ISSUE 5

1 APRIL TO 30 JUNE 2007

Patient safety incident reports in the NHS:

NHS
National Patient Safety Agency
Reporting and Response

NATIONAL REPORTING AND LEARNING SYSTEM DATA SUMMARY

Putting patient safety first

Contents

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 reports and the accompanying workbooks.

These reports provide details of the volume of incident reports received, what sector they are from, what type of incidents they describe and what the level of harm was to the patient/s involved.

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 how the NRLS works, see the appendix on page 19.

Two sets of data and analysis are presented:
Section one describes reporting to the NRLS and uses data based on the date that the report is received by the NPSA. The data covers the period up to the end of June 2007 and shows the numbers of reports received by quarter.

Section two is an analysis of patterns and trends in patient safety incident reports. It uses data based on the date that the patient safety incidents occurred. The data covers the four quarters up to March 2007.

Workbook

This report summarises the NRLS data, drawing out key trends and themes. To accompany this report, a data workbook is available on the NPSA website. As well as giving all the data underpinning the analysis in this summary, the workbook provides further notes on the data extracted.

Using the data

Data presented in this report and the accompanying data workbook can be used in several ways, including: as a tool to benchmark local data against national trends; provide denominator data for research; and to enable triangulation with other data sources. Notes to aid the accurate interpretation of NRLS data are provided in the appendix on page 19.

NOTE:
This issue of the Data Summary introduces a new format for the report and a new way of extracting the data. Because of this change, comparisons should not be made between the data in these two sections, or with previously published quarterly NRLS data summary reports.

Patient safety highlights

Each quarter we include recent information on patient safety in the UK, including selected highlights of literature on patient safety published in this quarter and key patient safety initiatives from the NPSA and other healthcare organisations.

Much can be learned about improving patient safety by examining reporting data alongside other data research and literature.

Article alert

Managing clinical failure: a complex adaptive system perspective. Matthews, J.I. et al. *International Journal of Health Care Quality Assurance* 2007; 20(3): 184–194

This qualitative study in a secondary care NHS trust explores the knowledge capture process at a clinical level. The study found that there is a network structure which exhibits working practices which support knowledge capture and adaptive learning. However, characteristics of bureaucracy (e.g. a rule-based culture, hierarchical lines of communication and centralised governance) generate barriers to clinical learning. It proposes that local collaborative processes are a key strategic resource to capture knowledge, fostering an environment that could learn from failure and translate lessons between contexts. It suggests that reporting supplements learning by highlighting potential lessons in context as well as aiding governance.

Organizational interventions to promote risk management in primary care: the experience in Warwickshire, England. Wallace, L.M. et al. *Health Services Management Research* May 2007; 20(2): 84–93

This paper describes how an English health authority promoted interventions to improve risk management in 75 General Practices. There was evidence of improved competence in risk management over the period of the study, particularly through a widening breadth of staff involved and in formal recording systems. There was little evidence that these improvements were mediated by organisational culture. The paper argues that future interventions should more closely target specific competences (e.g. root cause analysis) and enable staff to see tangible personal and organisational benefits for the extra effort involved.

Initiatives

Nine solutions to improve patient safety
The World Health Organization has developed nine 'patient safety solutions'to help reduce harm during medical care. The solutions are based on interventions that have been found to improve patient safety around the world.

For more information, go to:
www.who.int/mediacentre/news/releases/2007/pr22/en/index.html

Guidelines for safety and quality in anaesthesia practice
A working party on Safety and Quality in Anaesthesiological Practice in the Section and Board of Anaesthesiology of the European Union of Medical Specialists (EUMS/UEMS) has prepared guidelines that were recently amended and approved.

More information can be found in: Guidelines for safety and quality in anaesthesia practice in the European Union. Mellin O.J, et al. *European Journal of Anaesthesiology*, Jun 2007 24(6): 479–82.

Safe medication practice work programme for 2007–08
At the end of March 2007, the NPSA launched five patient safety alerts on medication safety; forming a work programme for 2007–2008. The alerts cover; anticoagulant therapy, oral medicines, injectable medicines, epidurals and paediatric infusions.

For more information go to:
http://www.npsa.nhs.uk/public/display?contentId=5807

NPSA safer practice notice on wristbands
In May 2007, the NPSA published a safer practice notice on how standardising wristbands for hospital inpatients can improve patient safety.

For more information go to:
http://www.npsa.nhs.uk/health/display?contentId=6073

Section:

1

Reporting to the NRLS

Set out in this section is the quantitative data and analysis of the volume and frequency of reports of patient safety incidents received by the NRLS.

