PICA Net

National Report of the Paediatric Intensive Care Audit Network

January 2003 - December 2004

Tim Chater
Nicky Davey
Elizabeth Draper
Sam Jones
Patricia McKinney
Gareth Parry
Roger Parslow
Krishnan Thiru

(from the Universities of Leeds, Leicester & Sheffield)

PICANet
Acute & Critical Care Research Group
Health Services Research
School of Health & Related Research
University of Sheffield
Regent Court
30 Regent Street
Sheffield S1 4DA
United Kingdom

picanet@sheffield.ac.uk

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PICANet was established in collaboration with the Paediatric Intensive Care Society (PICS) and their active support continues to be a key component of our successful progress. The PICANet Steering Group (SG) has patient, academic, clinical, government and NHS members all of whom are thanked for their continuing assistance and advice. Members of our Clinical Advisory Group (CAG) are PICANet's formal interface with clinical care teams and their valuable support and contribution is gratefully acknowledged.

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The organisation and functioning of PICANet is dependent on administrative support from Gill Ryder (University of Sheffield) and IT programming and development from Martin Perkins (University of Leicester), both of whom we thank for their essential contributions. We are also grateful to Adam Wingfield (University of Leeds) for producing the map of England and Wales prevalence rates (section 10).

FOREWORD

The Paediatric Intensive Care Society welcomed the first PICANet report and is delighted to see the second. With the demise of the National Co-ordinating Committee for Paediatric Intensive Care the annual publication of PICANet's data becomes even more important as it is one of the few sources available to assess care of the nation's sickest children. The commitment required to maintain the PICANet dataset should not be underestimated. That commitment has extended from the inception of the national database, which drew together the experience of those who maintained databases of children admitted to their own units and has continued. The value of PICANet reports as a reliable source of information on critically ill children depends on reliable collection and processing of information, with regular checks and confirmation. The staff that collect and process the information day by day are to be congratulated for the quality and importance of the information they have gathered and presented so clearly. We believe the report will provide a rich vein of material for research and medical planning in the future years and the importance of the information will grow as the length of time over which it has been collected increases.

The information presented in the annual report is only a component of the information available in the PICANet dataset. More information or different analyses may be used by those interested in particular aspects of the care of critically ill children

NICE has been funded for 5 years now and is accepted as a worthwhile exercise. We believe that PICANet reports are of equal import and value. Children are the future of this country. In order to guarantee the best care for the sickest of these children, it is vital that PICANet should continue to collect this information about their care.

Dr Stephen Kerr *Chair, Paediatric Intensive Care Society*

Dr Robert Tasker *Chair, Paediatric Intensive Care Society Study Group*

EXECUTIVE SUMMARY

1 PICANet is an audit of paediatric intensive care (PIC) activity in England and Wales aiming to provide information on effective delivery of care to critically ill children and an evidence base for clinical governance. PICANet was established in 2002 and has progressed in close collaboration with members of the PIC clinical community.

2 The specific objectives of PICANet are to identify best practice, monitor supply and demand, monitor and review outcomes of treatment episodes, facilitate strategic health care planning, quantify resource requirements and study the epidemiology of critical illness in children.

3 Data are presented on admissions to PIC in England and Wales over the 2 year period 1st January 2003 to 31st December 2004 (7 units in the Pan-Thames region began data collection in March 2003). Information is available nationally and by trust. Data are anonymised but individual trusts are able to identify themselves.

4 For each intensive care episode the PICANet data set records details of admission, discharge, diagnoses (coded using Clinical Terms 3 (The Read Codes)), medical history, physiology, interventions and outcome. The Paediatric Index of Mortality (PIM), with recalibrated coefficients for improved sensitivity, was used as the mortalitiy risk adjustment tool. For each unit, bed activity and staffing levels are collected.

5 Demographic and clinical information is recorded using bespoke PICANet software or local databases and transmitted to a secure central PICANet server via NHSnet or emailing highly encrypted files. The PICANet software has proved to be very successful. Technical difficulties still prevent data transfer by NHSnet for around half of all units.

6 PICANet collects patient identifiable information as temporarily approved by the Patient Information Advisory group (PIAG) under section 60 of the Health and Social Care Act 2001 for England and Wales. The recommended key identifier for future audit and linkages within the NHS, the NHS number, was submitted for only 60% of admissions.

7 Rigorous data quality procedures ensure that the PICANet data set is of high quality. Data are validated locally and centrally and bi-annual visits to each unit are made. A key part of the process is the iterative feedback loop of information on data quality between PICANet and all units.

8 This report analyses details of 26,994 admissions for children aged 0 - 15 years and 530 admissions for young people aged 16 years and above. Children under 1 year comprise 47% of admissions and the traditional winter peak in PICU activity is accounted for by bronchiolitis in this age group.

9 The number of bed days delivered broadly reflects the age and sex distribution of children admitted to paediatric intensive care. Bed activity described in terms of the median daily number of beds occupied in each month, clearly indicates the pressure on bed availability in the winter season.

10 Paediatric intensive care services are available for planned and unplanned admissions but resource allocation can be difficult with 58% of admissions being unplanned.

11 Population based estimates of prevalence of admissions to PIC are available for the first time in England and Wales. Age and sex adjusted prevalence varies considerably by Strategic Health Authority (SHA) area and for the same area by year. Possible explanations for this are being investigated.

12 Three quarters of patient retrievals are undertaken by specialist PIC teams.

13 Seventy two percent of children admitted to PIC receive artificial ventilation and of those 95% are invasively ventilated.

14 Extremely few children die in PICUs, with 95% being discharged alive. For 2003 and 2004 combined no individual units showed any excess risk adjusted (PIM) mortality.

15 The Intensive Care National Audit and Research Centre (ICNARC) receive data from 74% of all adult intensive care units in England. In collaboration with ICNARC, we report that in 2003, 633 children under 16 years were treated in adult intensive care units (AICUs), mainly for neurological and respiratory conditions. Over a third of these children were discharged to PICUs.

16 The most recent staffing survey (October 2004) collected data from every unit on nurses and virtually every unit on medical staff; an improved response compared to previous surveys. The majority of nurses employed in PICUs are grade D or E. PICS guidelines on staffing recommend 6.4 whole time equivalent (WTE) qualified nurses per intensive care bed; the majority of units do not meet this recommended level of nurse staffing.

17 The feasibility of obtaining signed consent for receiving patient identifiable information has been analysed in a study published in the British Medical Journal.[1] It shows that the process of gaining consent is difficult and time consuming, and success varies widely across units. The process is unlikely to be successful unless extra resources are allocated to training, staff time and administrative support.

18 Eleven recommendations arising from this report are outlined in section 15.

References

1 BMJ, doi:10.1136/bmj.38404.650208.AE (published 18 March 2005).

1 AIMS

PICANet was established in 2002 to develop and maintain a secure and confidential high quality clinical database of PIC activity in England and Wales with the following objectives:

- Identify best practice
- Monitor supply and demand
- Monitor and review outcomes of treatment episodes
- Facilitate strategic health care planning and quantify resource requirements
- Study the epidemiology of critical illness in children.

The aim was to set up a systematically collected and validated core data set of demographic and clinical data on all admissions to PICUs, allowing comparison of PICU activity at a local level with national benchmarks. This data set provides an important evidence base on outcomes, processes and structures that permits planning for future practice, research and interventions.

Over the next 12 months, PICANet will build on the progress made so far, and provide a database on PIC activity for the whole of the United Kingdom, rather than just England and Wales. Progress has already been made in this area with the inclusion of Edinburgh's Royal Hospital for Sick Children in December 2004.

In addition, PICANet is keen to provide information on all children receiving intensive care (in any setting) and has gone some way to meeting this target by establishing links with ICNARC, the All Wales Audit of Critically Ill Children (AWACIC) and the South West Audit of Critically Ill Children (SWACIC).

2 BACKGROUND

The aim of PIC is to prevent mortality in children with reversible critical illness whilst preserving or improving functional outcome.[1] PIC activity has increased greatly over the past few decades, but this growth has been accompanied with little objective evaluation of the service, and decisions have been made on a restricted evidence base. The ethical difficulties of conducting randomised controlled trials of PIC, the heterogeneity of patient groups and the heterogeneity of hospitals providing PIC have been cited as possible reasons for this.[1, 2]

Both PICS and the British Paediatric Association voiced concerns regarding the *ad hoc* development of PIC in the United Kingdom as early as the 1980s. In 1993 a multidisciplinary working party on PIC highlighted the fragmented organisation of PIC provision.[3] In 1996 the Department of Health set up a national coordinating group, who published a report confirming these findings.[4]

The importance of clinical audit is widely acknowledged. The National Service Framework for Children clearly identifies that national audit programs give the public powerful comparative information on performance in complex areas such as PIC.[5] Units providing PIC are expected to collect information on case mix (including illness severity, method, type and source of admission, median length of stay, interventions, and outcome). The risk adjustment tool used should allow inter-unit and regional comparisons.[4, 6]

In 2000 the Department of Health tendered for a national PIC database enabling core information to be collected in a standardised way. The tender was awarded to the Universities of Leeds, Leicester and Sheffield (all of whom have experience of prospective observational work in paediatrics) and PICANet was established.

PICANet is monitored by an independent Steering Group (SG) and is formally involved with the clinical community through support and advice received from the Clinical Advisory Group (CAG). SG and CAG members are listed in Appendices A and B, whilst a full list of participating units can be found in Appendix C.

References

1 Gemke RJBJ. Outcome assessment of paediatric intensive care: principles and applications, Thesis, University of Utrecht, 1994.

2 Pearson G. Handbook of paediatric intensive care, WB Saunders 2002.

3 Radcliffe J. Provision of intensive care for children. BMJ 1998;316:1547–8.

4 NHS Executive. Paediatric Intensive Care “A Framework for the Future” Report from the National Co-ordinating Group on Paediatric Intensive Care to the Chief Executive of the NHS Executive. London, NHSE, 1997.

5 Department of Health. Getting the right start: National Service Framework for Children, Standards for hospital services. London, DOH, April 2003.

6 Paediatric Intensive Care Society Standards Document 2001.

3 THE PICANet DATA SET

3.1 Development and description of the current data set

The PICANet data set was established in consultation with members of the PICANet CAG, representing the PIC community, and the Department of Health. The overriding criteria for inclusion of specific variables were that they provided key information on activity, case mix, demographics and outcome at a national and local level, they were feasible to collect and their inclusion supported by the wider PIC community.

The current PICANet data set consists of 89 variables (including 5 address elements and the option for a second family name). These variables and their definitions are given in the PICANet Data Definitions Manual obtainable from www.picanet.org.uk.

3.2 Data collection and validation

PICANet have developed a paper data collection form and bespoke data entry software to enable a consistent national data set to be assembled (the data collection form is included in Appendix D). Those units who use their own (or commercial) data collection software have been provided with an export file specification to enable data to be imported by the PICANet data entry software. Training sessions were organised over 2 days to familiarise clinical and data entry staff with data definitions, data collection issues and software.

The PICANet software carries out internal logical consistency and range checks as data are entered and provides an on-screen summary of outstanding validation checks on the completion of a record. Units importing data from their own databases are provided with an import log detailing what records have been imported and any outstanding validation issues. Central validation and data quality issues are dealt with in detail in section 4.

Data collection has been ongoing in all PICUs in England and Wales since November 2002 with the exception of 9 units comprising the Pan-Thames consortium who started in March 2003.

3.3 Clinical coding

Diagnostic information is coded using Clinical Terms 3 (The Read Codes) referred to as CT3. CT3 encompasses a huge range of diagnostic, procedural and context-dependent clinical codes designed to reflect all aspects of clinical care in the population in general. Initially, the PICANet software contained a ‘pick-list’ of diagnoses that were

judged by a group of PIC consultants to cover the majority of PIC admissions. Additional diagnoses could be added to this pick-list using the NHS Clinical Terms Browser, a copy of which was distributed to each unit. These codes were then available to individual units. The release of a revised version of the software included an updated and expanded pick-list but even this has proved insufficient, prompting the need for a change to the clinical coding method (see section 3.6, data set development).

3.4 Confidentiality

PICANet collects patient identifiable information including names, addresses, date of birth and NHS number. With this information PICANet can identify multiple admissions for the same individual making the data set person *and* episode-based. In the future, personally identifiable information can be linked with death registration details held by the Office for National Statistics to assess long-term mortality in children admitted to PIC. In addition, national census and other geographical data can be linked with individual children using validated postcodes enabling PICANet to assess the association between social class, population density and other geo-demographic and environmental information and PIC admissions.

To comply with the provisions of the Data Protection Act[1], PICANet has implemented stringent confidentiality and data protection arrangements. The Patient Information Advisory Group (PIAG) (http://www.advisorybodies.doh.gov.uk/piag/index.htm) has granted PICANet exemption from gaining signed parental consent under Section 60 of the Health and Social Care Act 2001. This class support enables PICANet to collect and process patient identifiable information for the purpose of auditing, monitoring and analysing patient treatments to ensure that adequate and appropriate PIC services are available for all children admitted for PIC in England and Wales. Exemption was given under specified conditions in December 2002 and was renewed in December 2003. In the long term, PICANet will work towards pseudoanonymisation of the PICANet data set. The feasibility of obtaining informed parental consent is addressed in a study carried out by PICANet in 2004 and is described in section 13.

Posters providing information about PICANet are displayed on participating units and information leaflets for parents / guardians and patients are available (see Appendix E for a copy of the information leaflet).

3.5 Data transmission

The PICANet data entry software includes the facility to transmit data electronically via NHSnet if local IT infrastructure can be configured appropriately. The data is first encrypted using public key encryption and then placed on the server in a folder specific to each unit. Periodically, uploaded data is moved to a secure holding area, decrypted and uploaded onto the central server database. Fifteen units currently transmit their data via NHSnet.

Where local IT departments have been unable or unwilling to configure their systems and firewalls to allow electronic transfer via NHSnet, the data is encrypted and placed in a local folder and then sent as an email attachment.

3.6 Data set development

A review of the data items collected and the PICANet software has been completed and minor data set changes are due to be implemented in 2005. These changes will facilitate the collection of the Paediatric Index of Mortality 2 (PIM 2)[2] as the preferred mortality risk adjustment tool. This has been agreed by the CAG and SG following the outcome of the United Kingdom Paediatric Intensive Care Outcome Study (UK PICOS) comparison of mortality risk adjustment models. In addition, a new version of the PICANet data entry software has been developed including a number of functional improvements, especially the integration of the entire CT3 code set into the software. This will improve the quality of clinical coding and make data entry easier and faster. The underlying coding system will be migrated to SNOMED Clinical Terms when feasible.

References

1 Data Protection Act 1998. www.hmso.gov.uk/acts/acts1998/19980029.htm (accessed15 Mar 2005).

2 Shann F, Slater A, Pearson G. PIM 2: a revised version of the Paediatric index of mortality. Intensive Care Med 2003; 29:278-285.

4 DATA QUALITY

That poor information is a risk to health care services and governance in the NHS is widely acknowledged.[1, 2] Good quality information underpins decision making at every level in the NHS and access to high quality data, the precursor to information, is vital to clinical audit and governance processes. It is acknowledged by the Department of Health that such data should be produced as part of the routine daily activity within a hospital.[1]

Data quality implies that data has the following attributes: relevance, accuracy, timeliness, accessibility, comparability, and coherence.[3] Whilst considerable attention has been focussed on readily measurable aspects of data quality (such as the validity and completeness of data items), harder to measure aspects (such as accuracy), have often been neglected.[1, 4] PICANet aims to assess all areas of data quality and provide units with the means to collect high quality data.

4.1 Assessing and maintaining data quality

PICANet has two principal methods of maintaining data quality:

1 Validation checks on computerised data

a) Local checks

All data are validated in the PICANet software at the point of data entry (in cases where data is extracted from in-house databases, the import facility in the PICANet software produces a validation log). Missing, inconsistent, and out of range data are identified during the data entry process, and a clear data quality summary is provided for each patient record. These checks ensure that the data is as clean as possible at a local level, helping to reduce the number of queries relayed back to units once they have submitted their data centrally.

b) Central checks

Number of admissions: A report showing the number of admissions received centrally from each unit is distributed at monthly intervals to all units (see Appendix F). This allows them to cross check the numbers held centrally with the number of admissions recorded locally.

Validation of the data: Unit level data are validated again centrally after uploading to the central server. Missing, out of range, inconsistent or invalid values are identified

and data validation reports (see Appendix G) are sent to units each month. This process ensures that units are constantly reviewing data quality and resubmitting corrected data items.

Error rates: A report (see Appendix H) which identifies error rates (by unit) is distributed monthly. It provides an index of data quality, and shows units exactly where errors occur in their data (e.g. invalid / missing clinical codes). The number of queries per unit is totalled and an error rate calculated per patient. In addition, the report identifies the most recent data submission date. The error report is based on all admissions and time periods.

Review of the data set: The entire data set is regularly centrally reviewed for completeness and accuracy (see section 4.2 for further details).

2 PICU visits to assess data accuracy

Visits are made to every unit at least twice a year. The face to face contact with unit staff encourages attention to data quality. The process involves the following:

a) Ten sets of notes from consecutive admissions are selected for re-extraction. Notes are identified by PICANet and requested 3 – 4 weeks in advance of the visit, with admission dates at least 2 months prior to the visit.

b) The case notes obtained are checked against the unit admission book to ensure they are from the requested time period and are consecutive.

c) The unit admission book is also used to cross check the number of admissions received by PICANet centrally with the number of admissions recorded locally.

d) The full set of patient case notes are requested (including PICU charts and retrieval documentation) to ensure that the physiological values from first PICU medical contact are taken.

e) A member of the PICANet team re-extracts the information from the patient's case notes onto PICANet data collection forms. In the first year of site visits the re-extraction process involved a full data set extraction for each set of notes. In the second year, primary diagnosis, date and time of admission / discharge, care area admitted from, PIM / PIM 2 information and intervention information were the variables re-extracted. The number of variables was reduced due to time restrictions and because differences were very rarely found with certain variables.

f) The re-extracted data is compared to the original extraction performed by the unit; any differences found are entered onto a separate database.

g) The data from the original data collection form (completed by the unit) is checked against the local database; any differences are again recorded.

h) Reports are generated for each hospital summarising the number and types of differences found in the areas of data extraction and data entry and in admission book cross checks.

Overall, 495 sets of notes were reviewed from all participating units in 2003 - 2004.

Table 4.1.1 Number of case notes reviewed

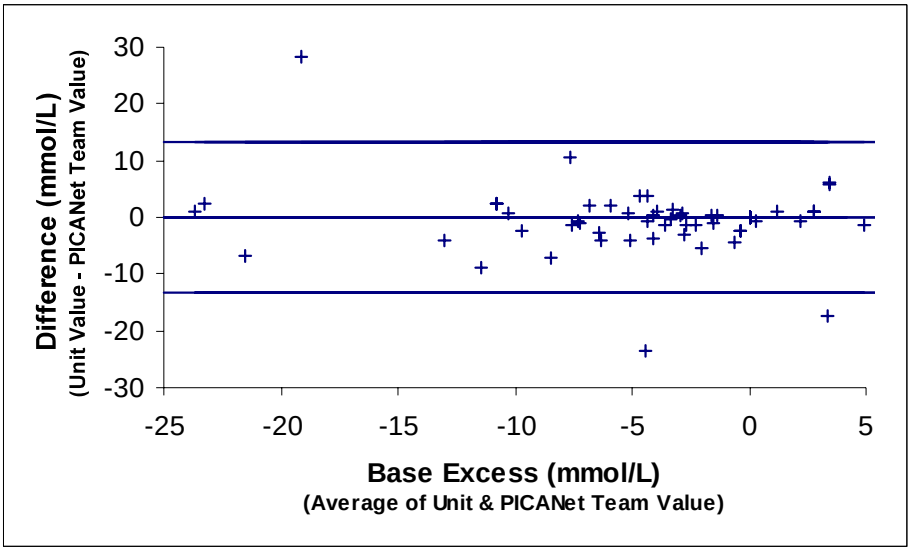
Visit	Number of units	Number of case notes
First visit	28	205
Second visit	26	192
Third visit	13	98
Total	**67**	**495**

A summary of differences is shown in Appendix I. Error rates above 10% are in bold, showing that the most notable sources of error were for admission and discharge times (hours:minutes), primary reason for admission, physiology variables associated with PIM and the number of days of ventilation. These discrepancies were raised at the time of the visit and confirmed in written reports sent out to the unit shortly after the visit. Very few errors were noted in the data entry procedure.

