-harming behaviour (from 17 per cent in January to March 2007, to 14 per cent in October to December 2007).

Similarly to mental health services, in learning disabilities services, patient accidents (31 per cent), disruptive/aggressive behaviour (28 per cent) and self-harming behaviour (17 per cent) were the most commonly reported incident types between January and December 2007. Incidents coded as 'other' accounted for 11 per cent while patient abuse accounted for five per cent. Medication accounted for four per cent and the remaining incident types accounted for two per cent or less (that is, access/admission/transfer/discharge, infrastructure, implementation of care and ongoing monitoring/review, treatment procedure, medical device/equipment, infection control incidents, documentation, consent/communication/confidentiality, and clinical assessment).

There was no substantial change in the pattern of incident types seen in learning disabilities services across the four quarters, with the exception of a consistent decrease in patient abuse (seven per cent in January to March 2007, compared with two per cent in October to December 2007). It may further be noted that the slight downward trend in patient accidents reported in QDS Issue 7 appears to have tailed off.

2

Figure 5:

Reported incident types in mental health services, January 2007 to December 2007

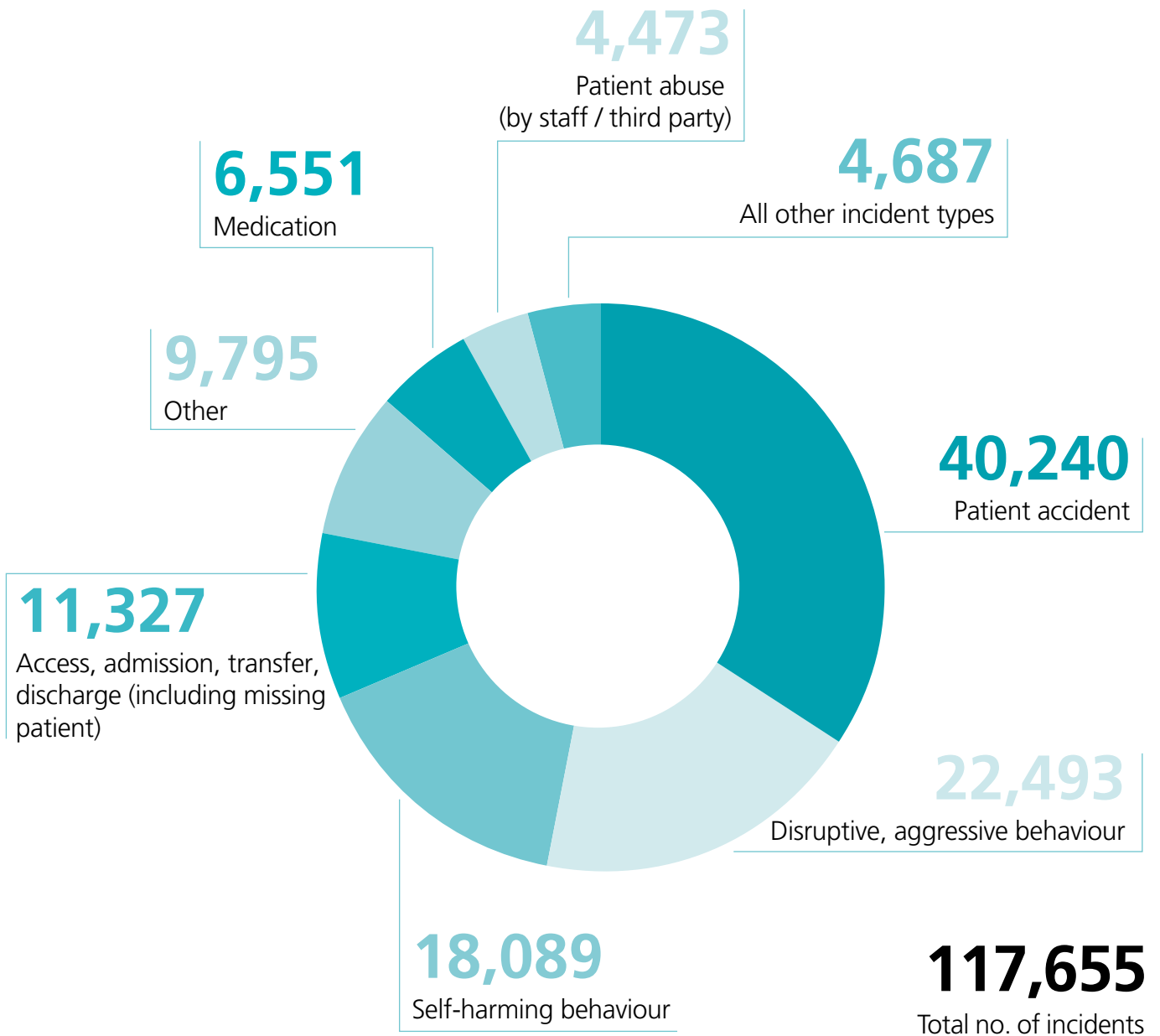
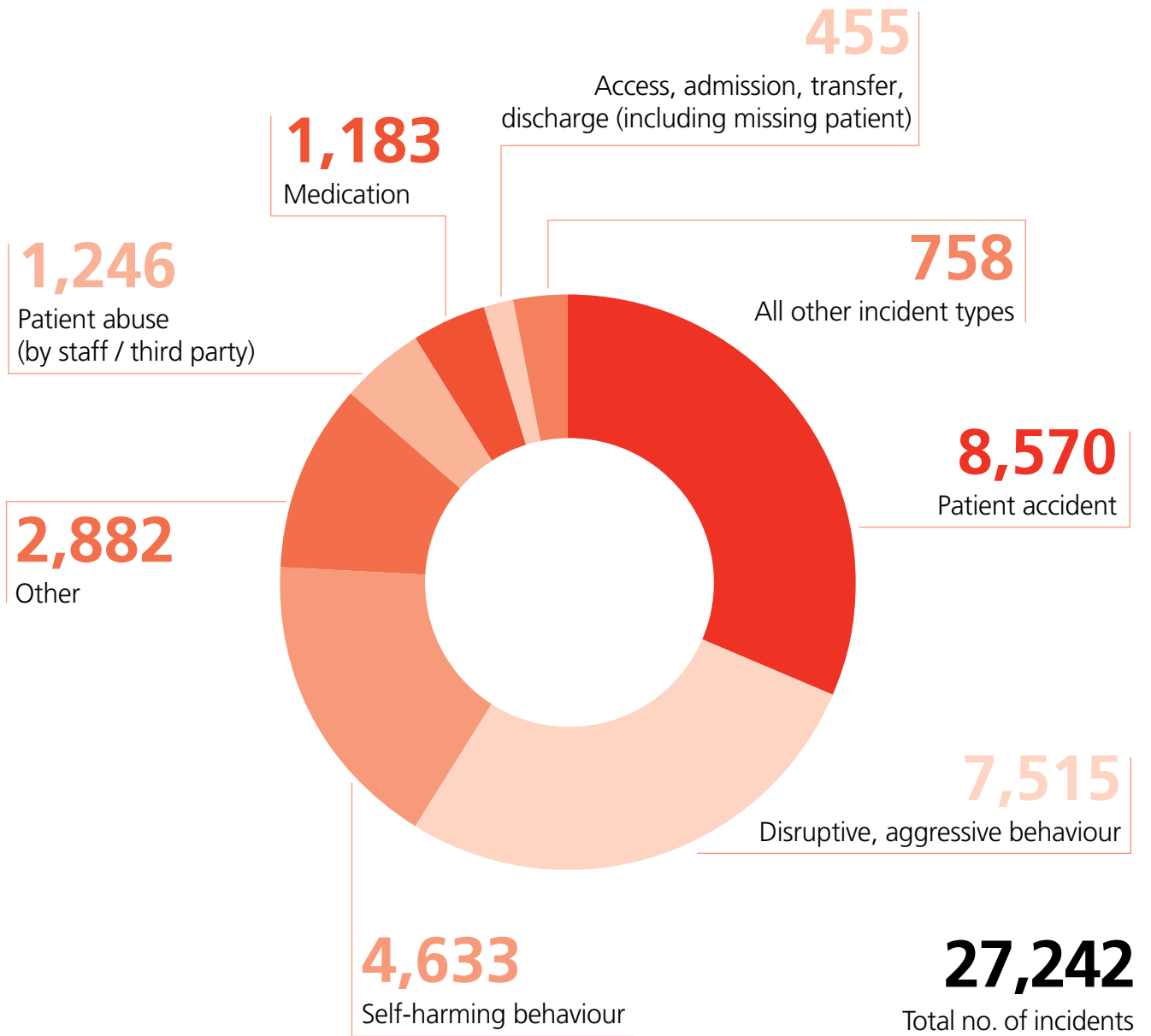


Figure 6:

Reported incident types in learning disabilities services, January 2007 to December 2007



Bleep-related incidents

From our regular analysis of NRLS incidents, several incidents relating to “bleeps” were noted. A thorough search of the NRLS was undertaken⁵ to investigate this issue further.