The data analysed in this section has been extracted using the date that the incident report was received by the NPSA. The most recent quarter covered is April to June 2007.

> Between April - June 2007, an average of 66.4 percent of the 430 NHS organisations reported to the NRLS

Number of reports and organisations reporting to the NRLS

Between April and June 2007, the NPSA received 242,595 patient safety incident reports.

This brings the total number of patient safety reports received up to the end of June 2007 to 1,668,437.

There was a spike in report submissions in May 2007 when 107,190 reports were received. This spike was probably due to the introduction of a deadline for organisations to report data, which was tested during this quarter.

As might be expected with the introduction of a new system, the number of NHS organisations reporting to the NRLS increased rapidly initially and the number of organisations that have been connected by their preferred route has also increased.

There has been a decrease in the number of NHS organizations in England and Wales reporting incidents from 580 on 1 July 2006 to 430 on 1 October 2006. However, the number of reports submitted has continued to increase.

Most incidents are reported electronically to the NRLS via local risk management systems: between April and June 2007, 98.8 per cent of reports came via this route. This is the dominant route for report submission, as evidenced by the fact that the proportion of reports submitted via this route has not dropped below 98 per cent since January to March 2004.

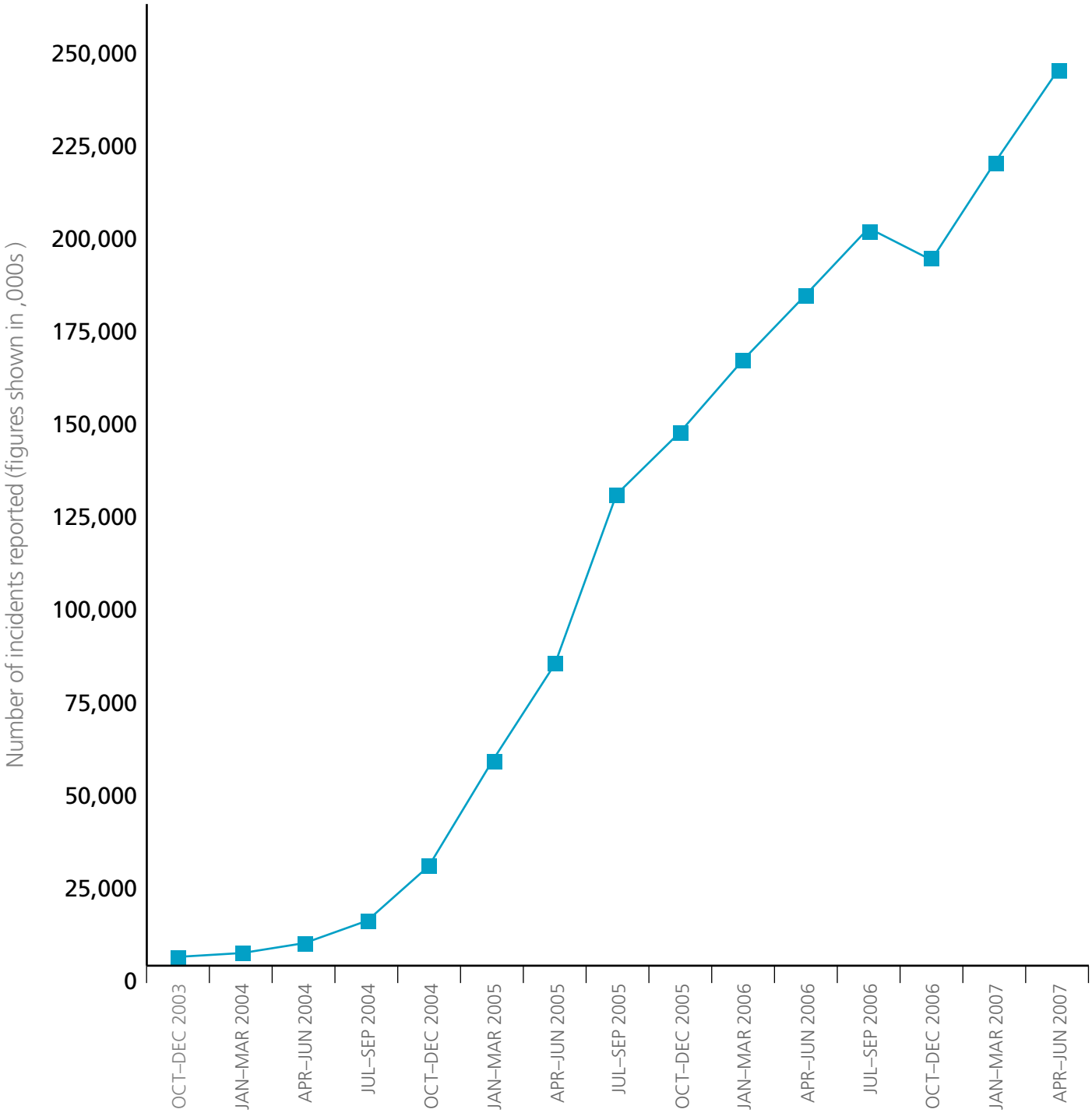
NOTE: *The data presented in this section should not be compared with data in section 2 of this report (trends and patterns in reporting) as it is not based on the same dataset. All the data tables are contained in the workbook which accompanies this report.*