Bland-Altman plots have been used to compare how well data entered by units agree with data extracted by PICANet. These plots were developed as a statistical method of comparing 2 measurements techniques and plot the difference against the mean for the 2 measurement techniques, in this case different data extraction personnel.[5] This mean difference gives an overall estimate of bias. Any systematic pattern to the data points with reference to the line of agreement (0) indicates the direction and nature of the bias. Limits of agreement were calculated as the mean difference plus or minus 2 standard deviations and are plotted as the upper and lower lines on the graphs. Values that fall outside these limits are extreme and would only be expected in 5% of cases if the data from units and PICANet agreed.

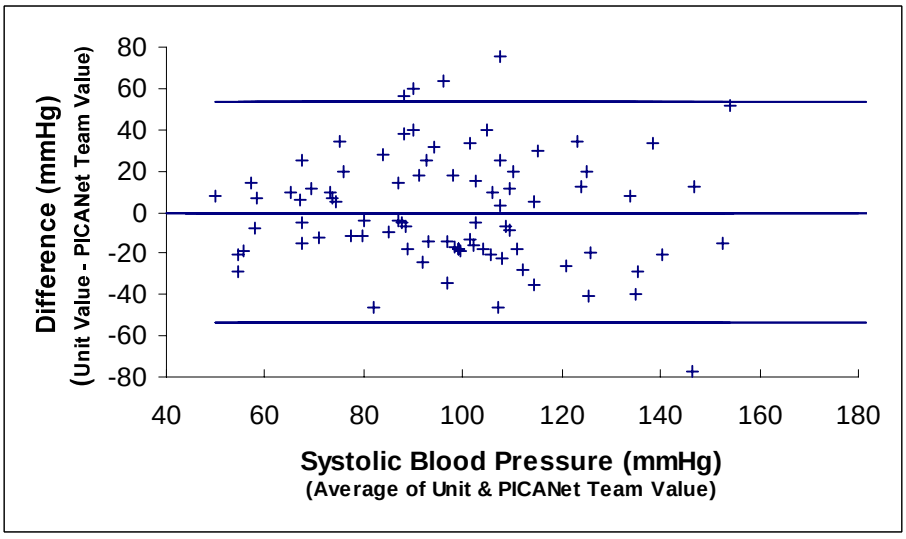
Two examples (base excess and systolic blood pressure) have been plotted.

Figure 4.1.1 Unit recorded values compared to PICANet recorded values for base excess



Out of the 495 case notes reviewed, there were 123 (25%) where base excess values differed or were recorded as 'not known' or 'missing' when a valid value was found. These differences were seen across all units but low numbers prevented a valid inter-unit comparison. The scatter of points does appear random indicating that there is no systematic bias. Clinically, however, a difference of 5 mmol/l between a true and recorded base excess is substantial.

Figure 4.1.2 Unit recorded values compared to PICANet recorded values for systolic blood pressure



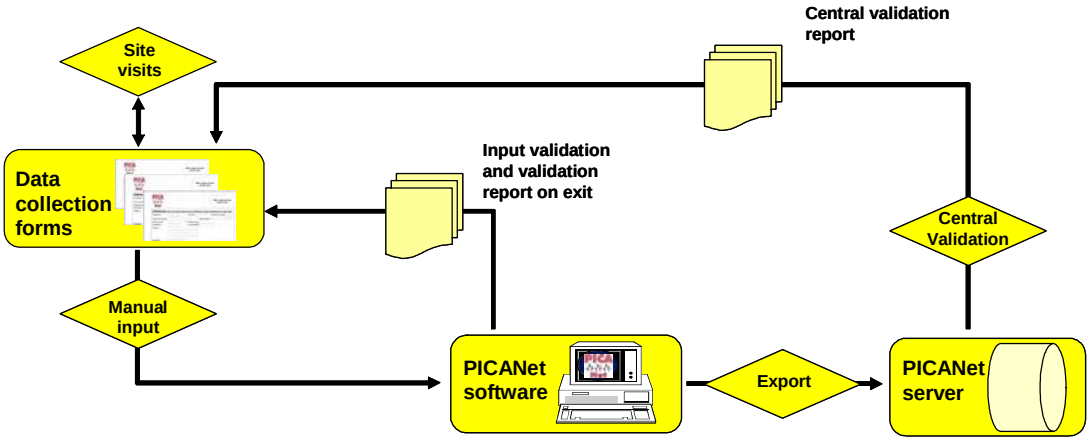
For systolic blood pressure, there were 133 (27%) case notes where values differed or were recorded as 'not known' or 'missing' when a valid value was found. Again, these differences were seen across all units. The scatter of points does appear random

indicating that there is no systematic bias. As with base excess, differences of between 20 and 40 mmHg between a true and recorded systolic blood pressure are substantial and clinically relevant.

In summary:

- Data quality is assessed locally and centrally by running systematic checks on computerised data.
- Data accuracy is assessed by means of unit visits.
- The iterative feedback loop which exists with all units ensures data accuracy and completeness of the data set.

Figure 4.1.3 Summary of data quality processes

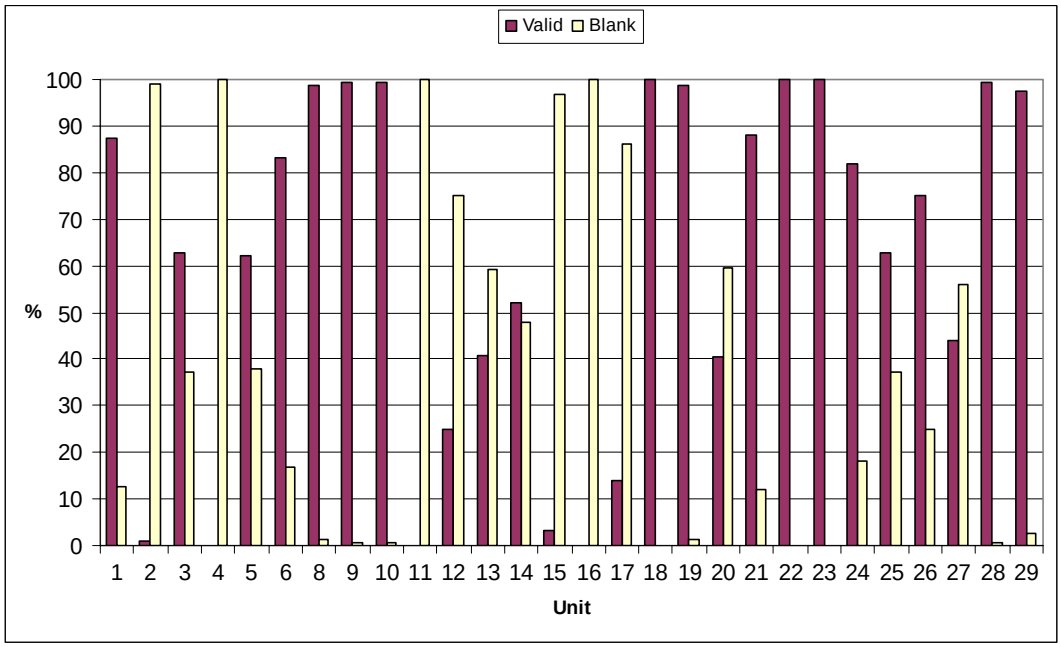


4.2 Completeness of variables

Of 89 fields in the PICANet data set, 65 undergo completeness checks (the remaining 24 fields are optional, e.g. second family name, presence of co-morbidity). These fields are listed in Appendix J. Fields are classed as either ‘complete’ or ‘incomplete’. Complete fields are broken down into valid values (data in the correct format) or exception values (values of 9, 99, 999 or 9999 can be used to indicate that data was not known or was not recorded). Incomplete fields are broken down into invalid values (such as incorrect clinical codes) or blank values (where data that is expected has not been recorded). Overall, most fields were complete, with 59 out of the 65 (91%) being more than 95% complete. Fields which were less than 95% complete are highlighted. Fields with the highest percentage of exception values include base excess, follow-up status (30 days post discharge), gestational age, PaO_2 and FiO_2. The field most often

blank was NHS number, which was missing in 40% of admissions. However, there was extreme variation for individual units as seen in figure 4.2.1. NHS number is a vital identifier for individuals and will be key to future linkages. For PICANet, it has not been universally recorded nor easily available. In 2002, the Audit Commission stated that most trusts could improve their recording of patients' NHS number, quoting an average figure of approximately 85% for patient records in England with valid NHS numbers (source: NHS-Wide Clearing Service data quality reporting tool).[4]

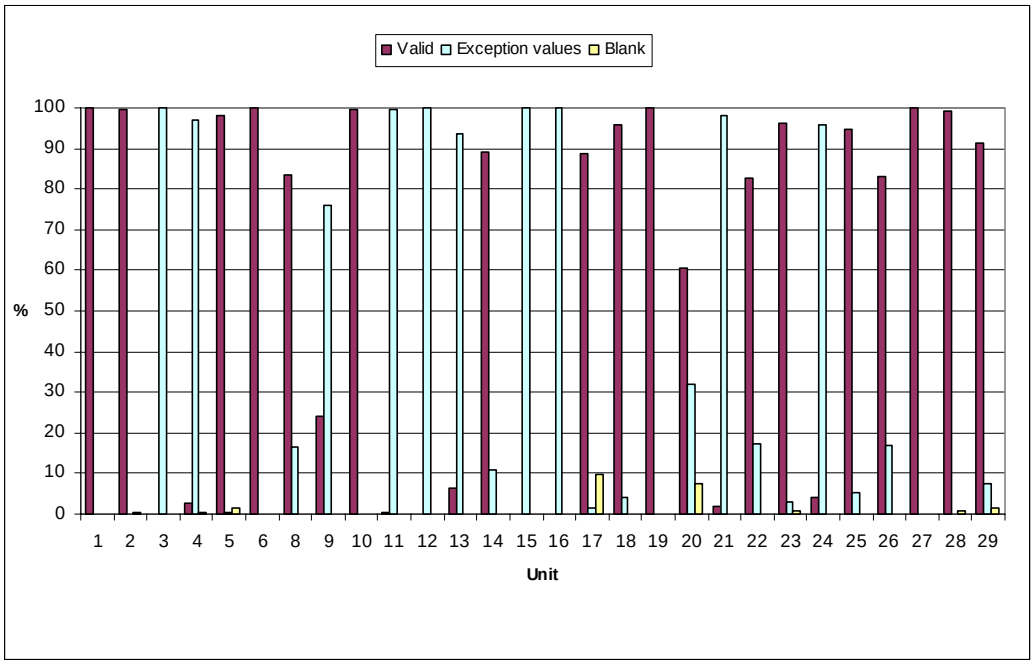
Figure 4.2.1 Completion of NHS number by unit



Completion of NHS number in PICANet varied by unit, as shown in figure 4.2.1.

PICANet collected information on follow up status and location (30 days post PICU discharge). As figure 4.2.2 shows, follow up status is currently poorly recorded by a number of units and this will necessitate long-term follow-up of mortality to be pursued via death registration.

Figure 4.2.2 Completion of follow-up status (30 days post PICU discharge) by unit



Examination of overall completeness of all variables by month showed no seasonal differences in data quality (table 4.2.1).

Table 4.2.1 Overall variable completion rates by month

Year	Month	Value								Eligible
		Valid		Invalid		Exceptions		Blank		
		n	%	n	%	n	%	n	%	n
2003	1	45025	(93.0)	15	(0.0)	2716	(5.6)	636	(1.3)	**48392**
	2	41560	(93.5)	2	(0.0)	2287	(5.1)	589	(1.3)	**44438**
	3	59048	(91.6)	5	(0.0)	3044	(4.7)	2382	(3.7)	**64479**
	4	54603	(91.5)	17	(0.0)	2792	(4.7)	2286	(3.8)	**59698**
	5	56933	(91.9)	9	(0.0)	2973	(4.8)	2026	(3.3)	**61941**
	6	57409	(93.2)	6	(0.0)	2778	(4.5)	1402	(2.3)	**61595**
	7	55842	(93.4)	11	(0.0)	2834	(4.7)	1126	(1.9)	**59813**
	8	51647	(93.3)	10	(0.0)	2726	(4.9)	953	(1.7)	**55336**
	9	53729	(93.4)	8	(0.0)	2838	(4.9)	935	(1.6)	**57510**
	10	58861	(93.6)	3	(0.0)	3124	(5.0)	918	(1.5)	**62906**
	11	59676	(93.2)	12	(0.0)	3264	(5.1)	1082	(1.7)	**64034**
	12	64333	(93.4)	14	(0.0)	3320	(4.8)	1221	(1.8)	**68888**
2003 Total		**658666**	**(92.9)**	**112**	**(0.0)**	**34696**	**(4.9)**	**15556**	**(2.2)**	**709030**
2004	1	63827	(93.5)	2	(0.0)	3245	(4.8)	1189	(1.7)	**68263**
	2	59897	(93.7)	7	(0.0)	2966	(4.6)	1043	(1.6)	**63913**
	3	63008	(93.1)	12	(0.0)	3528	(5.2)	1104	(1.6)	**67652**
	4	56796	(93.3)	3	(0.0)	2949	(4.8)	1114	(1.8)	**60862**
	5	55795	(93.2)	12	(0.0)	2908	(4.9)	1120	(1.9)	**59835**
	6	57217	(93.6)	7	(0.0)	2909	(4.8)	968	(1.6)	**61101**
	7	53829	(93.3)	4	(0.0)	2883	(5.0)	992	(1.7)	**57708**
	8	53493	(93.1)	6	(0.0)	2976	(5.2)	959	(1.7)	**57434**
	9	54737	(93.4)	9	(0.0)	2844	(4.9)	1006	(1.7)	**58596**
	10	55456	(92.9)	6	(0.0)	2989	(5.0)	1220	(2.0)	**59671**
	11	59361	(93.0)	18	(0.0)	3109	(4.9)	1318	(2.1)	**63806**
	12	59027	(92.3)	15	(0.0)	3003	(4.7)	1884	(2.9)	**63929**
2004 Total		**692443**	**(93.2)**	**101**	**(0.0)**	**36309**	**(4.9)**	**13917**	**(1.9)**	**742770**
Grand Total		**1351109**	**(93.1)**	**213**	**(0.0)**	**71005**	**(4.9)**	**29473**	**(2.0)**	**1451800**

Table 4.2.1 shows the number and percentage of valid, invalid, exception and blank values by month for the years 2003 and 2004. Percentages remain relatively constant, from both year to year and month to month.

To provide an indication of how well PICANet compares against similar data sets in the area of data quality, the Central Cardiac Audit Database (CCAD) Annual Report was examined (it has a data quality section in its 2001 – 2002 Annual Report).[6] Those variables which are common to both CCAD and PICANet are shown in table 4.2.2. Striking similarities can be seen with most variables (with the exception of NHS number).

Table 4.2.2 Comparison of variables common to PICANet and CCAD

Variable	% complete	
	PICANet	CCAD
NHS number	59.7	78.0
Sex	99.8	99.4
Date of birth	100.0	100.0
Postcode	95.8	95.2
Diagnosis	98.3	99.6
Date of discharge	*100.0	96.1
Status at discharge	*99.1	99.5

*From PICU

4.3 Directory of Clinical Databases (DoCDat)

PICANet are registered with the Directory of Clinical Databases, (DoCDat) (www.lshtm.ac.uk/DoCDat)[7], a source of independent information concerning the uses and limitations of clinical databases in the United Kingdom. To be included, studies must meet the following DoCDat criteria:

- There must be a common circumstance: PICANet collects data on all children admitted to a PICU.
- The database should provide individual-level data: Identifiable details (name, address and date of birth) are sent to PICANet under section 60 of the Health and Social Care Act 2001.
- The database should include data from more than one provider of health care: PICANet collate data from 29 PICUs.

Independent, trained interviewers at DoCDat assess the quality of each database using a structured questionnaire developed by clinicians, epidemiologists, statisticians and information specialists. The assessment covers:

- General aspects of the database (when it was set up, whom it includes, and what geographical area it covers).
- Data set information (how many individuals are included, data linkage, data security, patient confidentiality, and a copy of the data collection questionnaire).
- Outputs including who can analyse the data, how frequently standard audit reports are produced, and a bibliography of published work.
- Management of the database (who is involved in running it and who funds it).
- Quality of the data (data coverage, data validity and data accuracy).
- Contact details for further information.

Table 4.3.1 summarises the performance of PICANet under this assessment (see http://www.lshtm.ac.uk/DoCDat).[7]

Table 4.3.1 DoCDat assessment of PICANet

Criteria	Comment
Extent to which the eligible population is representative of the country	Total population of country included.
Completeness of recruitment of eligible population	Most (90-97%)
Variables included in the database	Identifier, admin. information, condition, intervention, short term outcome , major known confounders, long term outcome.
Completeness of data (% variables at least 95% complete)	Most (90-97%)
Form in which continuous data (excluding dates) are collected (% collected as raw data)	All or almost all (>97%)
Use of explicit definitions for variables	All or almost all (>97%)
Use of explicit rules for deciding how variables are recorded	All or almost all (>97%)
Reliability of coding of conditions and interventions	Not tested.
Independence of observations to primary outcome	Independent observer blinded to the intervention or not necessary as objective outcome (e.g. death or a lab test).
Extent to which data are validated	Range and consistency checks plus external validation using alternative source.

References

1 Information Policy Unit (Consultation draft, 2004): A strategy for NHS information quality assurance (Department of Health).

2 Department of Health (2002): Learning from Bristol: The Department of Health's response to the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984 – 1995.

3 Office for National Statistics (2004): Guidelines for measuring statistical quality.

4 Audit Commission (Management paper, 2002): Data remember: improving the quality of patient-based information in the NHS.

5 Bland JM, Altman DG (1986) Statistical method for assessing agreement between two methods of clinical measurement. The Lancet, i, 307-310.

6 The Central Cardiac Audit Database Paediatric Annual Report 2001 – 2002, http://www.ccad.org.uk (accessed 15 March 2005).