Between January and December 2007, there were there were **1,083** incident reports that referred to bleeps.

Location of bleep incidents

The majority (97 per cent) of bleep-related incidents occurred in general/acute hospital locations. Of these, 67 per cent were reported from wards, 10 per cent from A&E departments, and five per cent each from operating theatres and intensive care/high dependency units, with the remaining 14 per cent from a wide range of locations.

Although bleep incidents were reported from all acute specialties, a high proportion of incidents were reported from obstetrics and gynaecology specialty (21 per cent, compared to 14 per cent of all incidents), and fewer from medical specialties (28 per cent, compared to 43 per cent for all incidents).

Incident types

Categories of incidents reported are selected by reporters and vary greatly for bleep-related incidents that are similar. For example, a bleep that is not responded to may be categorised as ‘Delay or failure to monitor’ or ‘IT/telecommunications failure/overload’.

From the free text given in bleep-related incidents, in many cases it appears that bleeps had been sent, yet no responses were received:

“Staff bleeped Doctor ‘X’ 4 - no reply.”

“3 bleeps put out to registrar to attend labour ward for a foetal bradycardic. No reply. Crash bleep put out at 17.49 & again 17.51. Registrar did not appear.”

“Pt had not had IV access since 11am. SHO bleeped several times but too busy to come to ward.”

There are many reasons why this can occur: the wrong number was bleeped; the bleep network was down; the clinician was busy. However, this information was often not present in the incident text, it is likely that it was unknown at the time the incident was reported to the NPSA.

Time of day of reported incidents

The time of day of bleep incidents is shown in the chart opposite. More incidents occur during the day than at night, reflecting greater daytime activity. The highest numbers of bleep-related incidents occur between 2pm and 5pm. There appear to be peaks in reporting at common times for shift handovers: the most frequently reported time was 4pm, with smaller peaks at 2am, 8am and midday. This pattern is different to other incidents, which show a peak in the morning.

Impact on patients

Of the bleep-related incidents, 804 (74 per cent) were coded by reporters as causing no harm to the patient; 205 (19 per cent) as low harm and 74 (seven per cent) as resulting in moderate or more serious harm.

From a review of the free text of incidents resulting in moderate or more serious harm, the most common reason for the bleep being used was to seek medical review of the patient (in 29 cases), or to seek an intervention in the patient’s treatment (in 21 cases). In some urgent cases, the incident descriptions indicate that alternative means of contacting staff were used:

“Patient becoming increasingly unwell, bleeped SHO and no reply, rechecked number with switch and bleeped again with no reply. Medical Emergency Team call activated and patient transferred to ICU.”

Summary

A significant number of incidents that describe the use of bleeps are reported to the NRLS. The following themes can be noted from analysis of the reports:

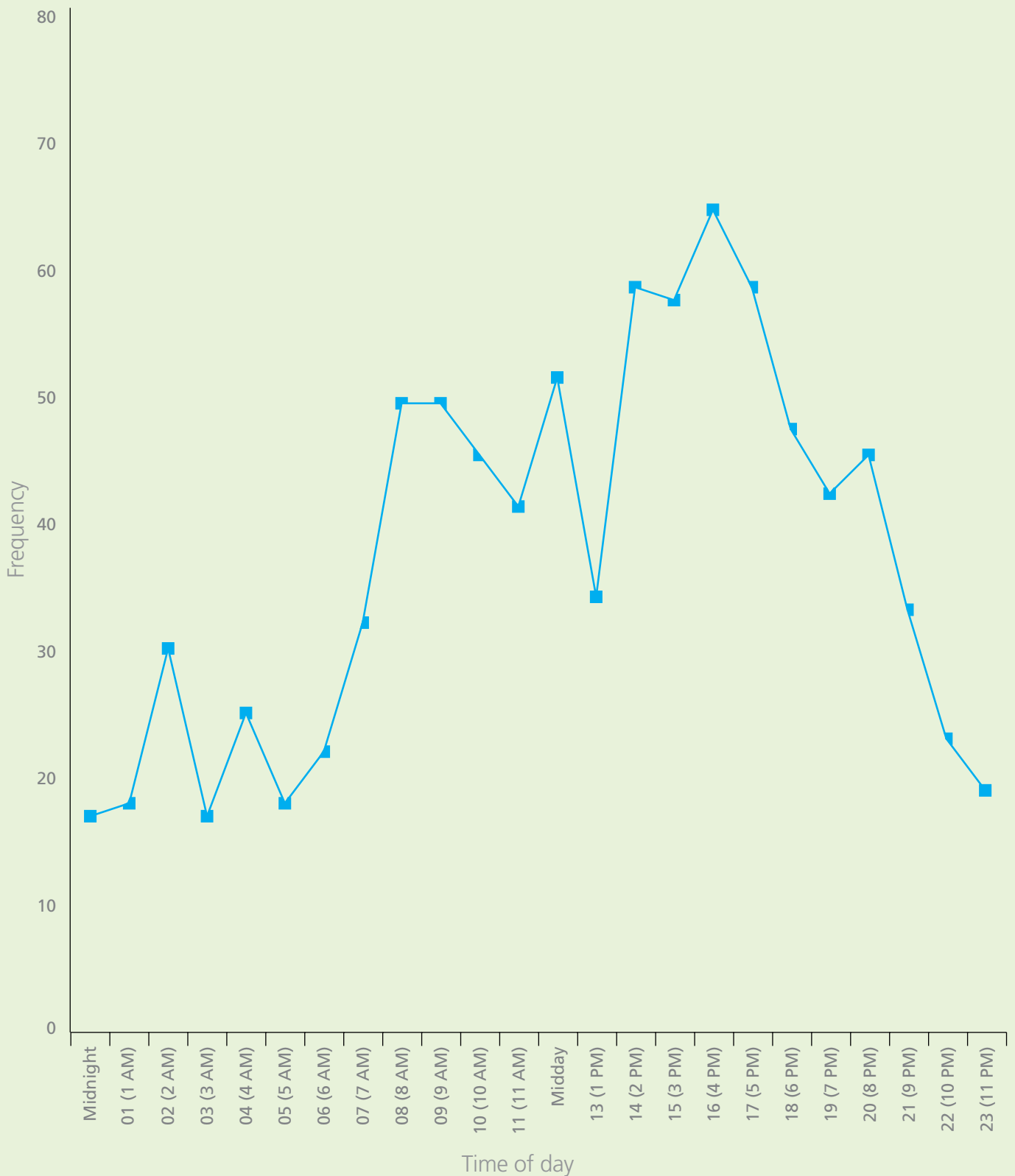
- bleep incidents are most often reported in the afternoon, particularly at 4pm, and at other common handover points during the day;
- bleep incidents are more likely to be reported from specialties where speed of response may be essential (for example, in obstetrics);
- within the more serious incidents that were reviewed, the most common reasons for using a bleep were to seek review or intervention for a patient;
- in some cases alternative means of contacting specialists were in place and used when there were problems getting a response through a bleep, but in others staff appeared unsure what to do when a response was not received;
- whilst most incidents involved bleeping medical or nursing staff, some incidents related to an urgent need to contact other groups of staff, e.g. technical staff needed to repair essential equipment or pharmacy staff to access urgent medication.

Bleeps are effectively a one-way form of communication, so local investigation is needed to determine why there was no response to the bleep. Potential causes of no response include:

- the wrong bleep number is being used (for example, the bleep of a staff member on annual leave);
- the bleep has been inadvertently left out of hearing by the bleep-holder;
- there is a technical fault with the bleep system, including flat batteries;
- the bleep holder is unable to respond (e.g. because they are too busy, or not near a telephone).