Section:

1

Figure 1:

Number of incidents reported by quarter, November 2003 to June 2007



Section:

2

Trends and patterns in patient safety incidents

This section provides quantitative data and analysis on the patterns and trends in patient safety incidents which have occurred over a one year period.

The data in this section of the report have been extracted using the date that the incident is reported as having occurred.

Interpreting the data

The data are presented by quarter, covering four consecutive quarters from 1 April 2006 to 31 March 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 was extracted on 4 July 2007. Further incidents which occurred during the period April 2006 to March 2007 that have been sent to the NRLS since this date will be included in subsequent quarterly data summary reports.

Data in this section has been through data quality measures to eliminate duplicate data, blank reports and reports which do not describe patient safety incidents.

The full dataset for this section are provided in the data workbook which accompanies this report.

Volume of patient safety incidents

During the one-year period between April 2006 and March 2007, a total of 727,736 patient safety incidents occurred and were reported to the NRLS.

Between January and March 2007 175,562 patient safety incidents occurred; a decrease of almost 10,000 compared to the previous quarter, although this is likely to reflect the time-lag in incidents reaching the NRLS.

Types of patient safety incidents

The most frequently occurring incident type is consistently patient accidents, which accounts for between 36 and 38 per cent of all incidents reported between April 2006 and March 2007.

The third report from the Patient Safety Observatory provides detailed analysis of incident reports of patient falls in hospital.[1]

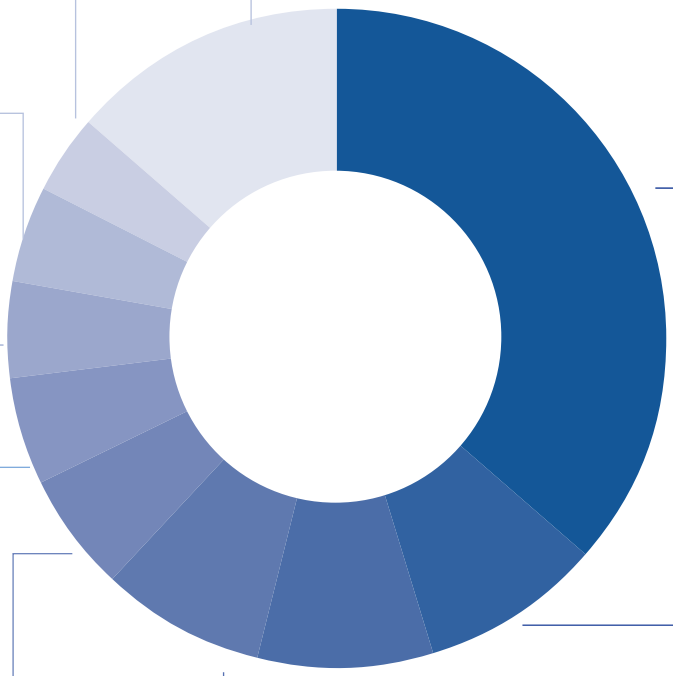
NOTE: *Data presented in this section should not be compared between summary reports, nor should it be compared with data in section 1 of this report, as it is not based on the same dataset.*

Section:

2

Chart 2:

Reported incidents by type, April 2006 to March 2007



28,596
Consent, communication, confidentiality

98,347
Other incident types (grouped)

33,709
Disruptive, aggressive behaviour

35,316
Clinical assessment (including diagnosis, scans, tests, assessments)

265,343
Patient accident

37,210
Documentation (including records, identification)

64,227
Treatment, procedure

42,476
Infrastructure (including staffing, facilities, environment)

62,660
Medication

59,852
Access, admission, transfer, discharge (including missing patient)

727,736
Total no. of incidents

*Please note that the dates are based on the date the reported incident occurred (IN01). This table is based on data as of 02 July 2007 and takes into account patient group incidents.