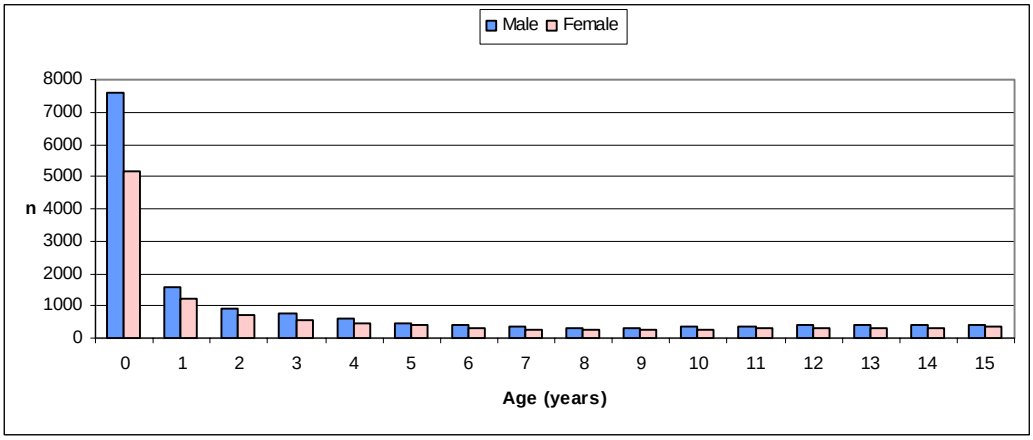
7 Directory of Clinical Databases (DoCDat), http://www.lshtm.ac.uk/DoCDat (accessed 15 March 2005).

5 ADMISSION DATA

This section presents data relating to 26,994 admissions for the complete reporting period, January 2003 - December 2004 (7 Pan-Thames units began in March 2003). Data from the years 2003 and 2004 are combined in all charts as no differences between years were observed. Information by NHS trust is shown in Appendix K.1. All data are based on admissions aged 0 - 15 years (inclusive) unless specified otherwise. Generally, in the tables the proportions are row percentages, except in the total column, where they are column percentages.

5.1 Admissions by age

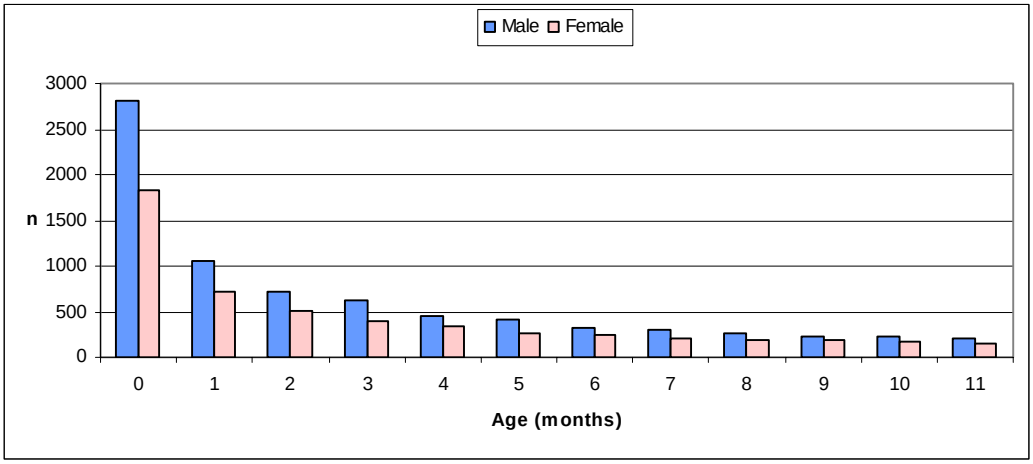
Figure 5.1.1 Admissions by age and sex



Note: Ambiguous (n= 12); Unknown: (n=19)

The largest proportion (47%) of children admitted were less than 1 year of age. From the age of 5 years onwards, numbers of admissions were relatively constant. Throughout the whole age range, more males were admitted than females.

Figure 5.1.2 Admissions by age (age less than 1 year) and sex

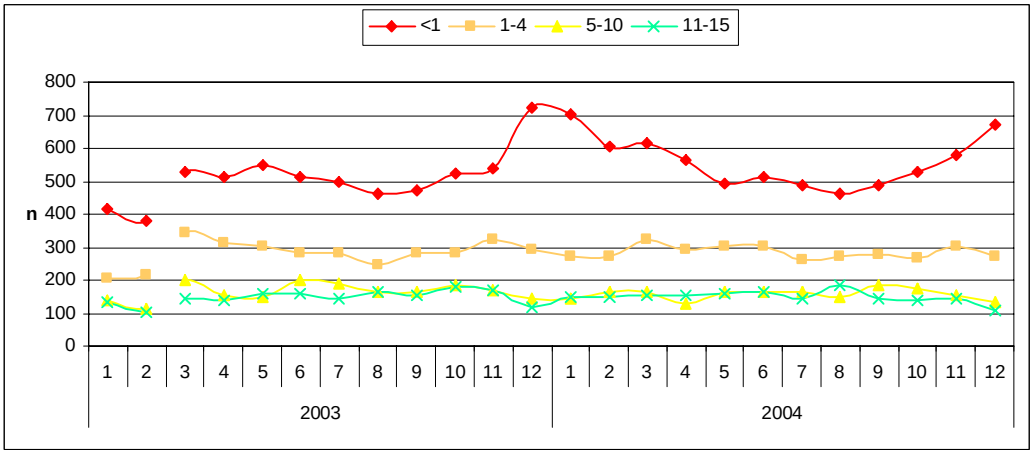


Note: Ambiguous (n=8); Unknown (n=11)

Thirty-two percent of babies admitted under 1 year of age were less than 1 month old. A predominance of male admissions over female admissions was consistent throughout.

5.2 Admissions by month

Figure 5.2.1 Admissions by month and age



Note: The broken line between months 2 and 3 in 2003 identifies that 7 PICUs in the Pan-Thames region began data collection in March 2003.

The number of admissions aged over 1 year was relatively constant by month in 2003 and 2004. For children aged under 1 year an increase in admissions during the winter months (December - February) was observed.

Table 5.2.1 Admissions by month and primary diagnostic group

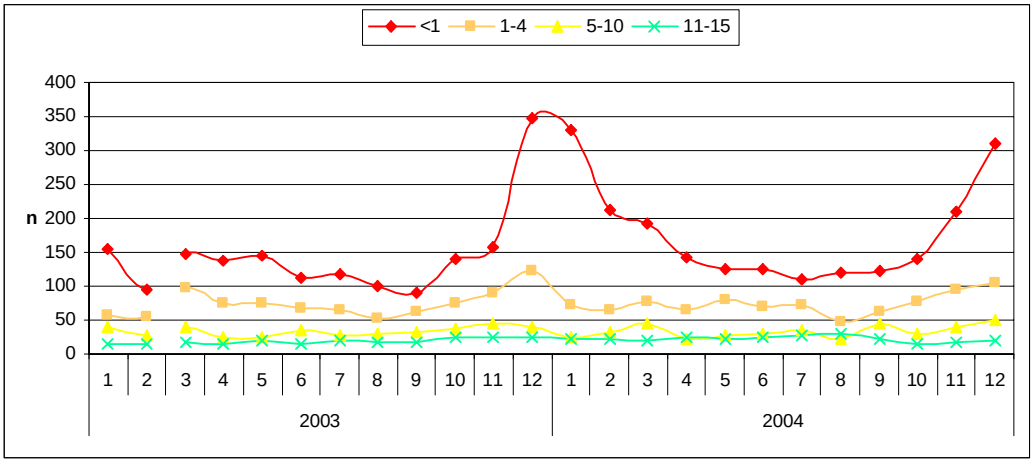
	Diagnostic group																														Total	
	Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003 Jan	5	(1)	21	(2)	248	(28)	13	(1)	59	(7)	52	(6)	2	(0)	31	(3)	106	(12)	27	(3)	268	(30)	23	(3)	29	(3)	4	(0)	**888**	**(6.7)**
Feb	3	(0)	20	(2)	278	(34)	16	(2)	59	(7)	47	(6)	1	(0)	19	(2)	101	(12)	17	(2)	195	(24)	26	(3)	25	(3)	2	(0)	**809**	**(6.1)**
Mar	6	(0)	16	(1)	389	(32)	27	(2)	88	(7)	59	(5)	8	(1)	36	(3)	131	(11)	41	(3)	301	(25)	50	(4)	54	(4)	11	(1)	**1217**	**(9.2)**
Apr	7	(1)	19	(2)	330	(30)	32	(3)	70	(6)	50	(4)	2	(0)	33	(3)	166	(15)	33	(3)	249	(22)	45	(4)	73	(7)	8	(1)	**1117**	**(8.5)**
May	15	(1)	16	(1)	384	(33)	15	(1)	81	(7)	44	(4)	1	(0)	47	(4)	123	(11)	35	(3)	265	(23)	48	(4)	72	(6)	13	(1)	**1159**	**(8.8)**
Jun	3	(0)	26	(2)	410	(36)	16	(1)	81	(7)	46	(4)	6	(1)	38	(3)	127	(11)	43	(4)	232	(20)	58	(5)	60	(5)	6	(1)	**1152**	**(8.7)**
Jul	7	(1)	39	(4)	359	(32)	14	(1)	89	(8)	35	(3)	2	(0)	47	(4)	122	(11)	47	(4)	230	(21)	52	(5)	58	(5)	12	(1)	**1113**	**(8.4)**
Aug	5	(0)	22	(2)	372	(36)	22	(2)	71	(7)	28	(3)	5	(0)	36	(3)	95	(9)	51	(5)	202	(20)	50	(5)	68	(7)	6	(1)	**1033**	**(7.8)**
Sep	8	(1)	28	(3)	397	(37)	27	(3)	65	(6)	48	(4)	4	(0)	27	(3)	100	(9)	37	(3)	201	(19)	59	(6)	68	(6)	3	(0)	**1072**	**(8.1)**
Oct	9	(1)	29	(2)	375	(32)	31	(3)	80	(7)	53	(5)	5	(0)	42	(4)	137	(12)	33	(3)	276	(24)	43	(4)	57	(5)	0	(0)	**1170**	**(8.9)**
Nov	2	(0)	16	(1)	367	(31)	26	(2)	67	(6)	57	(5)	1	(0)	47	(4)	175	(15)	36	(3)	321	(27)	32	(3)	45	(4)	3	(0)	**1195**	**(9.1)**
Dec	8	(1)	25	(2)	300	(24)	16	(1)	56	(4)	75	(6)	2	(0)	26	(2)	141	(11)	22	(2)	535	(42)	21	(2)	42	(3)	6	(0)	**1275**	**(9.7)**
2003 Total	**78**	**(0.6)**	**277**	**(2.1)**	**4209**	**(31.9)**	**255**	**(1.9)**	**866**	**(6.6)**	**594**	**(4.5)**	**39**	**(0.3)**	**429**	**(3.3)**	**1524**	**(11.5)**	**422**	**(3.2)**	**3275**	**(24.8)**	**507**	**(3.8)**	**651**	**(4.9)**	**74**	**(0.6)**	13200	
2004 Jan	8	(1)	25	(2)	331	(26)	22	(2)	73	(6)	67	(5)	0	(0)	45	(4)	121	(10)	43	(3)	453	(36)	28	(2)	50	(4)	5	(0)	**1271**	**(9.2)**
Feb	4	(0)	34	(3)	356	(30)	21	(2)	71	(6)	53	(4)	1	(0)	31	(3)	155	(13)	41	(3)	331	(28)	35	(3)	53	(4)	2	(0)	**1188**	**(8.6)**
Mar	6	(0)	36	(3)	374	(30)	27	(2)	75	(6)	72	(6)	2	(0)	46	(4)	145	(12)	38	(3)	336	(27)	41	(3)	50	(4)	5	(0)	**1253**	**(9.1)**
Apr	6	(1)	23	(2)	383	(34)	17	(1)	74	(7)	62	(5)	2	(0)	30	(3)	141	(12)	48	(4)	255	(22)	45	(4)	40	(4)	8	(1)	**1134**	**(8.2)**
May	7	(1)	19	(2)	347	(31)	20	(2)	74	(7)	34	(3)	1	(0)	39	(3)	138	(12)	42	(4)	254	(23)	86	(8)	50	(4)	7	(1)	**1118**	**(8.1)**
Jun	11	(1)	26	(2)	391	(34)	14	(1)	76	(7)	41	(4)	6	(1)	44	(4)	128	(11)	43	(4)	250	(22)	58	(5)	53	(5)	4	(0)	**1145**	**(8.3)**
Jul	9	(1)	20	(2)	352	(33)	22	(2)	76	(7)	45	(4)	3	(0)	36	(3)	114	(11)	32	(3)	243	(23)	55	(5)	47	(4)	5	(0)	**1059**	**(7.7)**
Aug	7	(1)	21	(2)	348	(33)	26	(2)	79	(7)	57	(5)	1	(0)	39	(4)	113	(11)	42	(4)	218	(20)	54	(5)	51	(5)	12	(1)	**1068**	**(7.7)**
Sep	7	(1)	28	(3)	336	(31)	21	(2)	87	(8)	41	(4)	1	(0)	36	(3)	119	(11)	51	(5)	252	(23)	45	(4)	55	(5)	10	(1)	**1089**	**(7.9)**
Oct	6	(1)	23	(2)	335	(30)	21	(2)	94	(9)	37	(3)	0	(0)	43	(4)	143	(13)	44	(4)	262	(24)	41	(4)	42	(4)	13	(1)	**1104**	**(8.0)**
Nov	9	(1)	22	(2)	351	(30)	20	(2)	82	(7)	34	(3)	1	(0)	39	(3)	118	(10)	39	(3)	364	(31)	32	(3)	55	(5)	15	(1)	**1181**	**(8.6)**
Dec	5	(0)	16	(1)	280	(24)	21	(2)	69	(6)	62	(5)	0	(0)	19	(2)	108	(9)	37	(3)	487	(41)	19	(2)	29	(2)	32	(3)	**1184**	**(8.6)**
2004 Total	**85**	**(1)**	**293**	**(2)**	**4184**	**(30)**	**252**	**(2)**	**930**	**(7)**	**605**	**(4)**	**18**	**(0)**	**447**	**(3)**	**1543**	**(11)**	**500**	**(4)**	**3705**	**(27)**	**539**	**(4)**	**575**	**(4)**	**118**	**(0.9)**	13794	

The primary reason for admission has been categorised into 13 diagnostic groups to enable a simple comparison between NHS trusts. The classification is based on CT3 (The Read Codes). The groups are mutually exclusive:

- Infection excludes any respiratory or gastrointestinal infection but includes meningitis
- Neurological disorders include neurovascular complications
- Oncology includes neuro-oncology (brain tumours)
- Other includes those diagnoses not covered by the other twelve groups

Table 5.2.1 identifies that the months of July, August and September were the least busy (note: not all units were participating in January and February 2003). The majority of diagnostic groups showed little variation in admissions by month, with the exception of 'respiratory' and 'trauma' (where admission numbers increased and decreased respectively during the winter).

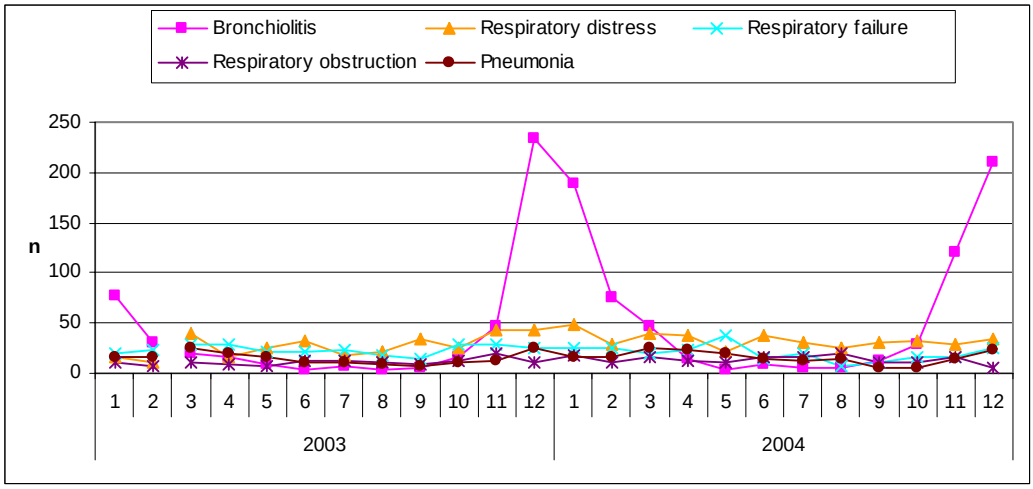
Figure 5.2.2 Admissions by month and age for respiratory admissions



Note: The broken line between months 2 and 3 in 2003 identifies that 7 PICUs in the Pan-Thames region began data collection in March 2003.

The winter peak of admissions diagnosed as respiratory is accounted for by children aged under 1 year.

Figure 5.2.3 Admissions by month and age for specific respiratory conditions



Note: The broken line between months 2 and 3 in 2003 identifies that 7 PICUs in the Pan-Thames region began data collection in March 2003.

In figure 5.2.3 a more detailed breakdown of respiratory admissions by month is given for the 2 years covered by this report. This breakdown identifies which conditions actually drive the seasonal winter peak in respiratory admissions. It also plots the respiratory elements of the most common Read Codes presented in table 5.6.3 below. It is the nature of Read Codes that there is flexibility in the level of coding detail that can be provided. For example, in Read, there are 19 separate codes for bronchiolitis, 9 of which have been used in the PICANet dataset:

H0615	Acute bronchiolitis due to respiratory syncytial virus
H061.	Acute bronchiolitis
XSDOK	Bronchiolitis
X100C	Acute viral bronchiolitis
H061z	Acute bronchiolitis NOS
X100D	Acute bronchiolitis due to adenovirus
H0612	Acute bronchiolitis with bronchospasm
X101l	Bronchiolitis obliterans
H0611	Acute obliterating bronchiolitis

Quite clearly, in presenting the seasonality of bronchiolitis admissions, these codes must be grouped. In the same way, differentiating between the 5 most commonly coded respiratory conditions other than bronchiolitis (shown below) may reveal more about coding practice than the prevalence of these individual conditions (e.g. opinion may differ regarding ‘acute respiratory failure’ vs. ‘respiratory failure’). They have been plotted individually to demonstrate their relatively stable prevalence across the months with only a minor increase during the winter months.

XM07z	Respiratory distress
XM09V	Respiratory failure
X100E	Pneumonia
H590.	Acute respiratory failure
XM05Q	Respiratory obstruction

The graph demonstrates that it is bronchiolitis that drives the winter peak and it would appear that this is coded quite specifically by the participating units during this period. It is also notable that of the 1188 admissions for bronchiolitis, 529 (45%) were attributable to respiratory syncytial virus (RSV) infection (not shown separately for clarity).