The NPSA will continue to monitor incidents relating to bleeps and would welcome feedback about how incidents have been investigated and addressed locally, whether through improvements to systems for using bleeps, or through alternative technology.

Frequency of bleep incidents displayed by hour of the day



[§] Incidents were identified in the following incident sub-types, which also contained the terms 'bleep' or 'pager' or 'beep' with any of 'fault', 'functioning', 'several times', 'several occasions', 'twice', 'bleeped again', 'incorrect number', 'broke', 'not working', 'not received', 'no response', 'any response', 'no reply', 'no answer', 'activate', 'failure', 'unable to contact': IT/telecommunications failure/overload; Delay/difficulty in obtaining clinical assistance; Failure of device/equipment; Failure/delay in collection/delivery systems; Inadequate check on equipment/supplies; Delay or failure to monitor; Communication failure - within team; Communication failure - outside of immediate team.

Radiotherapy-related incidents

Work to improve patient safety in the treatment of radiotherapy is being undertaken by the NPSA, in collaboration with the Royal College of Radiologists, the Health Protection Agency, the Society and College of Radiographers and other stakeholders.

The work includes the publication of *Towards Safer Radiotherapy*, which was developed by a working party set up by the Royal College of Radiologists. This can be downloaded from www.npsa.nhs.uk/patientsafety/improvingpatientsafety/patientsafetyinitiatives/cancer-care-patient-safety-initiative/

The project also aims to strengthen reporting mechanisms at both a local and national level, and to improve completeness of the data and the consistency in either local methods of reporting or nationally in terms of the classification. To assist staff with this process, the new guidance includes a radiotherapy pathway coding system that will be implemented in the coming months. In addition, the working

group will be surveying ways to improve local and national reporting amongst the radiotherapy community.

In the meantime, it is vital that we make the best use of the information available, whilst also recognising the limitations caused by variable data quality.

During the period 1 August 2006 and 31 July 2007, excluding slips, trips and falls (993 incidents), 2,628 incidents relating to radiotherapy were reported to the NRLS. A random sample of 350 incidents was reviewed, of which 133 were related to the process of radiotherapy treatment.

Using a keyword search, a further 64 patient safety incidents were found which were related to the process of radiotherapy. These 197 incidents were reviewed and separated into emerging themes and, where appropriate, sub-themes, using the NPSA systematic analysis process. Seven main themes were identified (Figure A).

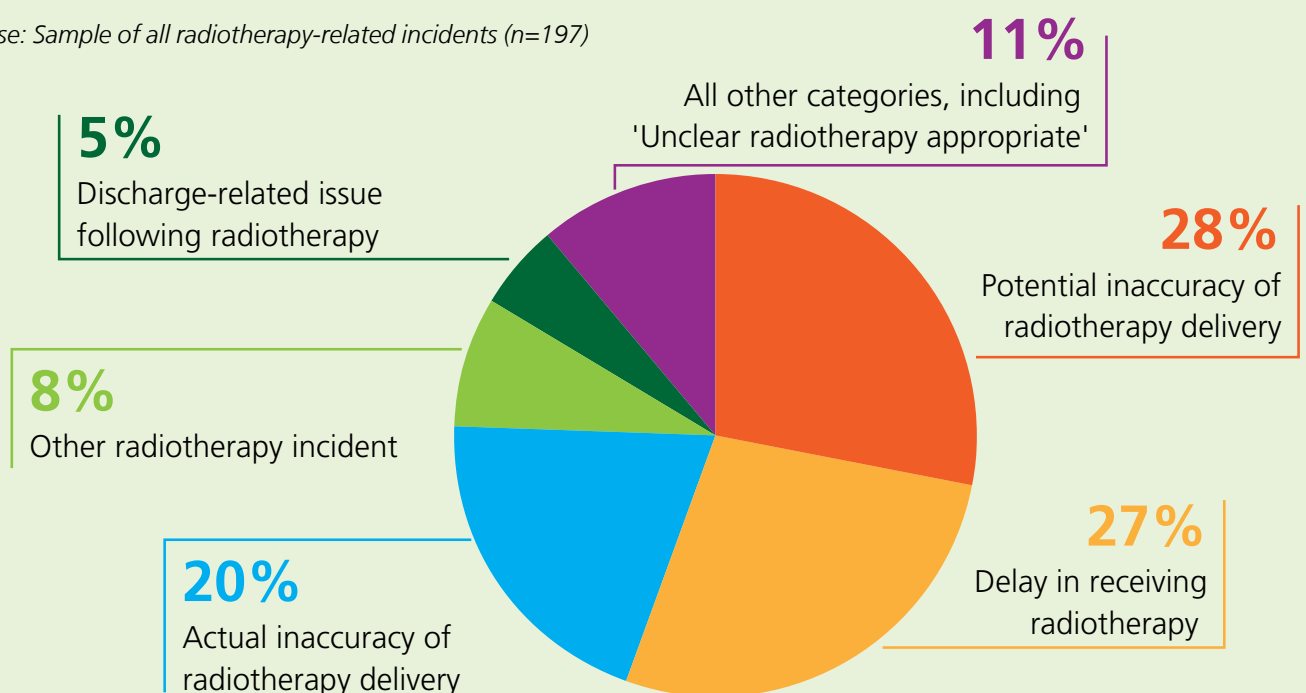
Main themes

The most common themes were potential inaccuracy of radiotherapy delivery, that is, 'near misses' detected before delivery of radiotherapy (28 per cent); delay in receiving radiotherapy (27 per cent); and actual inaccuracy of radiotherapy delivery, including minor errors in treatment unlikely to harm patients (20 per cent). Examples of these incidents are:

Figure A:

Main themes within radiotherapy incidents

Base: Sample of all radiotherapy-related incidents (n=197)



"Patient booked for right chest wall treatment but was actually a left sided lesion - noted at planning and planned correctly."

"Radiotherapy treatment card sent to clinic on Level B for weekly review 25 / 5 / 07. Pt admitted to xxxxxx, notes went to ward, treatment card it is believed didn't go with notes & was placed in basket to return to Level A. Treatment card not seen since. Unable to treat pt. on 29 / 5 / 07 due to insufficient set up information."

"The patient was set up incorrectly for radiotherapy treatment on one session of, i.e the eleventh treatment out of a total of 22 treatments. 2 of the four treatment areas were treated 7 cm inferiorly to correct planned target. The two other areas were treated correctly."

Incidents involving potential and actual inaccuracy of radiotherapy delivery

Potential and actual inaccuracy of radiotherapy delivery was identified in 96 incidents (49 per cent). These were broken down further into sub-themes (Figure B).

The most frequently reported sub-themes included alignment errors, calculation errors, errors at the preparation stage and left/right confusion, for example:

"Incorrect alignment of MLCs on first fraction of phase 2 treatment not picked up in checks. Shielding to SCF on anterior neck field aligned to superior corners rather than inferior corners. Discovered that original simulator film orientated incorrectly resulting in above error, but also noted that spinal shielding slightly offset. 1 fraction treated with slight error in spinal shielding."