Section:

2

Patterns of incidents in different care settings

The majority of patient safety incidents (73 per cent, 128,144 incidents) in January to March 2007 occurred in acute trusts, this is similar to the previous three quarters figure 3.

Although most healthcare is provided in the community, hospitals tend to have more well established incident reporting systems and a more active reporting culture. The total of all community-based settings (community nursing, community pharmacy, general practice, general dental services and community optometry and opticians) only account for 9.4 per cent (68,346) of all incidents reported over the year (April 2006 to March 2007).

There are some differences between the most commonly reported incidents for different care settings and these fluctuate between quarters. For example over this one year period, in acute/general hospitals, the most frequently reported incident was consistently patient accident (34.8 per cent, 182,510 incidents) figure 4.

In ambulance services the most frequently occurring incident over the one year period was access/admission/transfer/discharge (23.4 per cent, 565 incidents) figure 5.

The type of incident also varies within a setting between quarters. For example, although access/admission/transfer/discharge was the most frequently occurring incident in ambulance services over the four quarters, medical device/equipment was the most common incident between October and December 2006 (26.1 per cent, 159 incidents).

Section:

2

Figure 3:

Care setting of incident reports by quarter, April 2006 to March 2007

Total no. of incidents	Care setting	Apr–Jun 2006	Jul–Sep 2006	Oct–Dec 2006	Jan–Mar 2007
523,875	Acute/general hospital	131,149	131,067	133,515	128,144
107,747	Mental health service	27,025	26,487	27,916	26,319
63,797	Community nursing, medical and therapy service (incl. community hospital)	18,325	16,479	15,395	13,598
25,354	Learning disabilities service	6,290	6,772	6,428	5,864
2,414	Ambulance service	630	630	609	545
2,410	General practice	698	688	592	432
1,971	Community pharmacy	414	473	450	634
163	Community and general dental service	59	45	34	25
5	Community optometry / optician service	2	2	0	1
727,736	Total no. of incidents	**184,592**	**182,643**	**184,939**	**175,562**

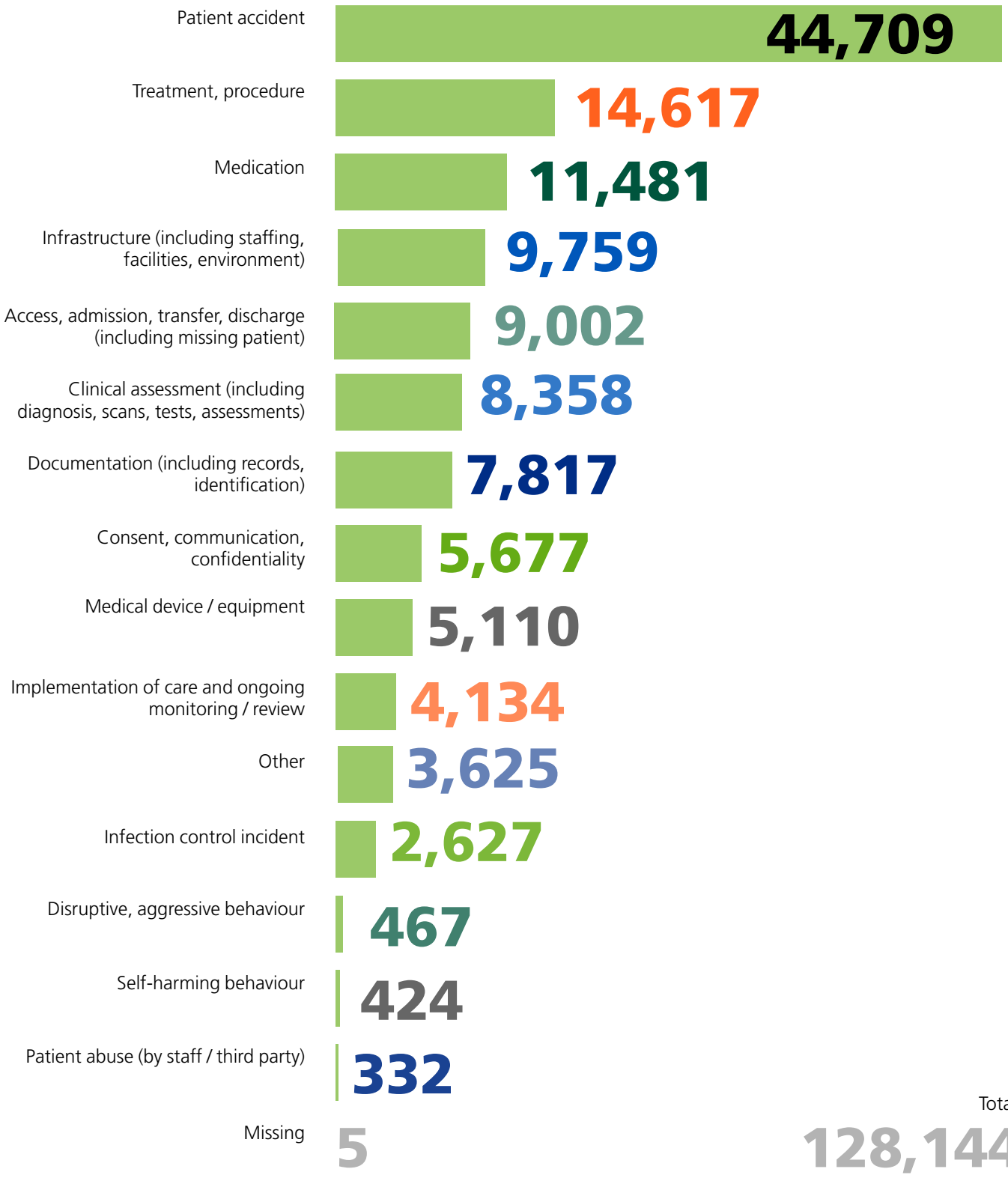
*Please note that the dates are based on the date the reported incident occurred. This table is based on data as of 02 July 2007 and takes into account patient group incidents.