5.3 Admissions by Strategic Health Authority (SHA) / Health Board (HB)

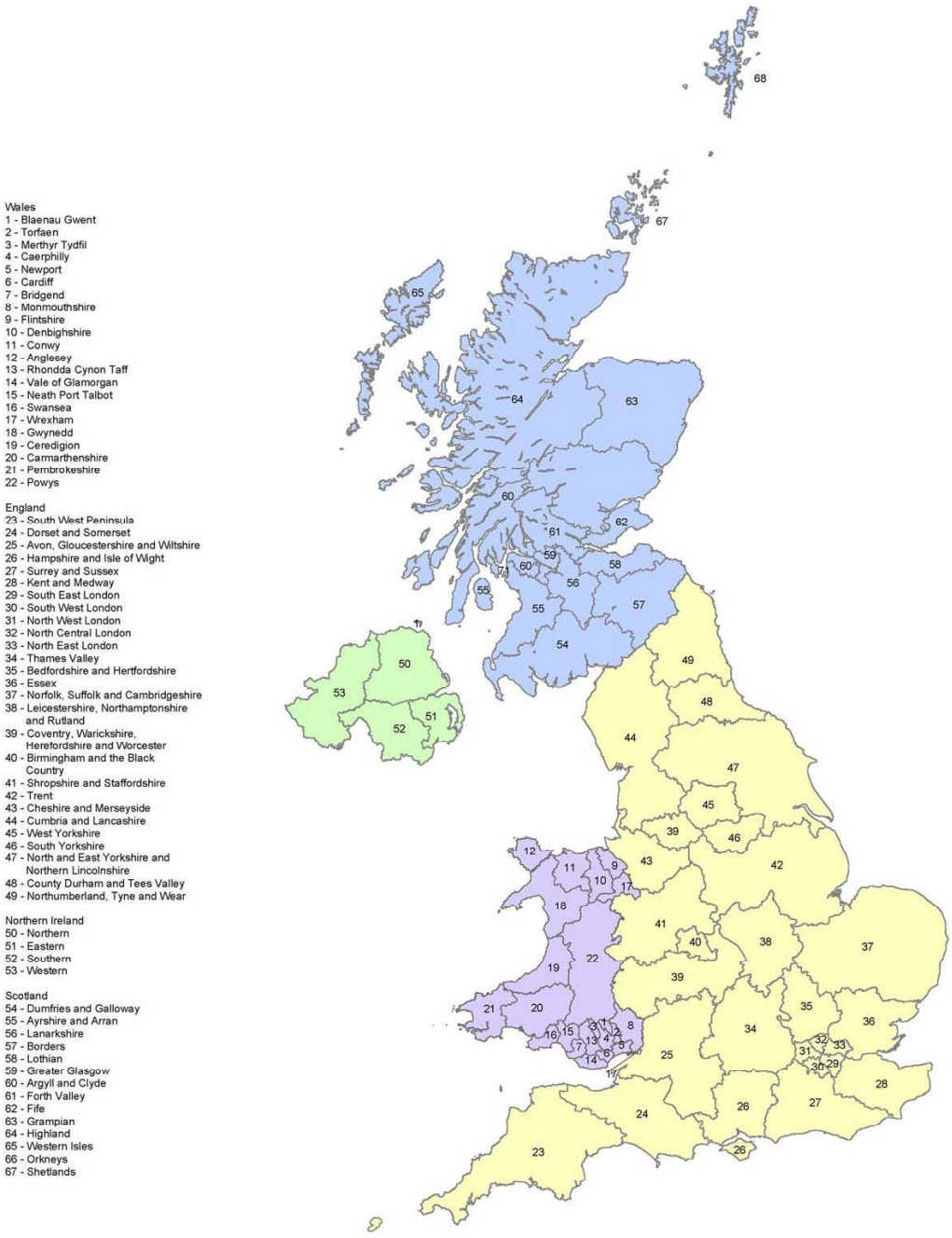
The number of admissions by SHA / HB was obtained by linking the validated home address of children admitted to PICU to SHA / HB via the All Fields Postcode Directory (AFPD). A large proportion (86%) of the missing / international address details were attributable to trusts F (59%), O (10%), U (9%) and E (8%).

Table 5.3.1 Admissions by SHA / HB

Notes:	All percentages in this table are shown as column percentages (i.e. the number of admissions from a specific SHA / HB as a percentage of the total number of admissions).	
	There were 2393 (9%) addresses that could not be validated as shown below.	
	No address details provided (missing information / anonymised records):	1933 (7% of all admissions)
	International address provided:	449 (2% of all admissions)
	Unable to validate address given:	11 (0% of all admissions)

Country	Strategic Health Authority / Health Board	Year 2003 n	%	2004 n	%	Total n	%
Channel Islands	Guernsey (and Sark)	20	(0.2)	6	(0.0)	**26**	**(0.1)**
	Jersey	26	(0.2)	8	(0.1)	**34**	**(0.1)**
Channel Islands Total		**46**	**(0.3)**	**14**	**(0.1)**	**60**	**(0.2)**
England	Avon, Gloucestershire and Wiltshire	483	(3.7)	471	(3.4)	**954**	**(3.5)**
	Bedfordshire and Hertfordshire	281	(2.1)	365	(2.6)	**646**	**(2.4)**
	Birmingham and the Black Country	582	(4.4)	518	(3.8)	**1100**	**(4.1)**
	Cheshire & Merseyside	620	(4.7)	617	(4.5)	**1237**	**(4.6)**
	County Durham and Tees Valley	399	(3.0)	470	(3.4)	**869**	**(3.2)**
	Cumbria and Lancashire	375	(2.8)	383	(2.8)	**758**	**(2.8)**
	Dorset and Somerset	220	(1.7)	214	(1.6)	**434**	**(1.6)**
	Essex	254	(1.9)	277	(2.0)	**531**	**(2.0)**
	Greater Manchester	506	(3.8)	550	(4.0)	**1056**	**(3.9)**
	Hampshire and Isle of Wight	388	(2.9)	410	(3.0)	**798**	**(3.0)**
	Kent and Medway	214	(1.6)	256	(1.9)	**470**	**(1.7)**
	Leicestershire, Northamptonshire and Rutland	612	(4.6)	625	(4.5)	**1237**	**(4.6)**
	Norfolk, Suffolk and Cambridgeshire	345	(2.6)	452	(3.3)	**797**	**(3.0)**
	North and East Yorkshire and Northern Lincolnshire	363	(2.8)	320	(2.3)	**683**	**(2.5)**
	North Central London	275	(2.1)	338	(2.5)	**613**	**(2.3)**
	North East London	305	(2.3)	435	(3.2)	**740**	**(2.7)**
	North West London	349	(2.6)	400	(2.9)	**749**	**(2.8)**
	Northumberland, Tyne & Wear	402	(3.0)	452	(3.3)	**854**	**(3.2)**
	Shropshire and Staffordshire	346	(2.6)	323	(2.3)	**669**	**(2.5)**
	South East London	293	(2.2)	346	(2.5)	**639**	**(2.4)**
	South West London	276	(2.1)	397	(2.9)	**673**	**(2.5)**
	South West Peninsula	201	(1.5)	159	(1.2)	**360**	**(1.3)**
	South Yorkshire	462	(3.5)	462	(3.3)	**924**	**(3.4)**
	Surrey and Sussex	567	(4.3)	671	(4.9)	**1238**	**(4.6)**
	Thames Valley	404	(3.1)	378	(2.7)	**782**	**(2.9)**
	Trent	815	(6.2)	806	(5.8)	**1621**	**(6.0)**
	West Midlands South	282	(2.1)	252	(1.8)	**534**	**(2.0)**
	West Yorkshire	625	(4.7)	614	(4.5)	**1239**	**(4.6)**
England Total		**11244**	**(85.2)**	**11961**	**(86.7)**	**23205**	**(86.0)**
Isle of Man Total		**17**	**(0.1)**	**10**	**(0.1)**	**27**	**(0.1)**
Northern Ireland	Eastern Health Board	8	(0.1)	7	(0.1)	**15**	**(0.1)**
	Northern Health Board	3	(0.0)	3	(0.0)	**6**	**(0.0)**
	Southern Health Board	3	(0.0)	6	(0.0)	**9**	**(0.0)**
	Western Health Board	4	(0.0)	8	(0.1)	**12**	**(0.0)**
Northern Ireland Total		**18**	**(0.1)**	**24**	**(0.2)**	**42**	**(0.2)**
Scotland	Argyll and Clyde	3	(0.0)	5	(0.0)	**8**	**(0.0)**
	Ayrshire and Arran	7	(0.1)	7	(0.1)	**14**	**(0.1)**
	Borders	1	(0.0)	4	(0.0)	**5**	**(0.0)**
	Dumfries and Galloway	5	(0.0)	5	(0.0)	**10**	**(0.0)**
	Fife	1	(0.0)	2	(0.0)	**3**	**(0.0)**
	Forth Valley	8	(0.1)	0	(0.0)	**8**	**(0.0)**
	Grampian	3	(0.0)	3	(0.0)	**6**	**(0.0)**
	Greater Glasgow	9	(0.1)	8	(0.1)	**17**	**(0.1)**
	Highland	2	(0.0)	0	(0.0)	**2**	**(0.0)**
	Lanarkshire	8	(0.1)	1	(0.0)	**9**	**(0.0)**
	Lothian	4	(0.0)	5	(0.0)	**9**	**(0.0)**
	Orkney	2	(0.0)	0	(0.0)	**2**	**(0.0)**
	Tayside	1	(0.0)	3	(0.0)	**4**	**(0.0)**
	Western Isles	1	(0.0)	0	(0.0)	**1**	**(0.0)**
Scotland Total		**55**	**(0.4)**	**43**	**(0.3)**	**98**	**(0.4)**
Wales	Powys	17	(0.1)	12	(0.1)	**29**	**(0.1)**
	Carmarthenshire	30	(0.2)	23	(0.2)	**53**	**(0.2)**
	Blaenau Gwent	12	(0.1)	10	(0.1)	**22**	**(0.1)**
	Ceredigion	12	(0.1)	12	(0.1)	**24**	**(0.1)**
	Newport	39	(0.3)	36	(0.3)	**75**	**(0.3)**
	Vale of Glamorgan	22	(0.2)	20	(0.1)	**42**	**(0.2)**
	Conwy	24	(0.2)	23	(0.2)	**47**	**(0.2)**
	Flintshire	28	(0.2)	24	(0.2)	**52**	**(0.2)**
	Rhondda Cynon Taff	57	(0.4)	47	(0.3)	**104**	**(0.4)**
	Pembrokeshire	23	(0.2)	12	(0.1)	**35**	**(0.1)**
	Caerphilly	40	(0.3)	44	(0.3)	**84**	**(0.3)**
	Monmouthshire	18	(0.1)	6	(0.0)	**24**	**(0.1)**
	Cardiff	88	(0.7)	84	(0.6)	**172**	**(0.6)**
	Torfaen	16	(0.1)	14	(0.1)	**30**	**(0.1)**
	Merthyr Tydfil	13	(0.1)	6	(0.0)	**19**	**(0.1)**
	Gwynedd	24	(0.2)	23	(0.2)	**47**	**(0.2)**
	Neath Port Talbot	27	(0.2)	18	(0.1)	**45**	**(0.2)**
	Swansea	29	(0.2)	43	(0.3)	**72**	**(0.3)**
	Bridgend	25	(0.2)	25	(0.2)	**50**	**(0.2)**
	Denbighshire	22	(0.2)	19	(0.1)	**41**	**(0.2)**
	Anglesey	24	(0.2)	18	(0.1)	**42**	**(0.2)**
	Wrexham	36	(0.3)	24	(0.2)	**60**	**(0.2)**
Wales Total		**626**	**(4.7)**	**543**	**(3.9)**	**1169**	**(4.3)**
Missing Total		**1194**	**(9.0)**	**1199**	**(8.7)**	**2393**	**(8.9)**
Total		**13200**		**13794**		**26994**	

Figure 5.3.1 SHA / HB boundaries



5.4 Admissions by mortality risk category

The expected probability of mortality was estimated using PIM[1], taking the recalibrated coefficients supplied by UK PICOS. The categorization into <1%, 1 - 5%, 5 - 15%, 15 - 30% and 30% - plus expected probability of mortality reflects those used by the Australian New Zealand Intensive Care Society (ANZPICS) for comparability.[2] Over half (52%) of children had an expected probability of mortality of between 1 and 5 %.

Admission by mortality risk category is presented by NHS trust in Appendix K.1.

References

1 Shann F, Pearson G, Slater A, Wilkinson K, Paediatric index of mortality (PIM): a mortality prediction model for children in intensive care. Intensive Care Med 1997; 23:201-207.

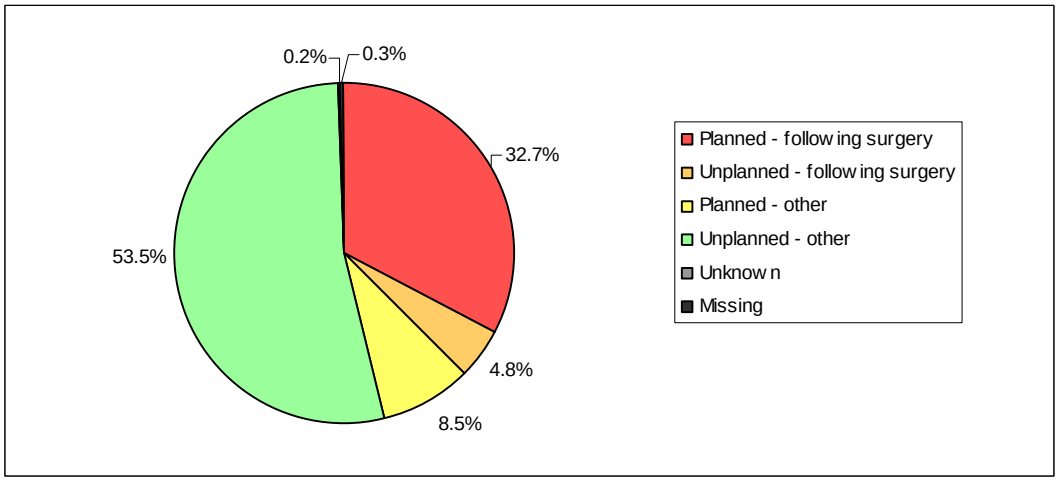
2 Australian New Zealand Intensive Care Society. Report of the Australian and New Zealand Paediatric Intensive Care Registry – 2003. http://www.anzics.com.au/paed/files/anzpic-report-2003.pdf (accessed 16 March 2005).

5.5 Admissions by admission type

We have used the following definitions for type of admission:

- An admission that is 'planned - following surgery' is one that the unit is aware of before the surgery begins and one that could have been delayed for 24 hours without risk (e.g. spinal surgery).
- An admission that is 'unplanned - following surgery' is one that the unit was not aware of before surgery began and one that could not have been delayed without risk (e.g. bleeding tonsillectomy).
- A 'planned - other' admission is any other planned admission that is not an emergency (e.g. liver biopsy).
- An 'unplanned - other' admission is one that the unit was not expecting and is therefore an emergency admission (e.g. status epilepticus).

Figure 5.5.1 Admissions by admission type



Notes: Surgery is defined as undergoing all or part of a procedure or anaesthesia for a procedure in an operating theatre or anaesthetic room. Patients admitted from the operating theatre where surgery is not the main reason for admission (e.g. a patient with a head injury who is admitted from theatre after insertion of an ICP monitor) are not included here. In such patients the main reason for admission is head injury and thus the admission type would be 'unplanned - other'.

Unknown cases are where the unit has specifically recorded 'not known' and missing cases are where the value has been left blank.

The majority of admissions (53%) were ‘unplanned - other’.

Table 5.5.1 Admissions by admission type and age

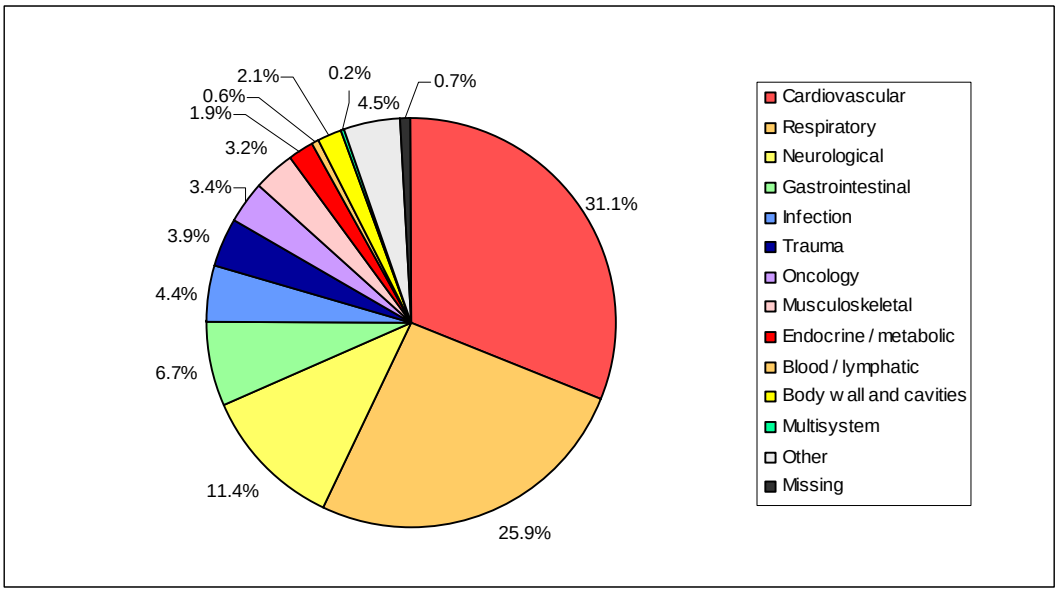
Admission type	Age group (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	Total n	%
Planned - following surgery	3843	(43)	2330	(26)	1366	(15)	1297	(15)	**8836**	**(32.7)**
Unplanned - following surgery	508	(39)	339	(26)	247	(19)	200	(15)	**1294**	**(4.8)**
Planned - other	1266	(55)	465	(20)	293	(13)	265	(12)	**2289**	**(8.5)**
Unplanned - other	7139	(49)	3602	(25)	1924	(13)	1766	(12)	**14431**	**(53.5)**
Unknown	24	(43)	16	(29)	9	(16)	7	(13)	**56**	**(0.2)**
Missing	27	(31)	38	(43)	10	(11)	13	(15)	**88**	**(0.3)**
Total	**12807**	**(47.4)**	**6790**	**(25.2)**	**3849**	**(14.3)**	**3548**	**(13.1)**	**26994**	

Note: Unknown cases are where the unit has specifically recorded 'not known' and missing cases are where the value has been left blank.

All admission types were dominated by children aged under 1 year. Most admissions were ‘unplanned - other’ (53%), followed by ‘planned - following surgery’ (33%).

5.6 Admissions by primary diagnostic group

Figure 5.6.1 Admissions by primary diagnostic group



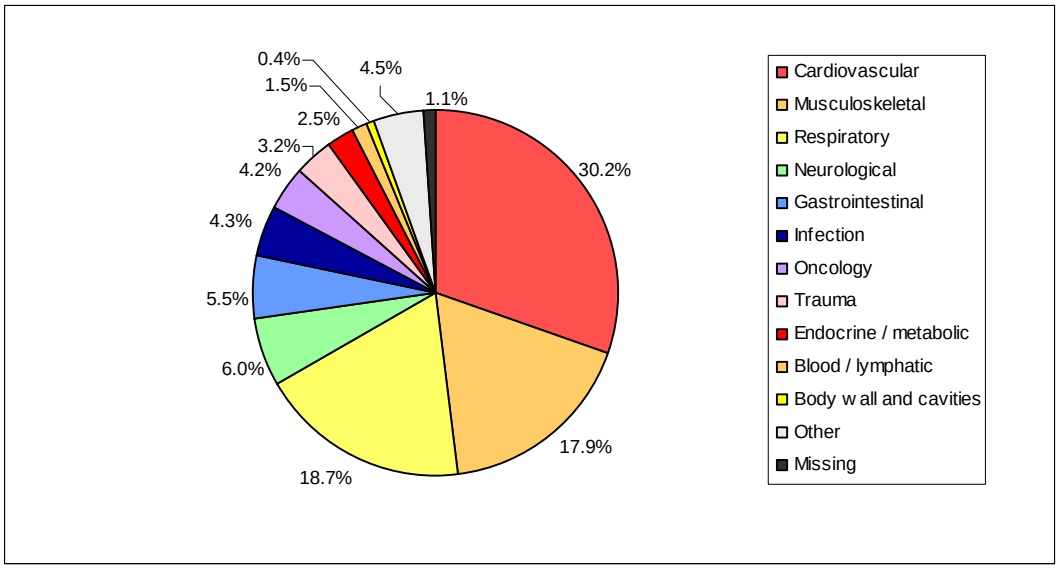
The 2 most common primary diagnostic groups were ‘cardiovascular’ and ‘respiratory’ (with 31% and 26% of admissions respectively).