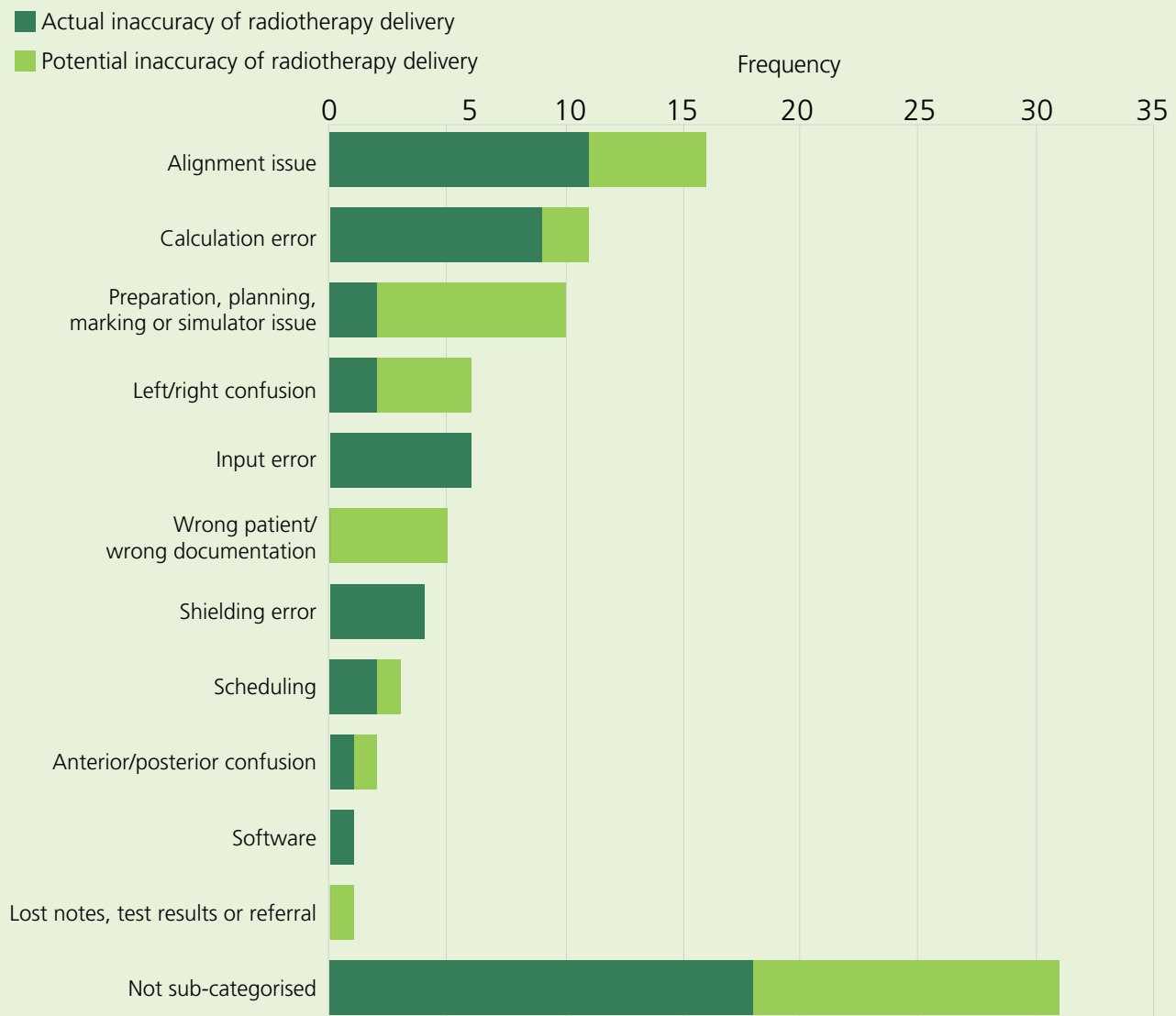
"On first day of breast treatment it was very difficult to align patient. Looking at outline the beam edge, not alignment height, had been tattooed by mistake."

"Radiotherapy treatment prescribed for left chest wall by Consultant. Area to be treated should be right chest wall. Patient planned correctly for right chest wall and also treated right chest wall as per planning form information, completed by radiographers. Mistake noticed prior to first treatment, and prescription changed. Correct treatment given. Plan not ready until 1700 hrs, treatment due to start following day at 0910 hrs."

Figure B:

Sub-themes within potential and actual inaccuracy of radiotherapy delivery

Base: Incidents involving actual or potential inaccuracy of radiotherapy delivery (n=96)



Incidents involving delays in delivering radiotherapy

Delays in radiotherapy were identified in 56 incidents (27 per cent) and also analysed into sub-themes. The most common sub-themes were preparation/simulator issue (10 incidents); transport (10 incidents); lost notes, test results or referral (nine incidents); and knock-on effects from delay in chemo (six incidents).

The most frequently reported delays were related to delays in the preparation or simulator stage or to transport, for example:

"The patient is due to start phase three of radiotherapy treatment of. The Dr has not been able to mark up this phase yet. New lead may be needed. The mould room will have no time to produce this lead in time for this patient to continue with phase three, without being very rushed. Patient may have a delay between phase 2 + 3."

Whilst transport problems may be a 'low tech' part of the patient journey through radiotherapy treatment, problems can cause missed or delayed treatments and patient distress, for example:

"major problems trying to get a pt into radiotherapy for treatment by ambulance transport. Ambulance service were extremely helpful but just did not have a vehicle with a

stretcher available. The pt needed to travel by stretcher due to the nature of her illness."

Degree of harm

Out of the reviewed sample of radiotherapy-related incidents (n=197), the vast majority of incidents were either coded as 'no harm' (77 per cent) or 'low harm' (19 per cent). The remaining four per cent were coded as 'moderate harm'.

Learning and future work

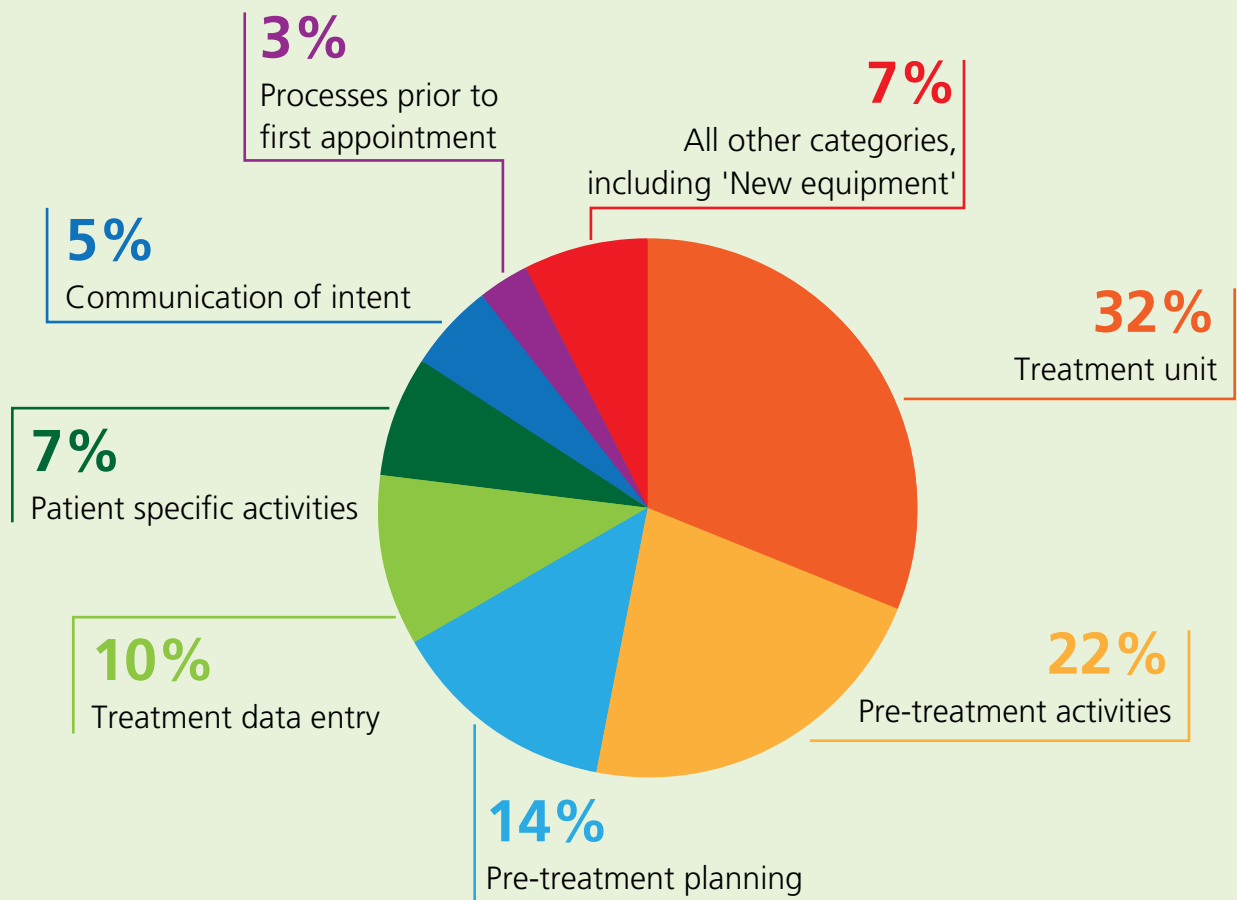
The NPSA is currently working with the Health Protection Agency (HPA) to improve the collection and analysis of patient safety incidents relating to radiotherapy. All radiotherapy centres are required to report patient safety incidents to the NPSA as usual.