Section:

2

Figure 4:

Reported incidents, by type, in acute/general hospitals, January to March 2007



*Please note that the dates are based on the date the reported incident occurred. This table is based on data as of 02 July 2007 and takes into account patient group incidents.

Section:

2

Figure 5:

Reported incidents, by type, in ambulance services, April 2006 to March 2007

Total no. of incidents	Incident type	Apr–Jun 2006	Jul–Sep 2006	Oct–Dec 2006	Jan–Mar 2007
565	Access, admission, transfer, discharge (including missing patient)	124	155	148	138
552	Medical device / equipment	137	146	159	110
449	Patient accident	112	119	95	123
198	Consent, communication, confidentiality	53	45	61	39
192	Infrastructure (including staffing, facilities, environment)	65	49	46	32
192	Treatment, procedure	59	59	37	37
88	Medication	32	24	16	16
62	Missing and other	18	8	9	27
39	Clinical assessment (including diagnosis, scans, tests, assessments)	17	9	8	5
23	Documentation (including records, identification)	3	7	8	5
16	Patient abuse (by staff / third party)	2	2	6	6
15	Self-harming behaviour	5	3	4	3
14	Implementation of care and ongoing monitoring / review	1	4	7	2
7	Infection control incident	1	0	4	2
2	Disruptive, aggressive behaviour	1	0	1	0
2,414	Total number of incidents	630	630	609	545

*Please note that the dates are based on the date the reported incident occurred. This table is based on data as of 02 July 2007 and takes into account patient group incidents.

Section:

2

Mental health services

Patient accidents are the more frequently reported incident type in mental health services between April 2006 and March 2007. However, as shown in figure 6, three other types of incidents account for almost half of all other incidents over the same time period.

These are: disruptive/aggressive behaviour (20.7 per cent), self-harming behaviour (17.2 per cent) and ccess/discharge (10.9 per cent).