Table 5.6.1 Admissions by primary diagnostic group and age

Diagnostic group	Age group (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	Total n	%
Cardiovascular	4940	(59)	1783	(21)	948	(11)	722	(9)	**8393**	**(31.1)**
Respiratory	3886	(56)	1786	(26)	807	(12)	501	(7)	**6980**	**(25.9)**
Neurological	869	(28)	1100	(36)	628	(20)	470	(15)	**3067**	**(11.4)**
Gastrointestinal	1146	(64)	326	(18)	167	(9)	157	(9)	**1796**	**(6.7)**
Infection	422	(35)	441	(37)	174	(15)	162	(14)	**1199**	**(4.4)**
Trauma	70	(7)	276	(26)	301	(29)	399	(38)	**1046**	**(3.9)**
Oncology	123	(13)	314	(34)	261	(28)	224	(24)	**922**	**(3.4)**
Musculoskeletal	82	(9)	151	(17)	190	(22)	453	(52)	**876**	**(3.2)**
Endocrine / metabolic	175	(35)	148	(29)	91	(18)	93	(18)	**507**	**(1.9)**
Blood / lymphatic	36	(22)	53	(33)	47	(29)	27	(17)	**163**	**(0.6)**
Body wall and cavities	514	(90)	33	(6)	10	(2)	13	(2)	**570**	**(2.1)**
Multisystem	29	(51)	12	(21)	9	(16)	7	(12)	**57**	**(0.2)**
Other	457	(37)	302	(25)	180	(15)	287	(23)	**1226**	**(4.5)**
Missing	58	(30)	65	(34)	36	(19)	33	(17)	**192**	**(0.7)**
Total	**12807**	**(47.4)**	**6790**	**(25.2)**	**3849**	**(14.3)**	**3548**	**(13.1)**	**26994**	

Most ‘cardiovascular’ and ‘respiratory’ admissions were under 1 year of age, compared to ‘musculoskeletal’ and ‘trauma’, where virtually all admissions were aged over 1 year.

Figure 5.6.2 For 16 years and above: admissions by primary diagnostic group



The most common primary diagnostic groups for admissions 16 years and above were ‘cardiovascular’ (30%), ‘respiratory’ (19%) and ‘musculoskeletal’ (18%).

Table 5.6.2 For 16 years and above: admissions by primary diagnostic group

Diagnostic group	Age group (years) 16		17-20		21-25		26+		Total	
	n	%	n	%	n	%	n	%	n	%
Cardiovascular	92	(58)	58	(36)	6	(4)	4	(3)	**160**	**(30.2)**
Musculoskeletal	63	(66)	32	(34)	0	(0)	0	(0)	**95**	**(17.9)**
Respiratory	60	(61)	38	(38)	0	(0)	1	(1)	**99**	**(18.7)**
Neurological	17	(53)	11	(34)	4	(13)	0	(0)	**32**	**(6.0)**
Gastrointestinal	19	(66)	10	(34)	0	(0)	0	(0)	**29**	**(5.5)**
Infection	16	(70)	7	(30)	0	(0)	0	(0)	**23**	**(4.3)**
Oncology	15	(68)	7	(32)	0	(0)	0	(0)	**22**	**(4.2)**
Trauma	15	(88)	2	(12)	0	(0)	0	(0)	**17**	**(3.2)**
Endocrine / metabolic	12	(92)	1	(8)	0	(0)	0	(0)	**13**	**(2.5)**
Blood / lymphatic	4	(50)	4	(50)	0	(0)	0	(0)	**8**	**(1.5)**
Body wall and cavities	2	(100)	0	(0)	0	(0)	0	(0)	**2**	**(0.4)**
Other	16	(67)	8	(33)	0	(0)	0	(0)	**24**	**(4.5)**
Missing	5	(83)	1	(17)	0	(0)	0	(0)	**6**	**(1.1)**
Total	**336**	**(63.4)**	**179**	**(33.8)**	**10**	**(1.9)**	**5**	**(0.9)**	**530**	

There were relatively few admissions of young people over 16 years of age.

Table 5.6.3 Most commonly returned Read Codes for primary reason for admission

Primary reason (code)	Diagnostic group	Sex Male		Female		Total	
Ventricular septal defect (P54..)	**Cardiovascular**	454	(53)	402	(47)	**856**	**(3.2)**
Respiratory distress (XM07z)	**Respiratory**	455	(63)	265	(37)	**720**	**(2.7)**
Tetralogy of Fallot (P52..)	**Cardiovascular**	371	(58)	272	(42)	**643**	**(2.4)**
Discordant ventriculoarterial connection (P51..)	**Cardiovascular**	412	(65)	219	(35)	**631**	**(2.3)**
Status epilepticus (X007B)	**Neurological**	301	(56)	234	(44)	**535**	**(2.0)**
Acute bronchiolitis due to respiratory syncytial virus (H0615)	**Respiratory**	327	(62)	201	(38)	**528**	**(2.0)**
Respiratory failure (XM09V)	**Respiratory**	303	(58)	221	(42)	**524**	**(1.9)**
Atrial septal defect (X77vY)	**Cardiovascular**	204	(42)	278	(58)	**482**	**(1.8)**
Patent ductus arteriosus (P70..)	**Cardiovascular**	220	(49)	233	(51)	**453**	**(1.7)**
Sepsis (X70VZ)	**Infection**	248	(59)	170	(41)	**418**	**(1.5)**
Meningococcal septicaemia (A362.)	**Infection**	230	(56)	178	(44)	**408**	**(1.5)**
Hypoplastic left heart syndrome (P67..)	**Cardiovascular**	259	(64)	147	(36)	**406**	**(1.5)**
Aortic coarctation (P71..)	**Cardiovascular**	257	(65)	136	(35)	**393**	**(1.5)**
Pneumonia (X100E)	**Respiratory**	189	(51)	180	(49)	**369**	**(1.4)**
Kyphoscoliosis or scoliosis NOS (N373z)	**Musculoskeletal**	137	(38)	225	(62)	**362**	**(1.3)**
Head injury NOS (XA004)	**Trauma**	213	(66)	112	(34)	**325**	**(1.2)**
Atrioventricular septal defect & common atriovent junction (X77wc)	**Cardiovascular**	157	(49)	166	(51)	**323**	**(1.2)**
Acute bronchiolitis (H061.)	**Respiratory**	191	(61)	121	(39)	**312**	**(1.2)**
Congenital heart disease (X77tW)	**Cardiovascular**	164	(53)	148	(47)	**312**	**(1.2)**
Acute respiratory failure (H590.)	**Respiratory**	184	(61)	116	(39)	**300**	**(1.1)**
Total		**5276**	**(56.7)**	**4024**	**(43.3)**	**9300**	**(34.5)**

Table 5.6.4 Most commonly returned Read Codes for primary reason for 'unplanned - other' admissions

Primary reason (code)	Diagnostic group	Sex Male		Female		Total	
		n	%	n	%	n	%
Respiratory distress (XM07z)	**Respiratory**	407	(63)	234	(37)	**641**	**(4.4)**
Status epilepticus (X007B)	**Neurological**	288	(56)	228	(44)	**516**	**(3.6)**
Acute bronchiolitis due to respiratory syncytial virus (H0615)	**Respiratory**	303	(61)	191	(39)	**494**	**(3.4)**
Respiratory failure (XM09V)	**Respiratory**	278	(58)	202	(42)	**480**	**(3.3)**
Meningococcal septicaemia (A362.)	**Infection**	221	(56)	172	(44)	**393**	**(2.7)**
Sepsis (X70VZ)	**Infection**	230	(61)	150	(39)	**380**	**(2.6)**
Pneumonia (X100E)	**Respiratory**	171	(51)	163	(49)	**334**	**(2.3)**
Acute bronchiolitis (H061.)	**Respiratory**	184	(61)	117	(39)	**301**	**(2.1)**
Head injury NOS (XA004)	**Trauma**	186	(65)	102	(35)	**288**	**(2.0)**
Acute respiratory failure (H590.)	**Respiratory**	166	(61)	107	(39)	**273**	**(1.9)**
Seizure (XaEHz)	**Neurological**	152	(57)	117	(43)	**269**	**(1.9)**
Bronchiolitis (XSDOK)	**Respiratory**	151	(59)	105	(41)	**256**	**(1.8)**
Injury of head region (XA003)	**Trauma**	152	(73)	56	(27)	**208**	**(1.4)**
Status asthmaticus (X102D)	**Respiratory**	116	(62)	72	(38)	**188**	**(1.3)**
Acute laryngotracheobronchitis (Xa0lW)	**Respiratory**	124	(66)	64	(34)	**188**	**(1.3)**
Discordant ventriculoarterial connection (P51..)	**Cardiovascular**	120	(66)	61	(34)	**181**	**(1.3)**
Febrile convulsion (XM03l)	**Neurological**	98	(55)	79	(45)	**177**	**(1.2)**
Neonatal necrotising enterocolitis (Q464.)	**Gastrointestinal**	100	(58)	72	(42)	**172**	**(1.2)**
Apnoea (X76Gw)	**Respiratory**	97	(61)	62	(39)	**159**	**(1.1)**
Fits - convulsions (XaEI2)	**Neurological**	89	(57)	68	(43)	**157**	**(1.1)**
Total		**3633**	**(60.0)**	**2422**	**(40.0)**	**6055**	**(42.0)**

Table 5.6.5 Most commonly returned Read Codes for primary reason for 'unplanned - following surgery' admissions

Primary reason (code)	Diagnostic group	Sex				Total	
		Male		Female			
		n	%	n	%	n	%
Respiratory obstruction (XM05Q)	**Respiratory**	33	(70)	14	(30)	**47**	**(3.6)**
Respiratory distress (XM07z)	**Respiratory**	19	(66)	10	(34)	**29**	**(2.2)**
Stridor (XM082)	**Respiratory**	12	(52)	11	(48)	**23**	**(1.8)**
Intussusception (J500.)	**Gastrointestinal**	9	(39)	14	(61)	**23**	**(1.8)**
Empyema (XaE01)	**Infection**	15	(65)	8	(35)	**23**	**(1.8)**
Gastroschisis (PG71.)	**Body wall and cavities**	14	(70)	6	(30)	**20**	**(1.5)**
Sepsis (X70VZ)	**Infection**	9	(53)	8	(47)	**17**	**(1.3)**
Peritonitis (J55..)	**Gastrointestinal**	9	(53)	8	(47)	**17**	**(1.3)**
Head injury NOS (XA004)	**Trauma**	13	(76)	4	(24)	**17**	**(1.3)**
Chronic hepatic failure (X307C)	**Gastrointestinal**	8	(50)	8	(50)	**16**	**(1.2)**
Apnoea (X76Gw)	**Respiratory**	11	(73)	4	(27)	**15**	**(1.2)**
Acute intestinal obstruction (J50z4)	**Gastrointestinal**	6	(43)	8	(57)	**14**	**(1.1)**
Hydrocephalus (X00EG)	**Neurological**	7	(50)	7	(50)	**14**	**(1.1)**
Atresia of bile ducts (PB61.)	**Gastrointestinal**	5	(38)	8	(62)	**13**	**(1.0)**
Hirschsprung's disease (PB30.)	**Gastrointestinal**	10	(77)	3	(23)	**13**	**(1.0)**
Aspiration pneumonitis (H47..)	**Respiratory**	6	(50)	6	(50)	**12**	**(0.9)**
Bleeding from tonsillar bed (X76bB)	**Respiratory**	7	(58)	5	(42)	**12**	**(0.9)**
Acute respiratory failure (H590.)	**Respiratory**	9	(75)	3	(25)	**12**	**(0.9)**
Neonatal necrotising enterocolitis (Q464.)	**Gastrointestinal**	7	(58)	5	(42)	**12**	**(0.9)**
Cardiac arrest (XE0V5)	**Cardiovascular**	6	(55)	5	(45)	**11**	**(0.9)**
Total		**215**	**(59.7)**	**145**	**(40.3)**	**360**	**(27.8)**

The most common Read Codes returned to PICANet for primary reason for admission are presented in table 5.6.3 without any attempt to group them further. These 20 diagnoses represent 9 308 (35%) of the admission diagnoses. Of these in the top twenty, 4504 (48%) are defined as 'cardiovascular' and 2756 (30%) are 'respiratory' and represent the most often used codes in these diagnostic groups.

The level of precision in the coding method makes interpretation of these data difficult without some form of aggregation, however PICANet have allowed the flexibility to code very specifically to enable prospective audit to focus on particular conditions; for example, RSV positive bronchiolitis. Some units have chosen to code more diagnoses in more detail to allow them to use this information locally, others have coded a single diagnosis at a general level. For most reporting purposes, the broad diagnostic groups used in the remainder of this report are sufficient. Further disaggregation needs to be carefully considered due to the variation in coding practice between individual units.

The codes have been aggregated and disaggregated for the respiratory admissions (figure 5.2.3) to enable seasonal fluctuation in the data to be interpreted. A similar exercise with cardiovascular conditions is feasible but this is a highly complex area: it is not clear how many children diagnosed with 'congenital heart disease' could have been coded more specifically with 'tetralogy of fallot' or an 'atrial septal defect'. The utility of the coding scheme lies in its potential to code at a detailed level when needed. For this reason, PICANet have not imposed an arbitrary grouping of codes but present the raw data for the top 20 codes.

6 RETRIEVAL DATA

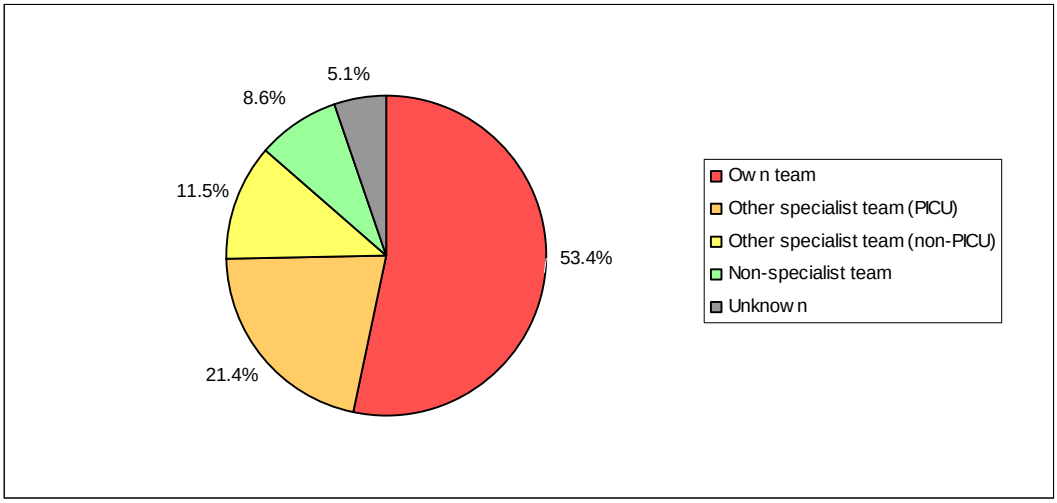
6.1 Retrievals by team type

Data are collected on whether or not a child was retrieved / transferred into the PICU. We have used the following definitions:

- 'Own team' identifies that your own team collected the child from the referring hospital.
- 'Other specialist team (PICU)' identifies that another PICU retrieval team transferred the child to your unit.
- 'Other specialist team (non PICU)' identifies that another transport team, not a PICU team (e.g. Accident and Emergency Department (A&E), theatre teams or neonatal teams).
- 'Non-specialist team' identifies that a non PICU, non specialist team transported the child to your unit (e.g. ward staff).

In the majority of PICUs, doctors and nurses who work on the unit undertake retrieval of critically ill children. Within London there are 2 specific transport teams, the Children's Acute Transfer Service (CATS), and the South Thames retrieval team. CATS is based at Great Ormond Street Hospital (GOSH), and is staffed separately from the intensive care units at GOSH. For PICANet, any child retrieved by CATS into a PICU at GOSH is recorded as 'other specialist team (PICU)'. The South Thames retrieval team is based at Guy's Hospital and is staffed by doctors and nurses from within the PICU. For PICANet, any child retrieved by the South Thames team into the PICU at Guy's Hospital is classed as 'own team'.

Figure 6.1.1 Retrievals by team type



The majority of children (75%) were retrieved by teams made up of staff appropriately trained in PIC.

Table 6.1.1 Retrievals by team type and age

Retrieval team	Age group (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	n	%
Own team	2474	(49)	1427	(28)	609	(12)	511	(10)	**5021**	**(53.4)**
Other specialist team (PICU)	1134	(56)	434	(22)	239	(12)	201	(10)	**2008**	**(21.4)**
Other specialist team (non-PICU)	740	(69)	127	(12)	85	(8)	125	(12)	**1077**	**(11.5)**
Non-specialist team	479	(60)	123	(15)	84	(10)	119	(15)	**805**	**(8.6)**
Unknown	357	(74)	70	(14)	34	(7)	22	(5)	**483**	**(5.1)**
Missing	1	(100)	0	(0)	0	(0)	0	(0)	**1**	**(0.0)**
Total	**5185**	**(55.2)**	**2181**	**(23.2)**	**1051**	**(11.2)**	**978**	**(10.4)**	**9395**	

Children aged less than 1 year were retrieved more frequently than other age groups, reflecting the proportion of admissions in this age group. Eight hundred and five children (9%) were transported into PICU by a non-specialist team; table 6.1.2 gives a breakdown of the diagnostic groups for these children.

Table 6.1.2 'Non-specialist team' retrievals by primary diagnostic group

Diagnostic group	Age group (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	Total n	%
Body wall and cavities	22	(92)	1	(4)	0	(0)	1	(4)	**24**	**(3.0)**
Cardiovascular	148	(81)	15	(8)	4	(2)	16	(9)	**183**	**(22.7)**
Gastrointestinal	87	(93)	3	(3)	3	(3)	1	(1)	**94**	**(11.7)**
Infection	5	(26)	5	(26)	4	(21)	5	(26)	**19**	**(2.4)**
Multisystem	1	(50)	1	(50)	0	(0)	0	(0)	**2**	**(0.2)**
Musculoskeletal	1	(33)	0	(0)	2	(67)	0	(0)	**3**	**(0.4)**
Neurological	38	(38)	27	(27)	15	(15)	21	(21)	**101**	**(12.5)**
Oncology	3	(18)	6	(35)	5	(29)	3	(18)	**17**	**(2.1)**
Respiratory	131	(70)	30	(16)	10	(5)	15	(8)	**186**	**(23.1)**
Trauma	3	(3)	25	(23)	32	(30)	47	(44)	**107**	**(13.3)**
Other	35	(76)	3	(7)	3	(7)	5	(11)	**46**	**(5.7)**
Missing	0	(0)	0	(0)	1	(50)	1	(50)	**2**	**(0.2)**
Endocrine / metabolic	3	(21)	4	(29)	4	(29)	3	(21)	**14**	**(1.7)**
Blood / lymphatic	2	(29)	3	(43)	1	(14)	1	(14)	**7**	**(0.9)**
Total	**479**	**(59.5)**	**123**	**(15.3)**	**84**	**(10.4)**	**119**	**(14.8)**	**805**	

Forty-six percent of ‘non specialist team’ retrievals had a primary diagnosis of a respiratory or cardiovascular condition. ‘Trauma’ was the most common reason for transport by a non-specialist team in the 11 - 15 year old age group.