A radiotherapy pathway coding system has been developed. This system has been tested by mapping existing incidents reported to the NRLS onto the pathway coding system. An example of the pathway coding of primary errors is provided in the chart below (Figure C). Regular analysis of radiotherapy incidents will be undertaken using this coding system, in order to provide prompt feedback to radiotherapy centres and enhance national learning.

Figure C:

Radiotherapy pathway coding of primary errors

Base: Incidents involving actual or potential inaccuracy of radiotherapy delivery (n=96)



Community services (including community hospitals), community pharmacies, community and general dental services, and community optometry and optician services

Overall, between January 2007 and December 2007, the most commonly reported type of incident in community services* (including community hospitals) was patient accident, which accounted for 51 per cent of all incidents.

None of the remaining categories accounted for more than 10 per cent: access/admission/transfer/discharge and medication both accounted for eight per cent, and incidents coded as 'other' accounted for five per cent. Treatment/procedure, implementation of care and ongoing monitoring/review, and infrastructure each accounted for four per cent.

The remaining categories each accounted for between one and three per cent (i.e. consent/communication/confidentiality, medical device/equipment, documentation, disruptive aggressive behaviour, clinical assessment, infection control incidents, self-harming behaviour, and patient abuse).

The pattern of incident types in community services (including community hospitals) was similar in all four quarters. The small but consistent downward trend in patient accidents that was reported on the previous issue of the QDS is no longer evident.

In community pharmacies, the vast majority of reported incidents between January 2007 and December 2007 related to medication (99 per cent). Neither of the remaining incidents types (i.e. consent/communication/confidentiality, documentation, medical device/equipment, infrastructure, treatment/procedure, disruptive/aggressive behaviour, patient abuse, patient accidents and incidents coded as 'other') accounted for more than a negligible proportion (each rounded down to 0 per cent).

In community optometry/optician services, no incidents were reported to have occurred in the quarter October to December 2007 and the overall number of incidents received between January and December 2007 remained very low (n=3). Therefore, no conclusions can be drawn with respect to incident patterns in this care setting.

In community dentistry, patient accident was the most commonly reported type of incidents between January 2007 and December 2007 (22 per cent). The next most commonly reported incident type was medical device/equipment (14 per cent), followed by treatment/procedure and access/admission/transfer/discharge (both 11 per cent). Infrastructure accounted for nine per cent and incidents classified as 'other' accounted for eight per cent. The remaining incident types ranged between six and one per cent (that is, medication, documentation, clinical assessment, consent/communication/confidentiality, patient abuse, infection control, disruptive/aggressive behaviour, implementation of care and ongoing monitoring/review).

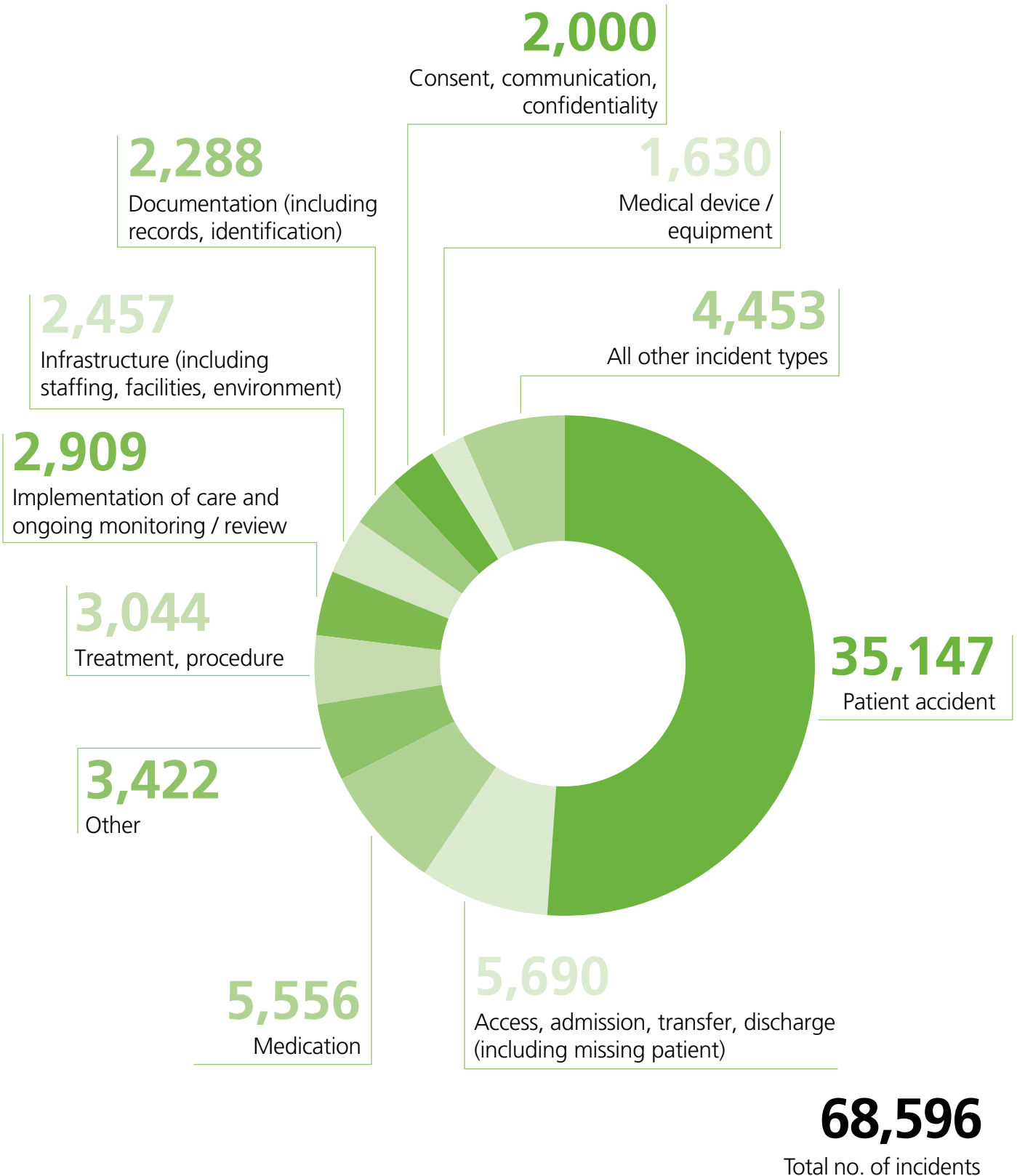
Whilst patient accident was the most commonly reported incident type in all four quarters, there were overall large fluctuations in the pattern of incident types. However, the number of reported incidents in each quarter is fairly low, which is likely to explain the inconsistent pattern.

* Community services include community nursing, medical and therapy services.

2

Figure 7:

Reported incident types in community services (including community hospitals), January 2007 to December 2007



Ambulance services

The most commonly reported incident type in ambulance services was access/admission/transfer/discharge, which accounted for almost a quarter of all incidents (24 per cent) between January 2007 and December 2007.

Medical device/equipment (20 per cent) and patient accident (15 per cent) were the next most commonly reported incident types, followed by consent/communication/confidentiality and infrastructure (both 10 per cent). Treatment/procedure accounted for nine per cent, while incidents coded as 'other' accounted for six per cent.

The remaining incident types accounted for three per cent or less (medication, clinical assessment, documentation, patient abuse, self-harming behaviour, implementation of care and monitoring/review, infection control, and disruptive/aggressive behaviour).

The pattern of incident types fluctuated notably during the four quarters between January 2007 and December 2007. These fluctuations are likely to be explained by differences in coding and reporting in the different quarters, and the relatively low number of incident reports received from this care setting. Although few consistent trends are evident, there was a substantial and continuous decrease in the proportion of reported patient accidents since January 2007 (from 20 per cent in January to March 2007, to nine per cent in October to December 2007). The proportion of incidents reported as being related to infrastructure also increased consistently and substantially during 2007 (from five per cent in January-March 2007 to 17 per cent in October-December 2007). In contrast, there was a consistent decrease in incidents from ambulance services that were categorised as access/admission/transfer/discharge (from 27 per cent in January to March 2007 to 20 per cent in October to December 2007).

The slight increase in the proportion of treatment/procedure incidents that was reported in the QDS Issue 7 is no longer evident.