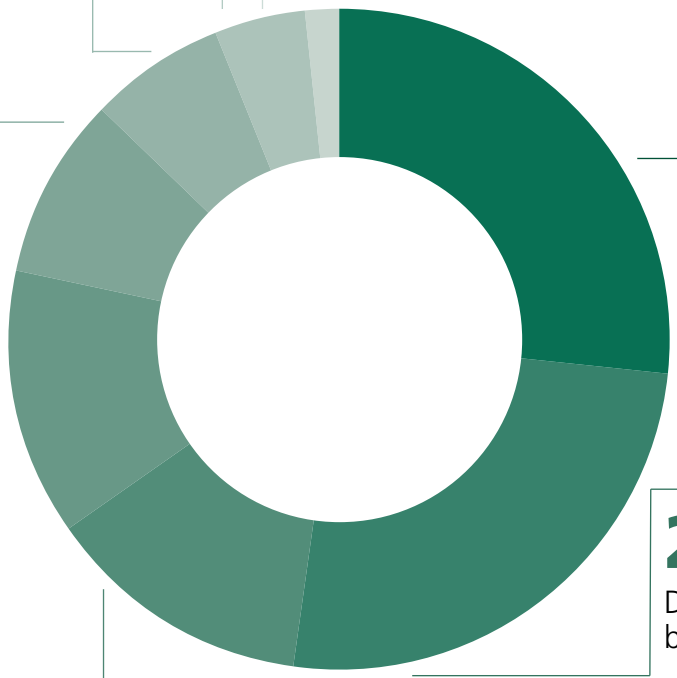
Incidents in mental health services are analysed in detail in the second report from the Patient Safety Observatory, ***With Safety in Mind: mental health services and patient safety.***[2] The most frequently occurring incidents in learning disabilities services over the year are similar to those in mental health settings (patient accident, disruptive/aggressive behaviour and self-harming behaviour).

Section:

2

Chart 6:

Reported incident types in mental health services, April 2006 to March 2007



2,032
Infrastructure (including staffing, facilities, environment

2,581
Other incident types (grouped)

38,947
Patient accident

22,317
Disruptive, aggressive behaviour

18,561
Self-harming behaviour

11,737
Access, admission, transfer, discharge (including missing patient)

4,711
Medication

4,634
Other

2,191
Patient abuse (by staff / third party)

107,607
Total no. of incidents

*Please note that the dates are based on the date the reported incident occurred. This table is based on data as of 02 July 2007 and takes into account patient group incidents.

Section:

2

Community settings

In common with inpatient settings, the predominant incident type reported to the NRLS from community nursing, medical therapy services was also patient accident, which accounted for more than half (54.2 per cent) of incidents over the year - figure 7.

In the two other main community-based settings; general practice and community pharmacy, the most common incident type is medication error.

In community pharmacy, medication error constitutes 97.8 per cent of incidents (1,928) over the year.

Medication errors accounted for a quarter (25.2 per cent, 607 incidents) of all incidents in general practice between April 2006 and March 2007 (figure 8). More discussion of medication errors is provided in the recent report from the Patient Safety Observatory: ***Safety in doses: medication safety incidents in the NHS***.[3]

Section:

2

Figure 8:

Reported incidents, by type, in general practice, April 2006 to March 2007

Total no. of incidents	Incident type	Apr–Jun 2006	Jul–Sep 2006	Oct–Dec 2006	Jan–Mar 2007
607	Medication	143	158	188	118
310	Consent, communication, confidentiality	98	95	74	43
296	Access, admission, transfer, discharge (including missing patient)	85	100	66	45
293	Documentation (including records, identification)	99	81	58	55
229	Clinical assessment (including diagnosis, scans, tests, assessments)	64	68	64	33
168	Treatment, procedure	55	49	42	22
140	Patient accident	40	37	38	35
111	Infrastructure (including staffing, facilities, environment)	43	32	21	15
87	Implementation of care and ongoing monitoring / review	23	25	17	22
54	Medical advice/ equipment	17	14	12	11
47	Other	11	7	7	22
29	Disruptive, aggressive behaviour	10	11	4	4
14	Self-harming behaviour	3	4	5	2
14	Infection control incident	5	4	3	2
11	Patient abuse (by staff / third party)	2	3	3	3
2,410	Total	698	688	592	432

*Please note that the dates are based on the date the reported incident occurred. This table is based on data as of 02 July 2007 and takes into account patient group incidents.

Section:

2

Impact of incidents on patients

The majority of incidents reported between April 2006 and March 2007 were indicated as resulting in no harm to patients (67.2 per cent) Figure 9.

The proportion resulting in severe harm or death is consistently just over one per cent over the four quarters. In total, over the year 6,558 incidents of which 2,929 were reported as resulting in death.

Although the proportion of incidents causing harm to patients overall has remained constant over the 12 months, the reported impact on patients shows variation by care setting.