The table in appendix K.2 shows retrievals by team type by NHS trust. Between 2003 and 2004, retrievals increased by 6% (from 4 557 to 4 838). In 2004 a reduction of 281 retrievals by ‘own team’ was observed and an increase of 392 retrievals performed by ‘other specialist team (PICU)’.

7 INTERVENTION DATA

In this section we present a summary of data relating to interventions that may be performed during a child's admission to PICU. Most of the interventions described are available in all PICUs, however, a few specialist interventions (such as ECMO or LVAD) are only be available in a PICU where invasive cardiac procedures are routinely performed.

7.1 Interventions performed

This data is presented by NHS trust (see Appendix K.3).

7.2 Ventilation status

Length of ventilation was calculated in days. Any ventilation during the period midnight to midnight was counted as 1 complete day of ventilation (e.g. a child intubated and ventilated at 23.45 on 7 March and extubated at 02.30 on 8 March would count as 2 days of ventilation). To obtain a more exact length of ventilation would require accurate times of intubation and extubation to be recorded for each child.

Table 7.2.1 Admissions by ventilation status and age

Ventilation	Age group (years)								Total	
	<1		1-4		5-10		11-15			
	n	%	n	%	n	%	n	%	n	%
Invasive only	7958	(49)	4121	(25)	2157	(13)	1991	(12)	**16227**	**(60.1)**
Non-invasive only	467	(51)	185	(20)	145	(16)	117	(13)	**914**	**(3.4)**
Both	1520	(66)	385	(17)	218	(9)	190	(8)	**2313**	**(8.6)**
Neither	2643	(38)	1949	(28)	1251	(18)	1194	(17)	**7037**	**(26.1)**
Unknown	135	(49)	63	(23)	47	(17)	31	(11)	**276**	**(1.0)**
Missing	84	(37)	87	(38)	31	(14)	25	(11)	**227**	**(0.8)**
Total	**12807**		**6790**		**3849**		**3548**		**26994**	

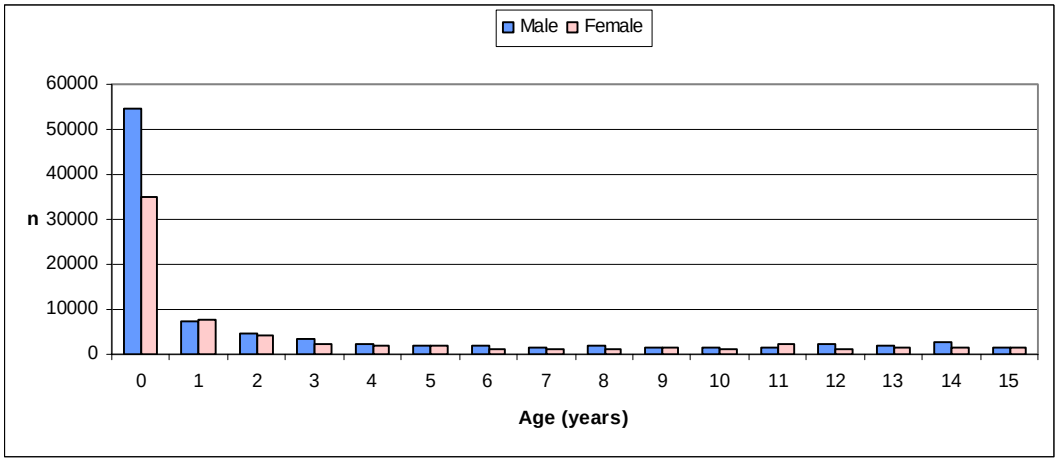
Note: To calculate the percentage of admissions receiving invasive ventilation, 'invasive only' should be added to 'both'. Likewise, to calculate the percentage of admissions receiving non-invasive ventilation, 'non-invasive only' should be added to 'both'.

Invasive ventilation is the most common method of providing artificial ventilation across all age ranges.

8 BED ACTIVITY DATA

8.1 Total number of bed days delivered

Figure 8.1.1 Total number of bed days delivered by age and sex



Note: These data do not include admissions for January and February 2003 for trusts A, E, H, J, O, T and U.

With nearly 50% of admissions being under 1 year old, it is unsurprising that this is reflected in the number of bed days delivered.

8.2 Bed activity

Figure 8.2.1 Median daily bed activity by month

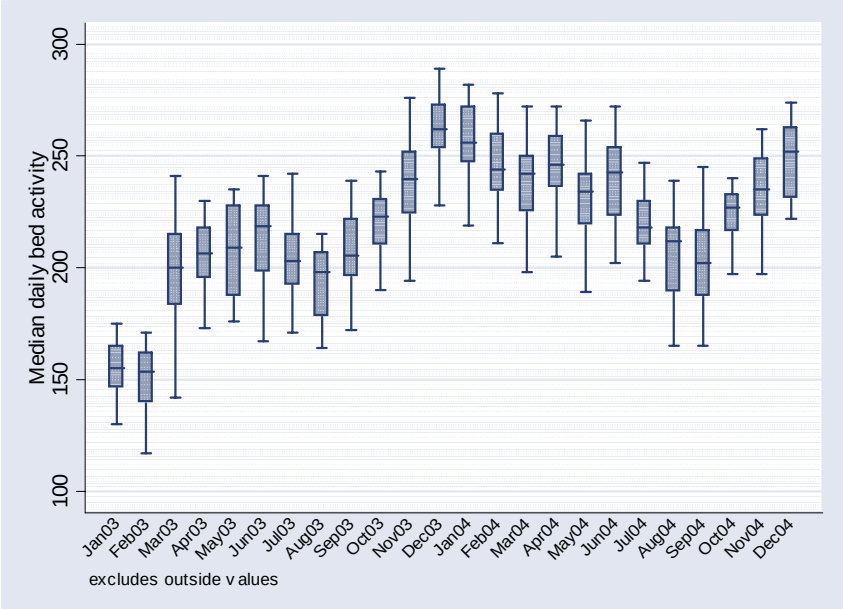


Figure 8.2.1 charts the median daily bed activity by month for 2003 and 2004 using a box and whisker graph. This type of graph indicates the median by a line within the coloured box, the ends of which give the interquartile ranges (IQR). The 'whiskers' indicate the extreme values. As January and February 2003 admissions data are not available for the trusts indicated above the activity appears lower in those 2 months and is affected by left censoring of the data from March 2003 for subsequent months in 2003. Notwithstanding these comments, the seasonal peak in occupancy in the winter months is clearly illustrated.

Table 8.2.1 Median daily bed activity by month

		Bed activity (days)	
		Median	(IQR)
2003	**Jan**	155	(146-165)
	Feb	153.5	(139.5-162)
	Mar	200	(183-215)
	Apr	206.5	(195-218)
	May	209	(187-228)
	Jun	218.5	(198-228)
	Jul	203	(192-215)
	Aug	198	(178-207)
	Sep	205.5	(196-222)
	Oct	223	(210-231)
	Nov	239.5	(224-252)
	Dec	262	(253-273)
2004	**Jan**	256	(247-272)
	Feb	244	(234-260)
	Mar	242	(225-250)
	Apr	246	(236-259)
	May	234	(219-242)
	Jun	242.5	(223-254)
	Jul	218	(210-230)
	Aug	212	(189-218)
	Sep	202	(187-217)
	Oct	227	(216-233)
	Nov	235	(223-249)
	Dec	252	(231-263)

Note: The lower figures in January & February 2003 identify that 7 PICUs in the Pan-Thames region began data collection in March 2003.

Figure 8.2.2 Median daily bed activity by NHS trust (2003)

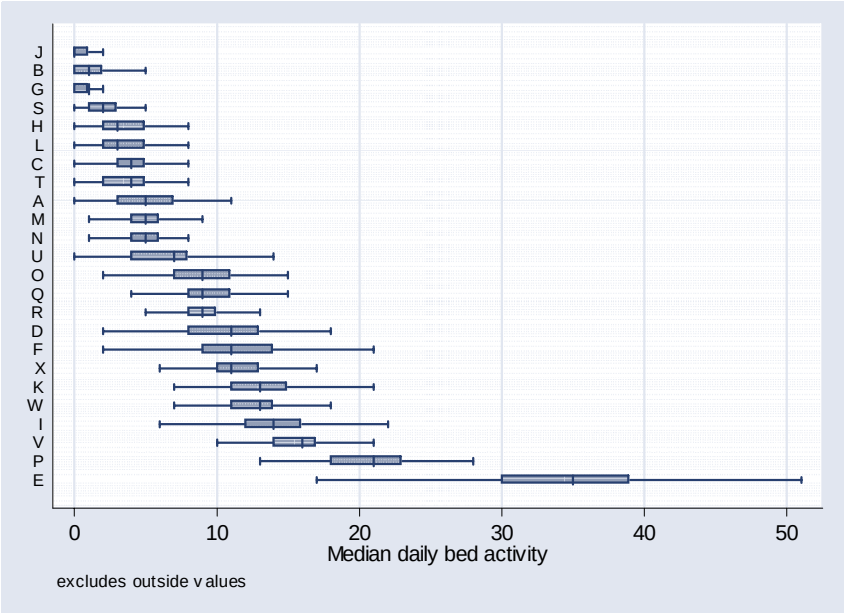
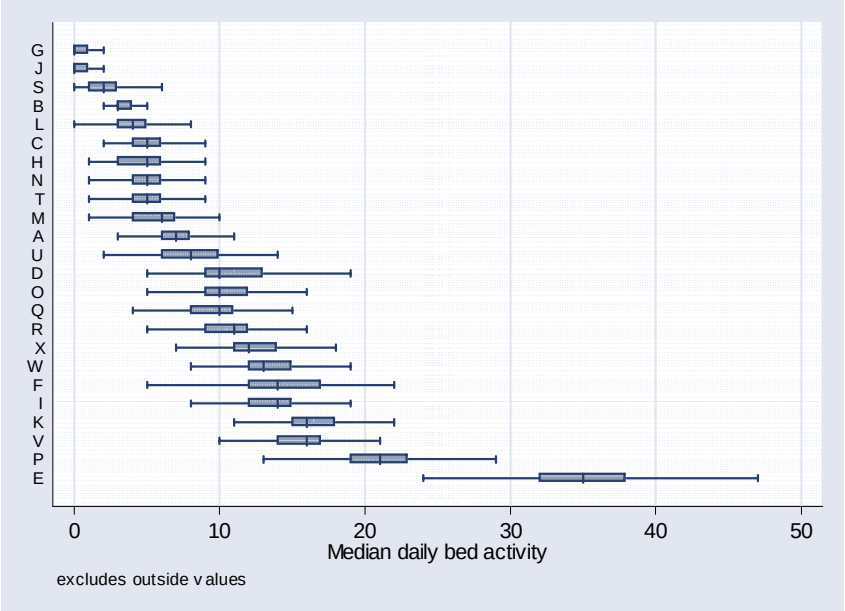


Figure 8.2.3 Median daily bed activity by NHS trust (2004)



A bed is counted as occupied if a child was present on a unit for any part of a day. This means that, theoretically, units may apparently exceed their bed capacity quite considerably if they have a number of short duration admissions. Figures 8.2.2 and 8.2.3 plot median daily bed activity by NHS trust for 2003 and 2004 separately and the caveats regarding January and February 2003 admission data apply here. Summary data is available in tabulated form on median daily bed activity and length of stay by age group and diagnostic group by NHS trust in Appendix K.4.

Figure 8.2.4 Median daily bed activity by NHS trust 2003 - 2004 with maximum number of available beds

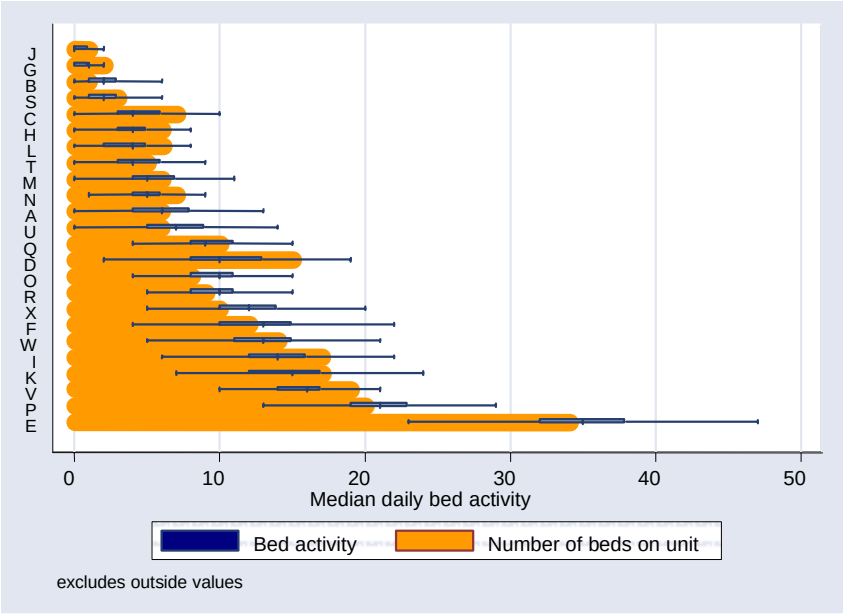


Figure 8.2.4 plots median daily bed activity by NHS trust along with the maximum available number of intensive care beds notified to PICANet by each trust for the period 2003-2004. This figure gives a very approximate indication of overall 'occupancy' levels (i.e. how full a unit is). It should be noted that we have used a very crude denominator which does not take account of periods when individual beds (or even units) are closed.

9 OUTCOME DATA

Outcome is described in terms of crude mortality by age and sex for England and Wales combined, and by trust using unadjusted and risk-adjusted standardized mortality ratios (SMRs). Tabulated data including crude mortality at discharge from PICU (PICU mortality) and 30 days post-discharge from PICU and SMRs by trust are given in Appendix K.5. PICU mortality funnel plots are presented in this section.

Unadjusted SMRs (for PICU mortality) are calculated by dividing the expected number of deaths based on the national data by the observed number of deaths in each trust. In addition, risk-adjusted SMRs are calculated by dividing the expected number of deaths predicted by PIM[1] by the observed number of deaths in each trust. We have used the original version of PIM with revised coefficients supplied from UK PICOS that give a better calibration. The trust identifiers in the tables contained in Appendix K.5.2 have been scrambled to maintain anonymity.

PICU mortality funnel plots are presented here for 2003, 2004 and combined years to provide a visual means of comparing unadjusted and adjusted SMRs between trusts without imposing the ranking observed in league tables. The SMRs are plotted on the y-axis against the number of admissions to the trust on the x-axis. Higher mortality rates are represented by points plotted above the line of unity, with those appearing outside the upper control limit indicating an unusual excess mortality. Lower mortality rates are represented by points plotted below the line of unity and those falling below the lower control limit indicate unusually low mortality. In order to satisfy the condition that if the overall distribution of the mortality ratios is random there exists an approximately 5% chance of a unit falling outside the control limits, then the upper and lower control limits constructed at an individual unit level must represent not 95% confidence intervals, but 99.9% confidence intervals around a mortality ratio of 1 by number of admissions.[2] This is analogous to increasing the confidence interval (or significance level) when correcting for multiple comparisons in data containing numerous groups. This means that the funnel plots are drawn in such a way that there is an approximately 5% chance of a unit falling outside the control limits if the distribution of SMRs is random.

Funnel plots have been used to examine mortality rates following surgery for congenital heart surgery[3] and their effectiveness highlighted when applied to upper gastrointestinal surgery[4] and a reanalysis of emergency re-admission rates following treatment for stroke.[2]

9.1 Outcome at PICU discharge

Table 9.1.1 Outcome at PICU discharge by age and sex

Outcome	Age group (years) / Sex																						Total	
	<1						1-4						5-10						11-15					
	Male		Female		<>		Male		Female		<>		Male		Female		<>		Male		Female		<>			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Alive	7163	(94)	4857	(94)	18	(95)	3648	(96)	2821	(95)	10	(100)	2084	(96)	1604	(95)	1	(100)	1828	(94)	1506	(94)	1	(100)	**25541**	**(94.6)**
Dead	434	(6)	326	(6)	1	(5)	167	(4)	141	(5)	0	(0)	83	(4)	77	(5)	0	(0)	124	(6)	88	(6)	0	(0)	**1441**	**(5.3)**
Unknown	2	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**2**	**(0.0)**
Missing	4	(0)	2	(0)	0	(0)	1	(0)	2	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(0)	0	(0)	**10**	**(0.0)**
Total	**7603**		**5185**		**19**		**3816**		**2964**		**10**		**2167**		**1681**		**1**		**1952**		**1595**		**1**		**26994**	

Table 9.1.2 Outcome at PICU discharge by age (age less than 1 year) and sex

Outcome	Age group (months) / Sex																						Total	
	<1						1-2						3-5						6-11					
	Male		Female		<>		Male		Female		<>		Male		Female		<>		Male		Female		<>			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Alive	2607	(93)	1678	(92)	9	(90)	1701	(96)	1164	(94)	3	(100)	1409	(95)	956	(94)	2	(100)	1446	(94)	1059	(95)	4	(100)	**12038**	**(94.0)**
Dead	206	(7)	144	(8)	1	(10)	69	(4)	68	(6)	0	(0)	67	(5)	56	(6)	0	(0)	92	(6)	58	(5)	0	(0)	**761**	**(5.9)**
Unknown	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**2**	**(0.0)**
Missing	0	(0)	1	(0)	0	(0)	1	(0)	1	(0)	0	(0)	2	(0)	0	(0)	0	(0)	1	(0)	0	(0)	0	(0)	**6**	**(0.0)**
Total	**2813**		**1823**		**10**		**1771**		**1233**		**3**		**1480**		**1012**		**2**		**1539**		**1117**		**4**		**12807**	

Note: In tables 9.1.1 and 9.1.2 percentages are column percentages.

Table 9.1.1 details outcome by age and sex for all age groups whilst table 9.1.2 summarises this information for children under 1 year of age at admission. The overall PICU mortality rate is 5%, increasing to 6% for those under 1 year.