General practice

The pattern of incident types in general practices showed a markedly different pattern compared to care settings that take inpatients.

Between January 2007 and December 2007, the most commonly reported incident type in general practice was medication (28 per cent), followed by documentation (15 per cent), access/admission/transfer/discharge and consent/communication/confidentiality (both 10 per cent).

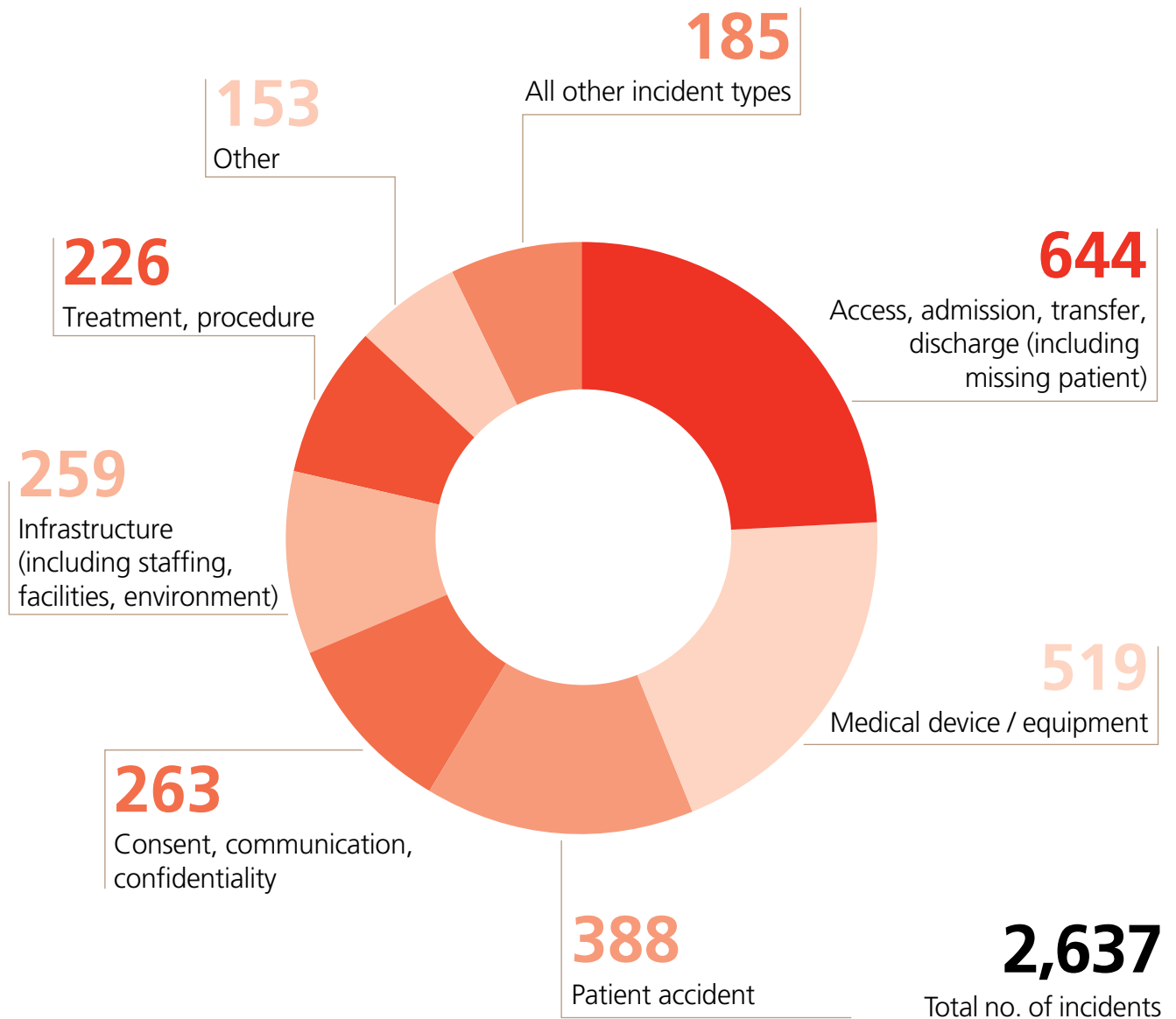
Clinical assessment and incidents coded as 'other' both accounted for seven per cent of all incidents. Treatment/procedure and patient accident accounted for six per cent and five per cent, respectively. The remaining incident types each accounted for four per cent or less (i.e. infrastructure, implementation of care and ongoing monitoring/review, disruptive/aggressive behaviour, medical device/equipment, patient abuse, self-harming behaviour, and infection control incidents).

Some variation was seen across the four quarters in the pattern of incident types, although no consistent trends were evident. The notable fluctuations are likely to be the result of the relatively low number of total incident reports submitted by general practices.

2

Figure 8:

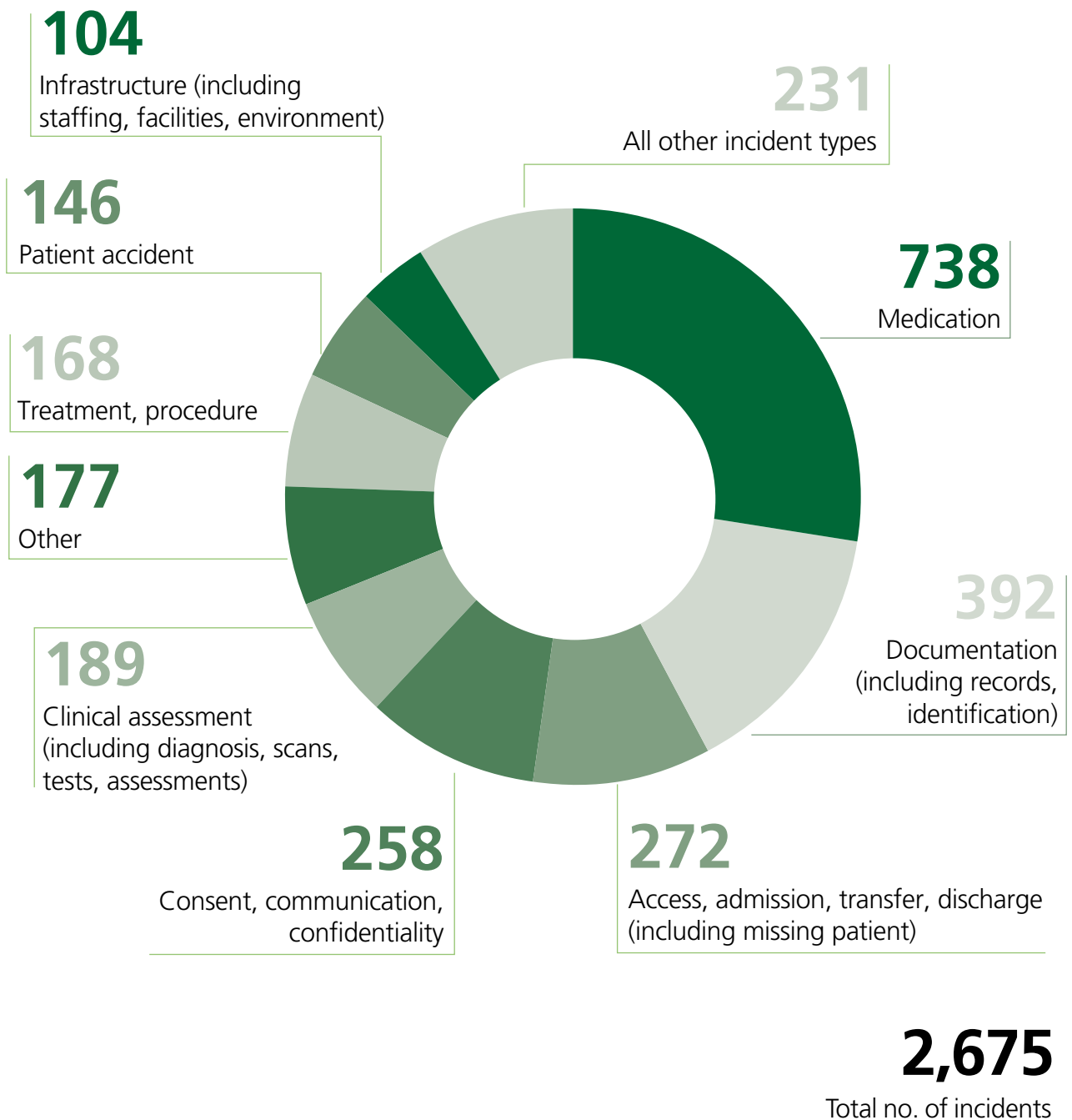
Reported incident types in ambulance services, January 2007 to December 2007



2

Figure 9:

Reported incident types in general practice, January 2007 to December 2007



Impact of incidents on patients

Degree of harm

Overall, in the four quarters between January 2007 and December 2007, 66 per cent of incidents were reported as resulting in no harm to patients.