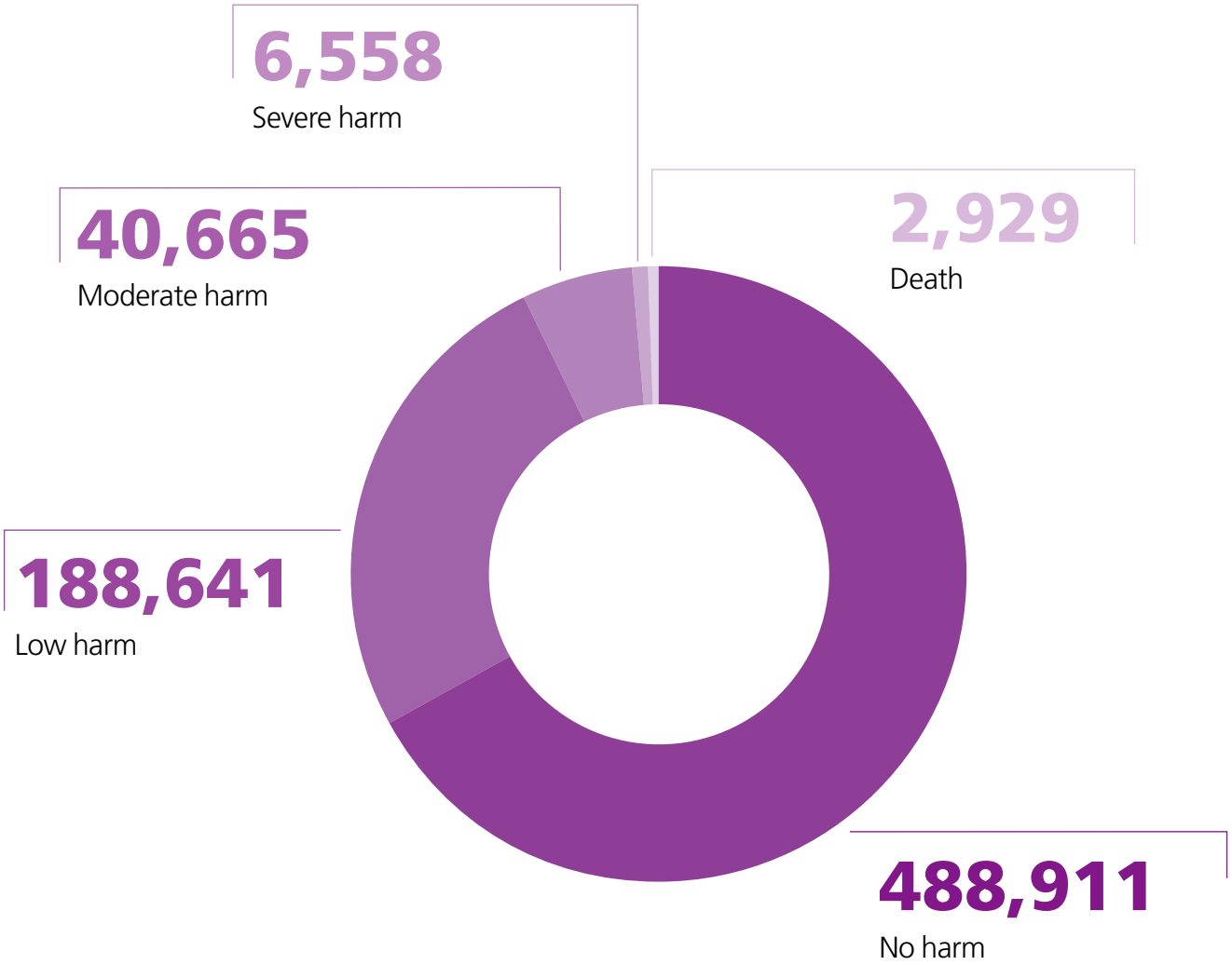
Between April 2006 and March 2007, the proportion of incidents reported as resulting in severe harm or death was highest in general practice and ambulance services. This perhaps reflects differences in reporting culture: fewer incidents are reported overall but incidents that result in severe harm or death are most likely to be reported.

Over the year, all settings (except mental health services) report fewer incidents resulting in death than incidents resulting in severe harm, as might be anticipated (figure 10). Incidents from mental health services reported as resulting in death are discussed in the second report from the Patient Safety Observatory.[2]

The fifth report from the Patient Safety Observatory, ***Safer care for the acutely ill patient: Learning from serious incidents*** reviewed all incidents reported as death in 2005 and identified possible patient incidents associated with death.[4]

Figure 9:

Reported degree of harm to patients, April 2006 to March 2007



727,704
Total no. of incidents

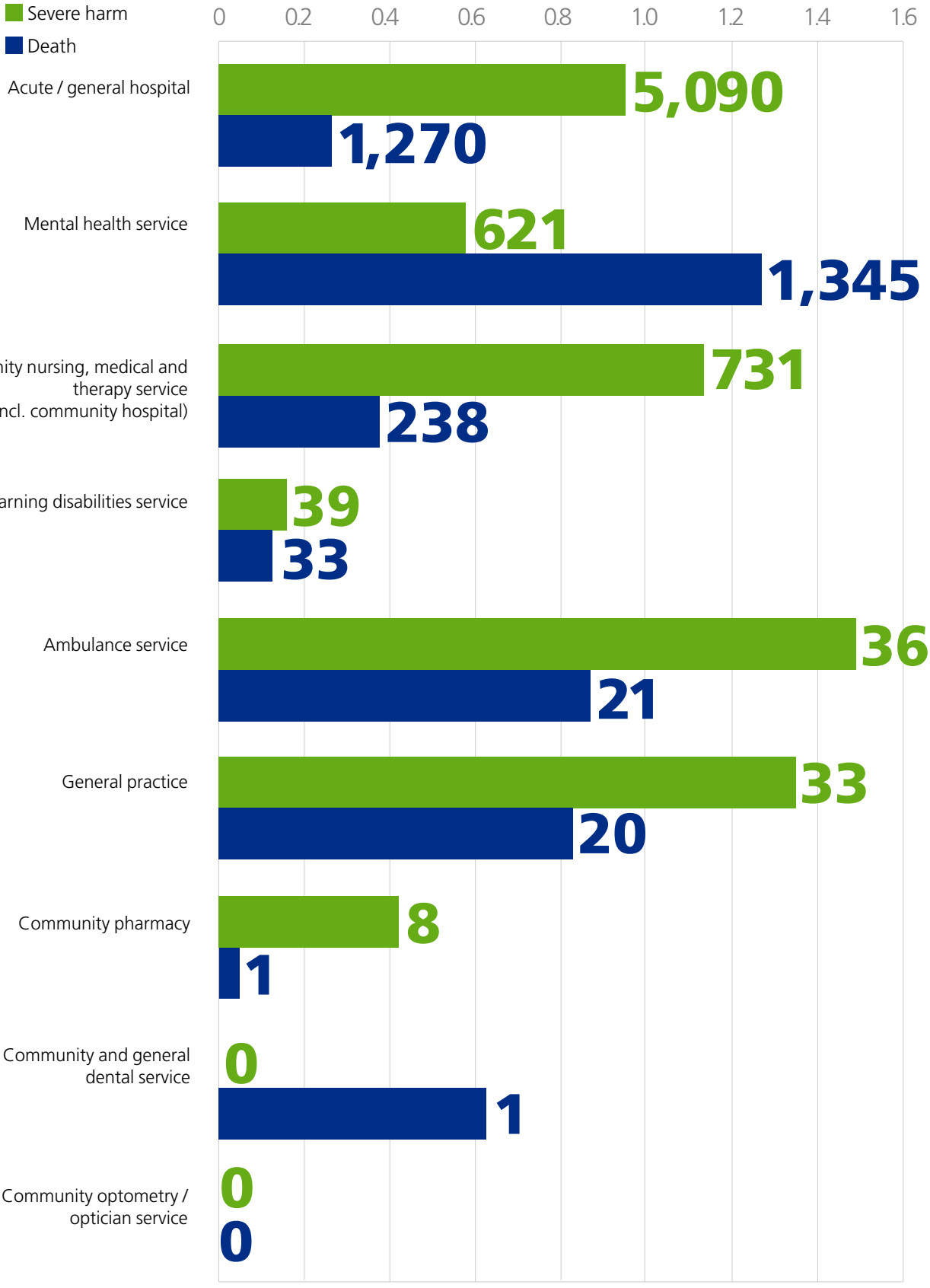
Section:

2

Figure 10:

Severity of incidents by care setting, April 2006 to March 2007

Figure 10: Percentage of all incidents in each care setting



NB: Only incident resulting in severe harm or death are included in the chart.

Appendix

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.[5,6]

The publication by the Department of Health of Safety First in March 2006 has provided the NPSA with a set of recommendations, one of which is to improve the current reporting systems and feedback 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, [8] adverse drug reactions,[9] healthcare associated infections [10] and suicide and homicide of people with mental illness.[11] 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.

International research suggests that there is significant under-reporting of incidents.

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.

Appendix

- 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 reported to the NRLS.
- The data is 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.

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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 5: 1 April to 30 June 2007.

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