Figure 9.1.1 PICU standardised mortality ratios by NHS trust with 99.9% control limits 2003: unadjusted

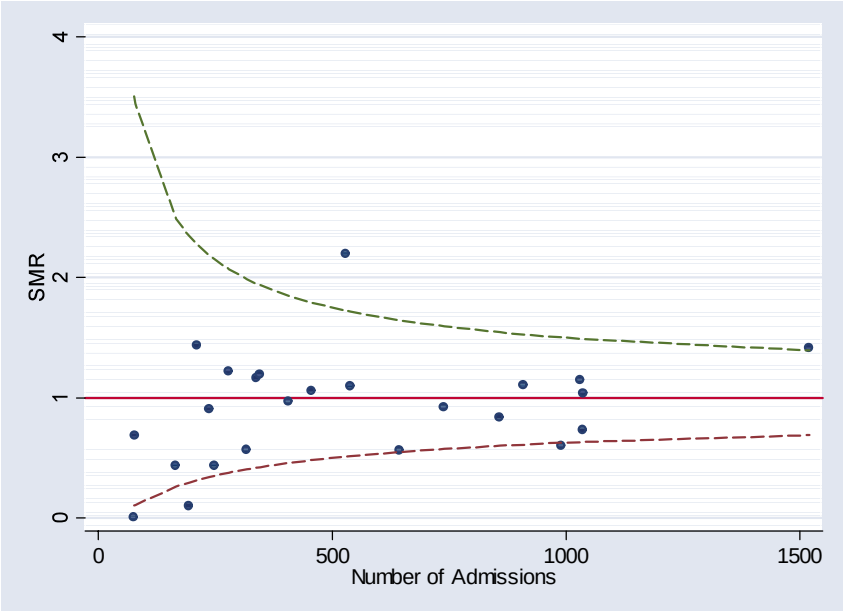


Figure 9.1.2 PICU standardised mortality ratios by NHS trust with 99.9% control limits 2003: risk adjusted (PIM)

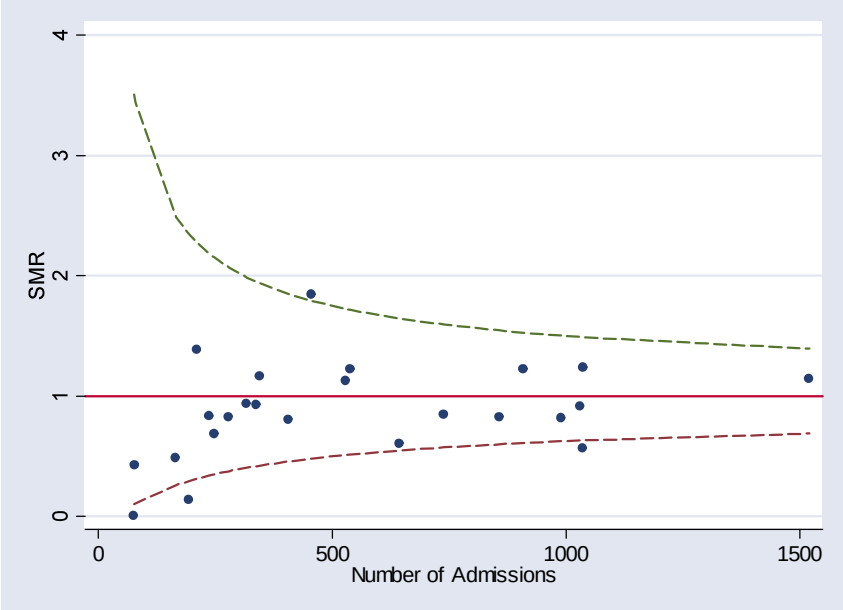


Figure 9.1.3 PICU standardised mortality ratios by NHS trust with 99.9% control limits 2004: unadjusted

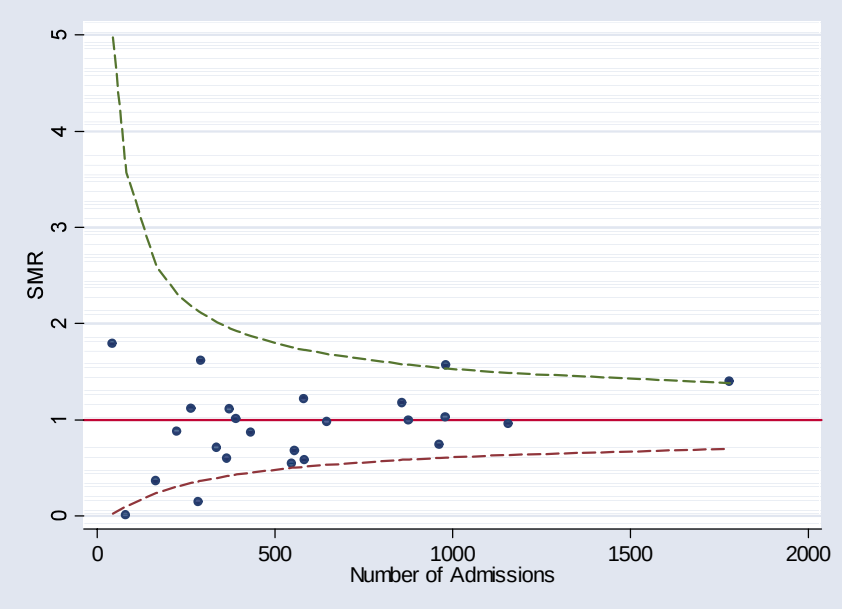


Figure 9.1.4 PICU standardised mortality ratios by NHS trust with 99.9% control limits 2004: risk adjusted (PIM)

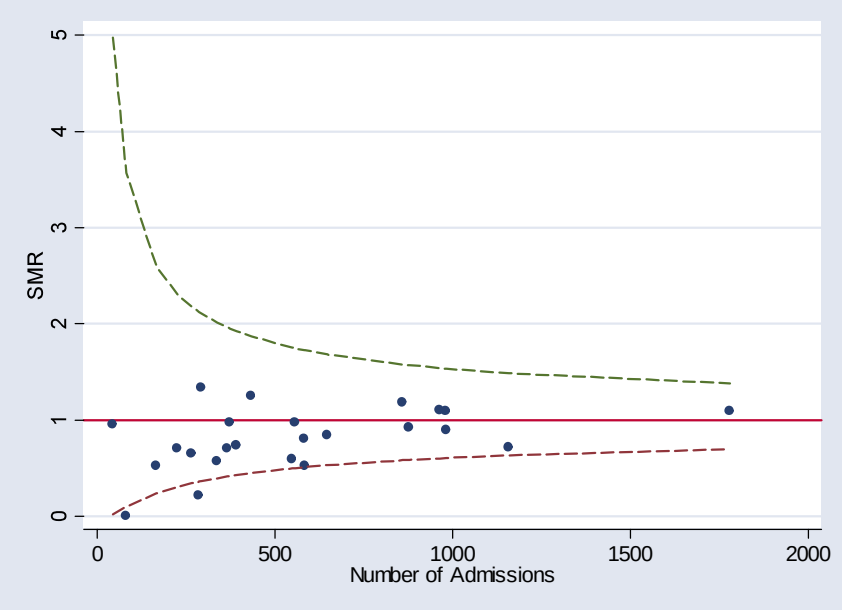


Figure 9.1.5 PICU standardised mortality ratios by NHS trust with 99.9% control limits 2003 - 2004 combined: unadjusted

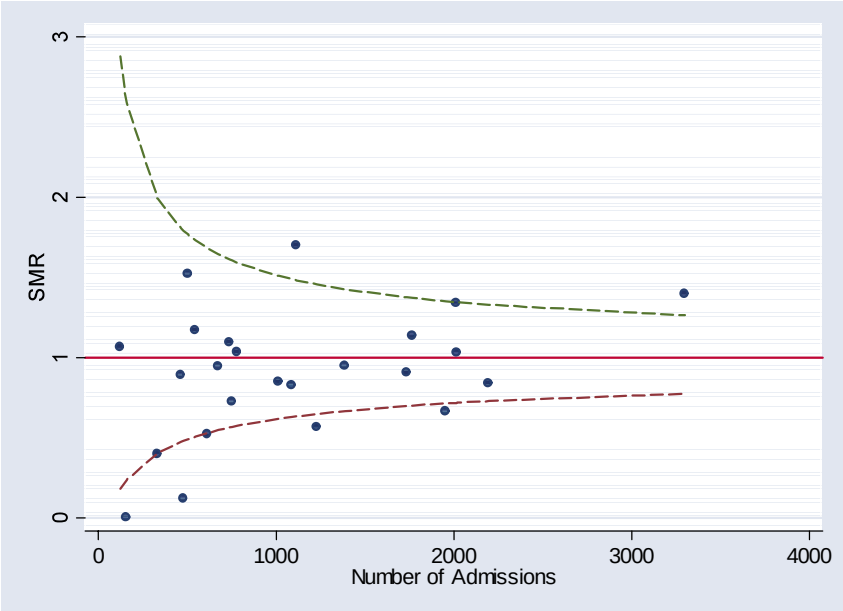
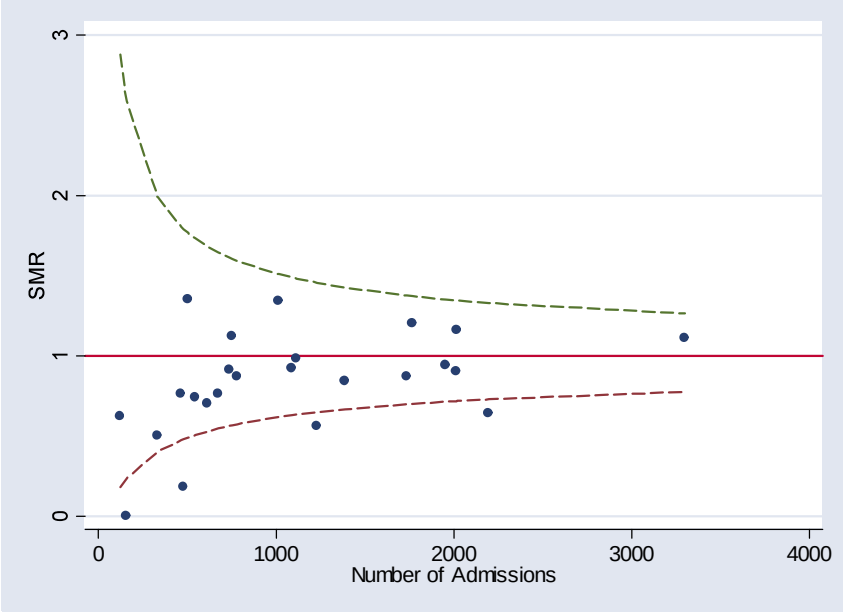


Figure 9.1.6 PICU standardised mortality ratios by NHS trust with 99.9% control limits 2003 - 2004 combined: risk adjusted (PIM)



It should be noted that the effect of risk adjustment varies between trusts, with some SMRs reducing and some increasing. In 2003, one trust has an SMR outside the upper control limit after adjustment. The possible reasons for this are explored in the discussion. For 2004 and 2003 - 2004 combined, no trust has an adjusted SMR above the 99.9% control limit.

Table 9.1.3 PICU mortality by primary diagnostic group (PIM adjusted) (2003 - 2004 combined)

Diagnostic group	Standardised Mortality Ratio					
	Unadjusted (95% CI)			Adjusted (95% CI)		
	SMR	Lower	Upper	SMR	Lower	Upper
Blood and lymphatic	1.15	0.56	2.06	1.54	0.75	2.77
Body wall and cavities	0.59	0.35	0.93	0.7	0.42	1.09
Cardiac	0.96	0.87	1.05	1.03	0.94	1.13
Endocrine/metabolic	2.41	1.88	3.01	1.32	1.03	1.65
Gastrointestinal	0.96	0.78	1.17	1.19	0.96	1.45
Infection	2.11	1.78	2.47	1.4	1.18	1.64
Multisystem	0.66	0.08	2.27	0.7	0.08	2.4
Musculoskeletal	0.13	0.05	0.28	0.35	0.13	0.77
Neurological	1.14	0.99	1.31	0.81	0.7	0.93
Oncology	0.83	0.6	1.12	1.36	0.98	1.83
Respiratory	0.78	0.7	0.87	0.64	0.57	0.72
Trauma	1.62	1.32	1.97	1.05	0.85	1.28
Other	0.97	0.76	1.21	0.93	0.73	1.16

Elevated adjusted SMRs for endocrine and metabolic conditions and infections, where the confidence intervals do not bound unity, indicate the higher risk of mortality in these groups (even accounting for expected probability of mortality predicted by PIM based on presenting physiology). The utility of using PIM-adjusted SMRs for diagnostic groups is addressed in the discussion.

9.2 Follow-up

Table 9.2.1 Status at 30 days post discharge from PICU by age and sex

Status	Age group (years) / Sex																								Total	
	<1						1-4						5-10						11-15							
	Male		Female		<>		Male		Female		<>		Male		Female		<>		Male		Female		<>			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Alive	3558	(50)	2405	(50)	8	(44)	1878	(51)	1442	(51)	8	(80)	1087	(52)	810	(50)	1	(100)	996	(54)	800	(53)	0	(0)	**12993**	**(50.9)**
Dead	102	(1)	61	(1)	1	(6)	33	(1)	36	(1)	1	(10)	30	(1)	14	(1)	0	(0)	18	(1)	11	(1)	0	(0)	**307**	**(1.2)**
Unknown	3348	(47)	2306	(47)	9	(50)	1565	(43)	1237	(44)	1	(10)	857	(41)	696	(43)	0	(0)	743	(41)	640	(42)	1	(100)	**11403**	**(44.6)**
Missing	155	(2)	85	(2)	0	(0)	172	(5)	106	(4)	0	(0)	110	(5)	84	(5)	0	(0)	71	(4)	55	(4)	0	(0)	**838**	**(3.3)**
Total	**7163**		**4857**		**18**		**3648**		**2821**		**10**		**2084**		**1604**		**1**		**1828**		**1506**		**1**		**25541**	

Table 9.2.2 Status at 30 days post discharge from PICU by age (age less than 1 year) and sex

Status	Age group (months) / Sex																								Total	
	<1						1-2						3-5						6-11							
	Male		Female		<>		Male		Female		<>		Male		Female		<>		Male		Female		<>			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Alive	1230	(47)	772	(46)	3	(33)	866	(51)	607	(52)	1	(33)	740	(53)	492	(51)	1	(50)	722	(50)	534	(50)	3	(75)	**5971**	**(49.6)**
Dead	44	(2)	21	(1)	1	(11)	20	(1)	14	(1)	0	(0)	20	(1)	13	(1)	0	(0)	18	(1)	13	(1)	0	(0)	**164**	**(1.4)**
Unknown	1298	(50)	873	(52)	5	(56)	766	(45)	524	(45)	2	(67)	619	(44)	432	(45)	1	(50)	665	(46)	477	(45)	1	(25)	**5663**	**(47.0)**
Missing	35	(1)	12	(1)	0	(0)	49	(3)	19	(2)	0	(0)	30	(2)	19	(2)	0	(0)	41	(3)	35	(3)	0	(0)	**240**	**(2.0)**
Total	**2607**		**1678**		**9**		**1701**		**1164**		**3**		**1409**		**956**		**2**		**1446**		**1059**		**4**		**12038**	

Note: In tables 9.2.1 and 9.2.2 percentages are column percentages.

Outcome at 30 days (post discharge from PICU) is given in tables 9.2.1 and 9.2.2 by age and sex. With approximately 50% of admissions having an 'unknown' or 'missing' status at discharge no inference can be made from this data other than the apparent difficulty in collecting it.

References

1 Shann F, Pearson G, Slater A, Wilkinson K, Paediatric index of mortality (PIM): a mortality prediction model for children in intensive care. Intensive Care Med 1997; 23:201-207.

2 Spiegelhalter D. Funnel plots for institutional comparison. Quality and Safety in Health Care 2002;11(4):390-391.

3 Stark J, Gallivan S, Lovegrove J *et al.* Mortality rates after surgery for congenital heart defects in children and surgeons' performance. Lancet 2000;355:1004-1007.

4 Tekkis PP, McCulloch P, Steger AC, Benjamin IS, Poloniecki JD. Mortality control charts for comparing performance of surgical units: validation study using hospital mortality data. BMJ 2003;326.

10 EPIDEMIOLOGY OF PAEDIATRIC INTENSIVE CARE

10.1 Background

Contemporary research and audit in PIC does not routinely collect population-based epidemiological data. This is most probably due to the specific focus of individual studies, limited resources and the difficulties encountered in coordinating multi-centre studies which leave little scope for collecting this type of data. Many of these studies may have benefited from comparative epidemiological data collected at a national level - as Shann (p6) notes:

'*...epidemiology has taught us the importance of looking at populations – to use the perspective of the community, rather than that of individual institutions or groups of institutions. To understand the epidemiology of PIC, we need to know what happened to every child from a defined population who received intensive care…'*[1]

In an international context, there are a few attempts to characterise PIC services such as in Spain[2] and the Netherlands[3,4] and the establishment of the ANZPICS registry in Australia and New Zealand.[5,6] The latter has provided data in a collaborative project to develop PIM.[7,8]

In the UK, however, there are no population-based studies describing the epidemiology of children admitted for intensive care in the published literature, either at regional or national level. Most epidemiological information that is available is found within reports of specific or localised research and audit in PIC. This is presented in the context of specific clinical themes such as drug and intervention trials (or their feasibility); clinical techniques and case studies; disease subsets such as meningitis or sepsis; sub-populations such as those who are immunocompromised or have other specific co-morbidities; outcome measures including mortality indices and morbidity; analyses of organisational structure and service delivery and the cost of providing PIC.

Existing sources of data on the epidemiology of PIC in the UK do not, therefore, provide information which covers the entire patient population. In addition, the lack of comparative data on activity across all units and outcome data restricts necessary planning and commissioning of PIC services and impedes the planning of clinical intervention trials, research, or performance assessment. Pearson has highlighted the need for systematic collection of a core data set that will enable national monitoring of activity and which uses an appropriate risk-adjustment model for mortality.[9] This has become a reality for England and Wales with the establishment of PICANet. With

future participation of PICUs in Scotland and Northern Ireland PICANet will hold information on all PICU activity in the UK. PICANet also shares some common data definitions with the ANZPICS registry and will hopefully have close links with a proposed PIC audit database in the Netherlands to enable international comparisons (Gemke, personal communication, 2005).

The data presented below constitute a summary description of the epidemiology of children receiving intensive care in English and Welsh PICUs nationally and by SHA in England and HB in Wales.

10.2 Methods

Age and sex specific prevalence rates with 95% Poisson confidence intervals for admission to PICUs in England and Wales have been calculated using population counts from the 2001 Census[10] overall and by SHA and HB together with age-sex standardised prevalence rates for the childhood population (less than 16 years).

Children were allocated to an SHA / HB using their residential address at admission. Addresses were validated using AFD address validation software to obtain a correct postcode.[11] To carry out this kind of validation it is essential to have at least part of the address text – a postcode on its own is insufficient. Using the AFPD, postcodes were linked to SHA / HB.[12] Population counts from the 2001 Census[10] were used to construct the denominator populations.

As the Pan-Thames consortium units did not start contributing data to PICANet until March 2003 numbers of admissions for January and February 2003 have been imputed by deriving age-sex weighted estimates from the other contributing units.

Table 10.2.1 Age specific prevalence rates (per 100 000 per year) for admissions to PIC in England and Wales, 2003 - 2004

		Population	2003 (95% CI†)			2004 (95% CI†)		
Sex	Age group (years)	(2001 Census)	Rate *	Lower	Upper	Rate*	Lower	Upper
Male	**<1**	299495	1265	1224	1305	1332	1291	1373
	1-4	1283386	154	147	161	150	143	156
	5-10	2054488	49	46	52	42	39	44
	11-15	1735486	68	64	72	67	63	71
Female	**<1**	287826	905	870	939	938	903	973
	1-4	1224673	125	119	132	122	116	128
	5-10	1955812	39	36	42	37	34	39
	11-15	1650642	57	54	61	57	53	60
Total		**10491808**	**132**	**129**	**134**	**131**	**129**	**134**

* Rate per 100 000 population per year

† Confidence Interval

Table 10.2.1 gives age-sex specific prevalence rates per 100 000 childhood population per year for 2003 and 2004 in England and Wales based on 2001 Census population

data, together with 95% Poisson confidence intervals. It should be noted that prevalence is based on admissions rather than individuals and will include some children who have been readmitted. These data summarise admission prevalence for ALL children treated in PICUs in England and Wales including children from overseas and those from Scotland and Northern Ireland. It does not include children from England and Wales admitted in Scotland or Northern Ireland.

The tabulated prevalence rates are the first available figures on the burden of PICU admissions relative to the underlying childhood population. The distribution of the rates, highest in those under 1 year and lowest in those over 10 years broadly reflects the numbers of admissions (see table 5.2.1). The prevalence rates for the two years 2003 and 2004 are strikingly similar, with little variation between years either in total or by age group. This provides a firm base for large scale planning services in the future.