Twenty-seven per cent were reported as causing low harm, and six per cent were reported as causing moderate harm.

One per cent of all incidents were consistently reported as resulting in severe harm or death, with the majority of these incidents being classified as severe harm rather than death. This pattern was similar across the four quarters.

Severe harm or death by care setting

Since the proportion of incidents resulting in either severe harm or death is very low, the proportions discussed in this section will be referred to using one decimal point.

The proportion of incidents reported as having caused severe harm or death to the patient showed some variation across care settings. The proportion reported between January 2007 and December 2007 was highest in general practices (2.4 per cent), followed by mental health services (1.7 per cent), community services (including community hospitals) and ambulance services (both 1.5 per cent). The equivalent proportion was 1.4 per cent in community and general dental service and 1.2 per cent in acute/general hospitals. In learning disabilities services and community pharmacies the proportions were 0.4 per cent and 0.2 per cent, respectively.

It is likely that the relatively high proportion of incidents reported as resulting in either severe harm or death in general practices reflects a different reporting culture compared to other care settings: fewer incidents are reported overall but incidents that result in severe harm or death are most likely to be reported.

In almost all care settings, the proportion reported as resulting in severe harm was higher than the proportion reported as causing death. For example, in general practice the proportion reported as resulting in severe harm was 1.4 per cent, whereas the proportion reported as causing death was 1.0 per cent.

In community services (including community hospitals) the equivalent proportions were 1.1 per cent and 0.4 per cent, respectively. The exception to this pattern was mental health services, where 1.1 per cent of incidents were reported to have caused death, compared to 0.7 per cent of incidents resulting in severe harm. This pattern was largely similar in the four quarters.

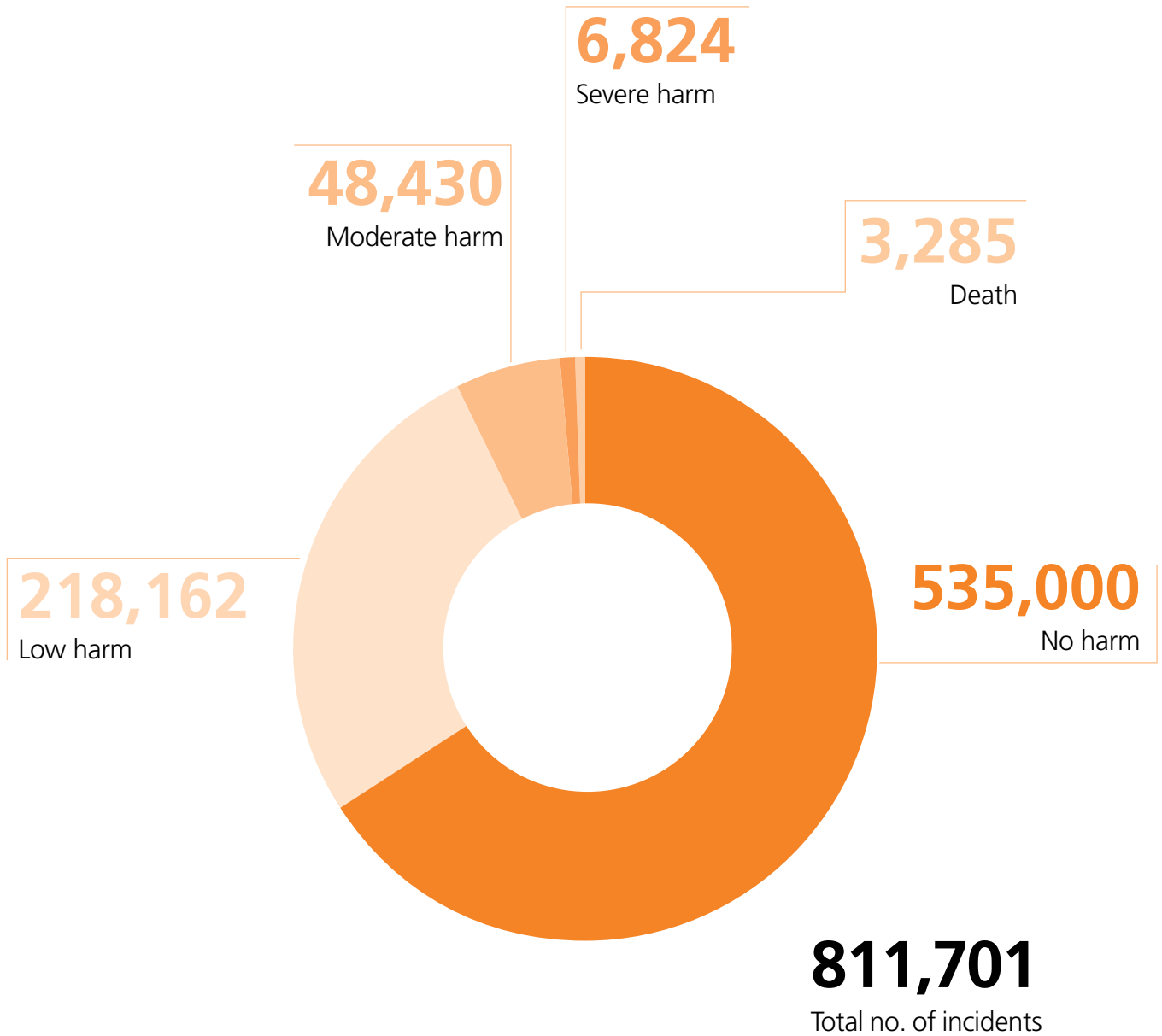
The NPSA reviews all incidents where the harm to a patient is reported as death or severe harm. The fifth report from the Patient Safety Observatory, *Safer care for the acutely ill patient: Learning from serious incidents*, shares learning about two related patient safety issues in acute care settings which were identified as themes from analysis of reports of incidents resulting in death: deterioration not recognised or acted on, and resuscitation.

From analysis of incidents reported as resulting in death, the NPSA has found that only about a third of these incidents are events in which the death of the patient was, or might have been, directly related to patient safety. Some incidents may be coded based on the potential harm to the patient, rather than the actual harm. In other cases, the patient may have died but not as a result of a patient safety incident. Organisations often capture events in the local risk management system where patients have died, even if there was no patient safety incident, for example, still births and neonatal deaths, and outpatient suicides. Furthermore, even following investigation, the relationship between any incident which occurred and the outcome for the patient is often unclear, as many incidents happen during the care of patients with life-threatening illness. For further information on incidents reported as deaths from maternity services, see the Quarterly Data Summary Issue 6.¹

Coding of degree of harm to patients is an important aspect of data quality which the NPSA is working with NHS organisations to address.

Figure 10:

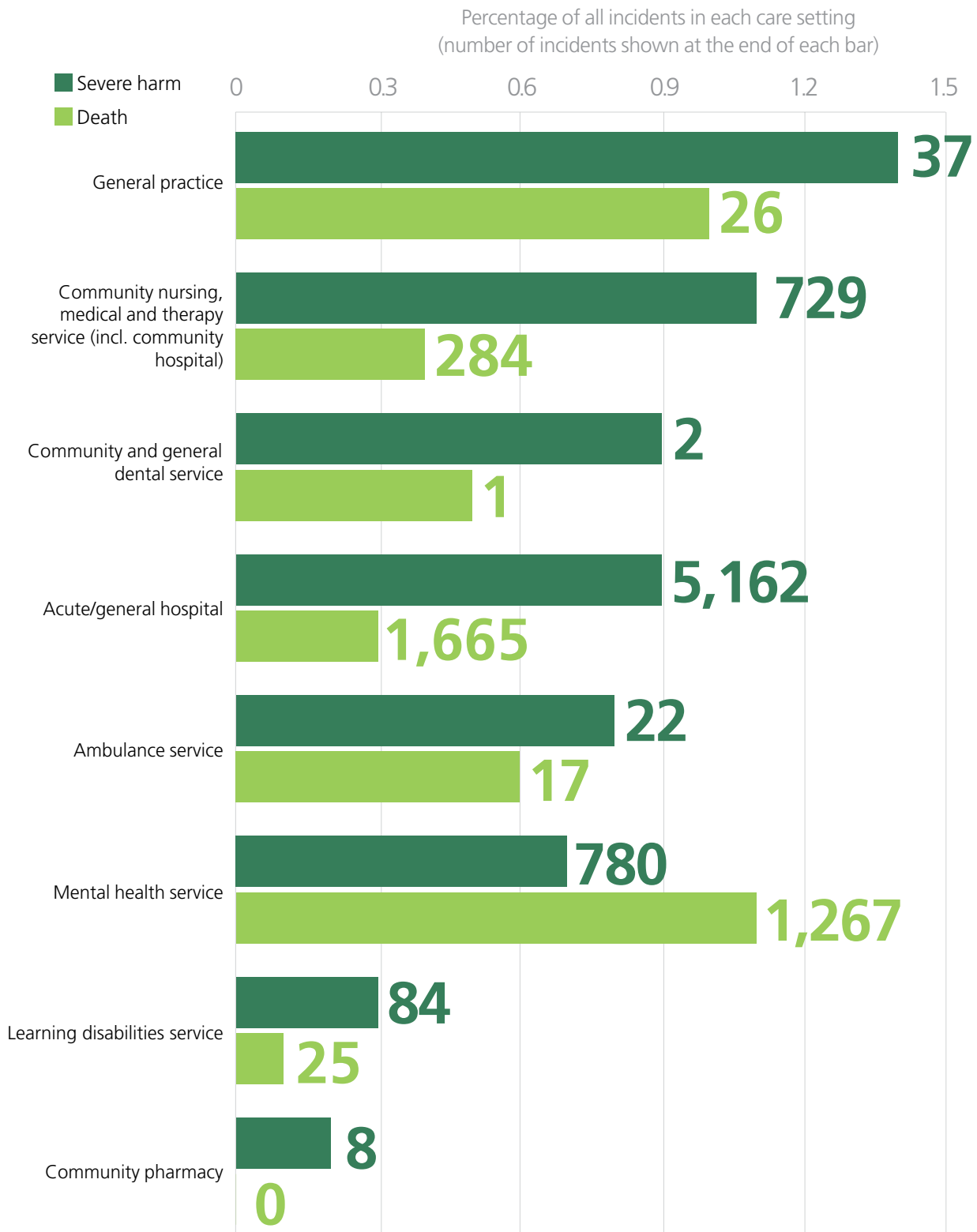
Reported degree of harm to patients,
January 2007 to December 2007



Note: The total number of incidents (811,701) is lower than that quoted elsewhere, as it excludes those incidents where degree of harm was not stated.

Figure 11:

Reported incidents resulting in severe harm or death, by care setting, January 2007 to December 2007



The National Reporting and Learning System

The reporting of patient safety incidents is essential to improving safety. One of the NPSA's core functions has been the development of the NRLS to collect reports of patient safety incidents.

Incident reporting enables the types and causes of safety problems to be identified so that practical solutions can be developed to prevent harm to patients.^{1,2}

The publication by the Department of Health of *Safety First* in December 2006 has provided the NPSA with a set of recommendations, one of which is to improve the current reporting systems and feed back actionable learning to the NHS. In light of this, the NPSA is currently reviewing the mechanisms for collecting reports of patient safety incidents.

Although incident reports are fundamental to understanding patient safety, on their own they cannot tell us all that we need to know. There are a number of reasons for this. Incident reporting systems are not comprehensive due to under-reporting, biases in what types of incident are reported, and the existence of several reporting systems. For example, in the UK, in addition to the NRLS there are separate reporting systems for medical device incidents,³ adverse drug reactions,^{4,5} healthcare associated infections,⁶ and suicide and homicide of people with mental illness.⁷ Also, serious incidents are rare, and information on them is often distributed across the healthcare system.

The NRLS data set is designed to collect a notification report of a single patient safety incident soon after it occurs. It focuses on what happened, when and where it happened, the characteristics of the patient(s) involved (such as age, gender and ethnicity) and the outcome for the patient(s).

The data set includes contributory factors and factors that might have prevented harm. Reports contain free text that explains what happened in varying degrees of detail. Additional detail is provided in reports involving medication and medical devices.

There are a number of notes of caution in interpreting the data from the NRLS:

- NHS organisations have provided data to the NRLS for varying lengths of time, so data included within this report may not be representative of the rate of incidents across all of England and Wales.
- Reports made to local risk management systems may not capture all types of incidents that occur.

- The data are confidential. The NPSA does not seek to hold information on the identities of individual staff or patients, and this means that the data are not routinely checked with the reporter. However, steps are usually taken to maximise the quality of the data held by, for example, checking for duplicate reports and feeding back to individual trusts if there are problems with their reports.
- Incident reports are often made soon after the incident occurs but before the incident has been investigated locally. Therefore, reports to the NRLS may not contain complete information about the incident, especially findings of more detailed investigations such as root cause analysis.
- No reports from the public or patients are included in this analysis, although since April 2006 patients and the public have been able to report incidents via a dedicated reporting form.
- A higher number of reported incidents from a trust, specialty or location, does not necessarily mean that the trust, specialty or location has a higher number of incidents; it may instead reflect greater levels of reporting.
- Some incidents recorded in local risk management systems and subsequently forwarded to the NRLS may not technically be patient safety incidents. For example, deaths from natural causes which occurred in hospital, and also deaths where patients died unexpectedly, are sometimes reported to local risk management systems, for local audit purposes, and hence are reported to the NRLS.
- The data are likely to include incidents where the impact on the patient or whether the incident could have been avoided, is not clear. For example, suicides are often reported to local risk management systems in cases where the event could not have been prevented by health services.
- The level of detail collected locally varies. For example, some organisations and local data collection systems do not currently collect contributing factors or the ethnicity of the patient(s) involved. At the present time, there is insufficient information on the age and gender of patients involved in incidents to allow analysis of this information, but the quality of demographic data is improving.

Organisations reporting higher numbers of patient safety incidents may have a better developed safety culture, resulting in greater reporting and learning from reports.

References

References

All websites accessed on 7 May 2008

1. National Patient Safety Agency, *Quarterly Data Summary Issue 6*. (October 2007) Available at: www.npsa.nhs.uk/patientsafety/patient-safety-incident-data/quarterly-data-reports/
2. Institute of Medicine. *To Err is Human: Building a safer health system*. (2000).
3. Leape LL. Reporting of adverse events. *New England Journal of Medicine*, 2002; 347(20): 1633–8
4. Department of Health. *Safety First – A report for patients, clinicians and healthcare managers*. (December 2006). Available at: www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4006679
5. Medicines and Healthcare products Regulatory Agency. Reporting adverse incidents involving medical devices. Available at: www.mhra.gov.uk/home/idcplg?IdcService=SS_GET_PAGE&nodeId=291
6. Medicines and Healthcare products Regulatory Agency. Reporting suspected adverse drug reactions and suspected defects in medicinal products. Available at: www.mhra.gov.uk/home/idcplg?IdcService=SS_GET_PAGE&nodeId=286
7. Health Protection Agency. Surgical Site Infection – Mandatory surveillance of orthopaedic categories. Available at: www.hpa.org.uk/infections/topics_az/surgical_site_infection/ManSurv.htm
8. Appleby L et al. *Safety First: Five-Year Report of the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness*. (2000). Available at: www.dh.gov.uk/assetRoot/04/05/82/43/04058243.pdf

To reference this report and the data presented, the following citation is suggested:

National Patient Safety Agency. *Patient safety incident reports in the NHS: National Reporting and Learning System Data Summary*. Issue 8: 1 January 2007 to 31 March 2008.

National Patient Safety Agency

4–8 Maple Street
London
W1T 5HD

T 020 7927 9500
F 020 7927 9501

www.npsa.nhs.uk

Reference: 0745 May 2008

© National Patient Safety Agency 2008. Copyright and other intellectual property rights in this material belong to the NPSA and all rights are reserved. The NPSA authorises healthcare organisations to reproduce this material for educational and non-commercial use.