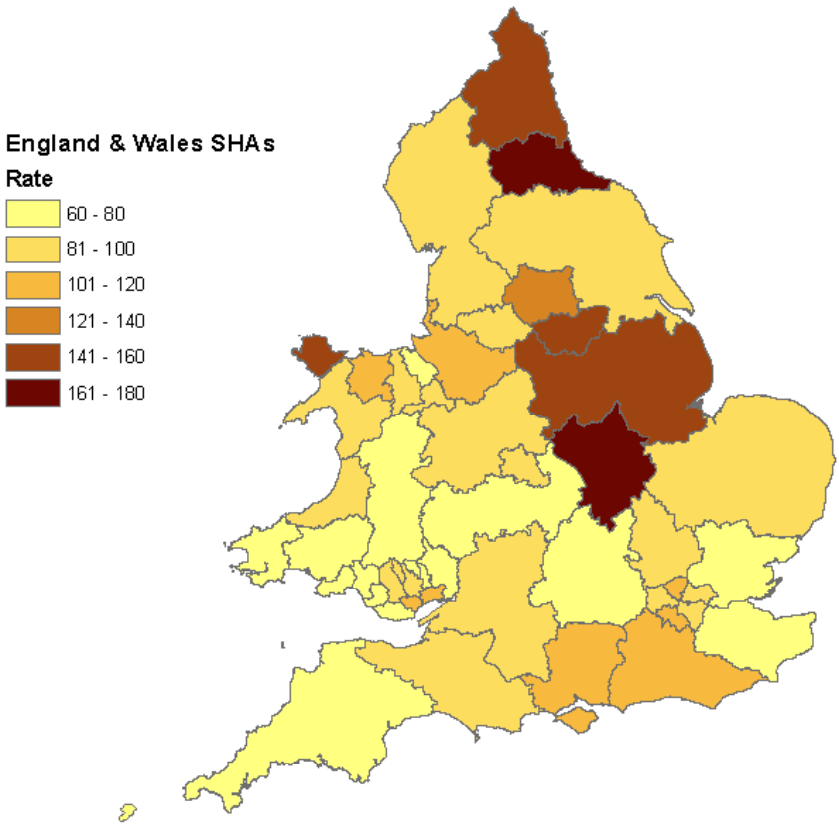
Table 10.2.2 Age-sex standardised prevalence rates (per 100 000 per year) for admission to PIC by SHA in England and HB in Wales, 2003 - 2004

SHA/Health Board	Population	2003 (95% CI†)			2004 (95% CI†)		
	(2001 Census)	Rate	Lower	Upper	Rate	Lower	Upper
Monmouthshire	**16963**	114	61	167	37	7	67
Gwynedd	**22435**	88	50	126	82	46	118
Pembrokeshire	**22978**	94	54	134	48	19	77
Ceredigion	**12016**	88	36	140	92	37	146
Neath Port Talbot	**26323**	89	52	126	68	37	100
Swansea	**42993**	55	33	78	93	64	122
Conwy	**20271**	113	66	161	102	57	146
Cardiff	**63048**	112	86	138	115	89	142
Rhondda Cynon Taff	**48320**	104	75	132	86	60	112
Anglesey	**13110**	171	100	243	140	75	204
Caerphilly	**36413**	89	58	120	100	67	133
Bridgend	**26400**	64	33	94	80	46	114
Wrexham	**25160**	114	72	155	74	40	107
Flintshire	**29620**	86	52	119	65	35	94
Vale of Glamorgan	**25571**	64	32	95	68	35	101
Carmarthenshire	**33806**	78	48	108	62	35	89
Merthyr Tydfil	**12130**	122	56	188	56	11	102
Newport	**30938**	111	73	148	107	70	144
Denbighshire	**18324**	101	54	148	95	50	140
Blaenau Gwent	**14764**	80	32	128	69	26	113
Torfaen	**19396**	57	21	93	70	30	111
Powys	**23352**	73	37	109	55	24	87
Norfolk, Suffolk and Cambridgeshire	**418674**	81	72	89	94	84	103
Bedfordshire and Hertfordshire	**338923**	79	70	89	89	80	99
Essex	**325061**	77	67	86	75	66	85
North West London	**326709**	93	83	103	93	83	103
North Central London	**232651**	103	90	115	115	102	128
North East London	**337428**	83	73	92	103	92	113
South East London	**305152**	78	69	88	85	75	95
South West London	**250991**	93	82	105	117	104	130
Northumberland, Tyne & Wear	**267030**	137	122	151	158	142	173
County Durham and Tees Valley	**230272**	163	146	180	188	170	206
N & E Yorkshire and N Lincolnshire	**318795**	99	88	110	89	78	100
West Yorkshire	**442044**	124	113	134	118	108	128
Cumbria and Lancashire	**385408**	83	73	92	86	77	96
Greater Manchester	**527416**	79	71	86	91	83	99
Cheshire & Merseyside	**479512**	113	104	123	115	105	125
Thames Valley	**431744**	77	69	85	71	63	79
Hampshire and Isle of Wight	**349806**	99	89	110	103	92	114
Kent and Medway	**327518**	61	53	70	69	59	78
Surrey and Sussex	**484382**	115	105	124	117	108	127
Avon, Gloucestershire and Wiltshire	**429384**	92	83	101	93	84	102
South West Peninsula	**290448**	65	56	75	53	44	62
Dorset and Somerset	**219359**	95	81	108	95	82	109
South Yorkshire	**254539**	159	143	174	152	137	167
Trent	**515591**	142	131	152	140	129	150
Leicestershire, Northamptonshire and Rutland	**320588**	158	145	172	169	155	183
Shropshire and Staffordshire	**295907**	101	89	112	97	86	108
Birmingham and the Black Country	**497644**	100	91	108	88	80	96
West Midlands South	**303274**	84	74	95	72	62	82

In table 10.2.2, figures do not include data on the 7% of children with no residential address provided, the 2% who came from abroad or for 11 children whose address could not be validated. The national prevalence of 132 per 100 000 per year given in table 10.2.1 includes all admissions and cannot be used for comparison with the SHA / HB figures.

The stable rates seen in table 10.2.1 for England and Wales as a whole, mask some interesting differences when looking at a smaller geographical scale. The data clearly indicate wide variation in 2 dimensions. Firstly, prevalence of admission rates varies between SHA / HBs (from 55 per 100 000 per year in Swansea to 171 per 100 000 per year in Anglesey) and, secondly, for the same area, differences can be seen by year. For example, in Powys the rates decrease from 73 per 100 000 per year in 2003 to 55 per 100 000 per year, whereas in South West London the rates increase from 93 per 100 000 per year to 117 per 100 000 per year. This heterogeneity cannot be fully explained by the size or age structure of the population, as the prevalence rates are calculated by standardising for age and sex and they inherently allow for the size of the SHA / HB population. However, the confidence intervals around the prevalence rates are generally quite wide indicating the rates are based on relatively small numbers and the effect of just a few additional cases could be considerable.

Figure 10.2.1 Age-sex standardised prevalence rates (per 100 000 per year) for admission to PIC by SHA in England and HB in Wales, 2003 - 2004



The data from table 10.2.2 have been illustrated graphically in figure 10.2.1. This kind of heterogeneity observed in cartographically presented data should be interpreted with care but provides a useful tool for formulating further analyses which will include more sophisticated statistical modelling.

References

1 Shann F. Where do all the children go? Intensive Care Med 2000; 26:6-7.

2 López-Herce J, Sancho L, Martinón JM, the Spanish Society of Paediatric Intensive Care. Study of paediatric intensive care units in Spain. Intensive Care Med 2000; 26:62-68.

3 Gemke RJBJ, Bonsel GJ, McDonnell J, van Vught AJ. Patient characteristics and resource utilisation in paediatric intensive care. Arch Dis Child 1994; 71: 291–296.

4 Gemke RJBJ, Bonsel GJ, the Pediatric Intensive Care Assessment of Outcome (PICASSO) study group. Comparative assessment of pediatric intensive care: a national multicenter study. Crit Care Med 1995; 23:238–45.

5 Slater A, Shann F, McEniery J, ANICS Study Group. The ANZPIC registry diagnostic codes: a system for coding reasons for admitting children to intensive care. Intensive Care Med 2003 29(2):271-277.

6 Australian New Zealand Intensive Care Society. Report of the Australian and New Zealand Paediatric Intensive Care Registry – 2003. http://www.anzics.com.au/paed/index.htm (accessed 16 Mar 2005).

7 Shann F, Pearson G, Slater A, Wilkinson K, Paediatric index of mortality (PIM): a mortality prediction model for children in intensive care. Intensive Care Med 1997; 23:201-207.

8 Shann F, Slater A, Pearson G. PIM 2: a revised version of the Paediatric index of mortality. Intensive Care Med 2003; 29:278-285.

9 Pearson GA. Paediatric intensive care: out of commission. Critical Care 2002; 6:387-388.

10 Office for National Statistics. *2001 Census : Census Area Statistics (England and Wales)* [computer file]. ESRC/JISC Census Programme, Census Dissemination Unit, MIMAS (University of Manchester).

11 AFD Postcode Plus version 6.4.16. AFD Software Ltd, Old Post Office Lane, West Quay, Ramsey, ISLE OF MAN, IM8 1RF, UK, 2005.

12 Office for National Statistics, All Fields Postcode Directory August 2004 [computer file]. ESRC/JISC Census Programme, Census Dissemination Unit, MIMAS (University of Manchester). © Crown Copyright 2004.

11 CHILDREN RECEIVING CARE IN ADULT INTENSIVE CARE UNITS

It is widely recognised that some children requiring intensive care are treated in settings other than PICUs.[1, 2] This second PICANet report provides preliminary data for children treated in AICUs in 2003. This data was provided from 2 sources. The majority of the data has come from ICNARC who provide an independent, national resource for the monitoring and evaluation of adult intensive care in the UK. Seventy-four percent of AICUs participate in this data collection exercise. Further data have been provided by SWACIC, which also feeds directly into ICNARC.

11.1 Children treated in adult units in 2003

Following the receipt of signed consent from the unit director of each AICU, data was transferred to PICANet for all admissions of children aged less than 16 years. This data was limited to demographic and admission variables.

Table 11.1.1 Admission of children <16 years to AICUs by age and sex, England, 2003

Sex	Age group (years) <1		1-4		5-10		11-15		Total	
	n	%	n	%	n	%	n	%	n	%
Male	86	(23)	123	(33)	79	(21)	83	(22)	**371**	**(58.6)**
Female	41	(17)	76	(31)	51	(21)	78	(32)	**246**	**(38.9)**
Unknown/Missing	2	(13)	9	(56)	1	(6)	4	(25)	**16**	**(2.5)**
Total	**129**	**(20.4)**	**208**	**(32.9)**	**131**	**(20.7)**	**165**	**(26.1)**	**633**	

Six hundred and thirty-three children aged under 16 were admitted to AICUs in England during 2003. Children aged between 1 - 4 years old were more frequently admitted (n=308, 33%) than any other age group. Approximately 59% of all admissions were male.

Table 11.1.2 Admission of children to AICUs by age by month of admission, England, 2003

	Age group (years) <1		1-4		5-10		11-15		Total	
	n	%	n	%	n	%	n	%	n	%
2003 January	19	(34)	21	(38)	7	(13)	9	(16)	**56**	**(8.8)**
February	11	(18)	19	(30)	18	(29)	15	(24)	**63**	**(10.0)**
March	9	(13)	28	(40)	17	(24)	16	(23)	**70**	**(11.1)**
April	14	(19)	28	(39)	17	(24)	13	(18)	**72**	**(11.4)**
May	9	(20)	8	(18)	14	(31)	14	(31)	**45**	**(7.1)**
June	8	(19)	11	(26)	10	(33)	14	(33)	**43**	**(6.8)**
July	6	(18)	14	(41)	7	(21)	7	(21)	**34**	**(5.4)**
August	5	(11)	11	(23)	16	(34)	15	(32)	**47**	**(7.4)**
September	5	(12)	16	(38)	8	(19)	13	(31)	**42**	**(6.6)**
October	9	(16)	21	(37)	8	(14)	19	(33)	**57**	**(9.0)**
November	12	(26)	16	(34)	8	(17)	11	(23)	**47**	**(7.4)**
December	22	(39)	15	(26)	1	(2)	19	(33)	**57**	**(9.0)**
Total	**129**	**(20.4)**	**208**	**(32.9)**	**131**	**(20.7)**	**165**	**(26.1)**	**633**	

April was the busiest month for children being admitted to AICUs and July was the quietest. For admissions aged less than 1 year, December was the busiest month

(17%). For school-aged children (5 - 15 years), February and March were the busiest months with 22% of their admissions being in these months.

Table 11.1.3 Admission of children to AICUs by age by diagnostic group, England, 2003

Diagnostic group	Age group (years)								Total	
	<1		1-4		5-10		11-15			
	n	%	n	%	n	%	n	%	n	%
Blood/lymphatic	2	(2)	0	(0)	0	(0)	1	(1)	**3**	**(0.5)**
Body wall and cavities	0	(0)	0	(0)	0	(0)	1	(1)	**1**	**(0.2)**
Cardiovascular	10	(8)	6	(3)	2	(2)	3	(2)	**21**	**(3.3)**
Endocrine/metabolic	1	(1)	7	(3)	8	(6)	12	(7)	**28**	**(4.4)**
Gastrointestinal	7	(5)	3	(1)	5	(4)	5	(3)	**20**	**(3.2)**
Infection	7	(5)	17	(8)	5	(4)	5	(3)	**34**	**(5.4)**
Musculoskeletal	6	(5)	1	(1)	2	(2)	9	(6)	**18**	**(2.8)**
Neurological	27	(21)	76	(37)	52	(40)	51	(31)	**206**	**(32.5)**
Oncology	2	(2)	4	(2)	1	(1)	3	(2)	**10**	**(1.6)**
Other	4	(3)	18	(9)	4	(3)	22	(13)	**48**	**(7.6)**
Respiratory	62	(48)	70	(34)	41	(31)	32	(19)	**205**	**(32.4)**
Trauma	1	(1)	6	(3)	11	(8)	21	(13)	**39**	**(6.2)**
Total	**129**	**(20.4)**	**208**	**(32.9)**	**131**	**(20.7)**	**165**	**(26.0)**	**633**	

Approximately one third (33%) of children admitted to AICUs had a neurological diagnosis and a further third (32%) were admitted for respiratory reasons. Nearly one half (48%) of all admissions to AICUs for children aged less than 1 year were for respiratory problems. In older children the most frequent diagnostic category was neurological: 37% for children aged 1 - 4 years, 40% for 5 - 10 years and 31% for 11 - 15 years.

Table 11.1.4 Mortality of children admitted to AICUs by diagnostic group and age, England, 2003

Diagnostic group	Age group (years)								Total	
	<1		1-4		5-10		11-15			
	n	%	n	%	n	%	n	%	n	%
Cardiovascular	2	(25)	0	(0)	0	(0)	0	(0)	**2**	**(7.7)**
Endocrine/metabolic	0	(0)	0	(0)	1	(14)	0	(0)	**1**	**(3.8)**
Gastrointestinal	1	(13)	0	(0)	1	(14)	0	(0)	**2**	**(7.7)**
Infection	1	(13)	1	(25)	1	(14)	0	(0)	**3**	**(11.5)**
Neurological	4	(50)	0	(0)	3	(43)	5	(71)	**12**	**(46.2)**
Other	0	(0)	1	(25)	0	(0)	1	(14)	**2**	**(7.7)**
Respiratory	0	(0)	2	(50)	1	(14)	1	(14)	**4**	**(15.4)**
Total	**8**	**(30.8)**	**4**	**(15.4)**	**7**	**(26.9)**	**7**	**(26.9)**	**26**	

Twenty-six children admitted to AICUs died on the unit. This represents 4% of all children admitted to AICUs. Nearly half of these deaths (n=12, 46%) had a neurological diagnosis.

Table 11.1.5 Discharge destination for children admitted to AICUs for care, England, 2003

Discharge destination	Total	
	n	%
PICU	231	(36.5)
Other hospital area	376	(59.4)
Died	26	(4.1)

Over one third (37%) of children admitted to an AICU were discharged to a PICU.

Table 11.1.6 Length of stay for surviving children admitted to AICUs for care, England, 2003

	Age group (years)			
	<1	**1-4**	**5-10**	**11-15**
Median length of stay	2	2	2	2
Range (days)	1 to 22	1 to 19	1 to 33	1 to 21

The median length of stay for all ages of children admitted to an AICU was 2 days.

Total length of stay varied between 1 - 33 days.

References

1 A Bridge to the Future Nursing Standards, Education and Workforce Planning in Paediatric Intensive Care. Report of the Chief Nursing Officer's Taskforce. NHS Executive1997.

2 Paediatric Intensive Care "A Framework for the Future", Report from the National Coordinating Group on Paediatric Intensive Care to the Chief Executive of the NHS Executive. London, NHSE, 1997.

12 STAFFING

The delivery of PIC is dependent upon a trained, competent workforce. Nurses provide the largest number of staff within this speciality. In 1997 the report of the Chief Nursing Officer's Taskforce[1] published figures quantifying the total numbers of nurses working within PIC in England. One of the aims of PICANet is to facilitate strategic health care planning and quantify resource requirements. One aspect of this is the monitoring of staffing levels within PICUs.

12.1 Staffing survey

Staff survey questionnaires (see Appendix L) were developed in 2003 to enable PICANet to obtain data on levels of nursing staff. Data collected in September 2003 and March 2004 were included in the first annual PICANet report.[2] In October 2004 a revised questionnaire was sent to the lead doctor and the senior nurse in each participating PICU. As the response rate from previous staffing questionnaires was poor, units were offered a visit from the research nurse to facilitate the return of the questionnaires and to ensure the completeness of all data items (although few units asked for this).

Medical and nursing staff were contacted by post, email or telephone (and were occasionally visited) to encourage the timely completion and return of the questionnaires. After 4 months all the nursing questionnaires had been returned and 96% of the medical questionnaires, which is an improvement on previous staffing surveys (see table 12.1.1).

Table 12.1.1 Response rate from 24 NHS trusts to the PICANet staffing survey

Month of survey	Doctors returning forms (%)	Nurses returning forms (%)
September 2003	92	92
March 2004	71	79
October 2004	96	100

In the first 2 staffing surveys there were problems with the completeness of the data. In September 2003, 6 NHS trusts (25%) returned questionnaires that were incomplete and in March 2004, 7 NHS trusts (29%) returned incomplete data. In the most recent round of data collection, although all returned questionnaires were complete, there were problems with misinterpretation of a number of questions. Clarification of the correct responses to these questions was carried out over the telephone.

1 Nurse Staffing

Table 12.1.2 Comparison of the numbers and proportions of nurses by their level of paediatric qualification. Bridge to the Future report compared to PICANet

	Qualified nurses	Children's trained nurses	Percentage of children's trained nurses	Percentage of children's trained nurses with additional intensive care
Bridge to the Future report (survey May 1996)	793.8	677.6	85	48
Bridge to the Future report (survey January 1997)	902	796.4	88	47
PICANet survey October 2004	1811	1607	89	51

Table 12.1.2 shows the numbers of all qualified nurses and specially trained children's nurses identified as working in PICUs. The percentage of children's nurses with additional training in PIC (ENB 415) is also shown. The figures are taken from the Bridge to the Future report 1997[1] and the October 2004 PICANet staffing survey. The Bridge to the Future figures are based upon 21 PICUs within 21 NHS trusts. An additional 3 NHS trusts were included in the October 2004 PICANet figures.

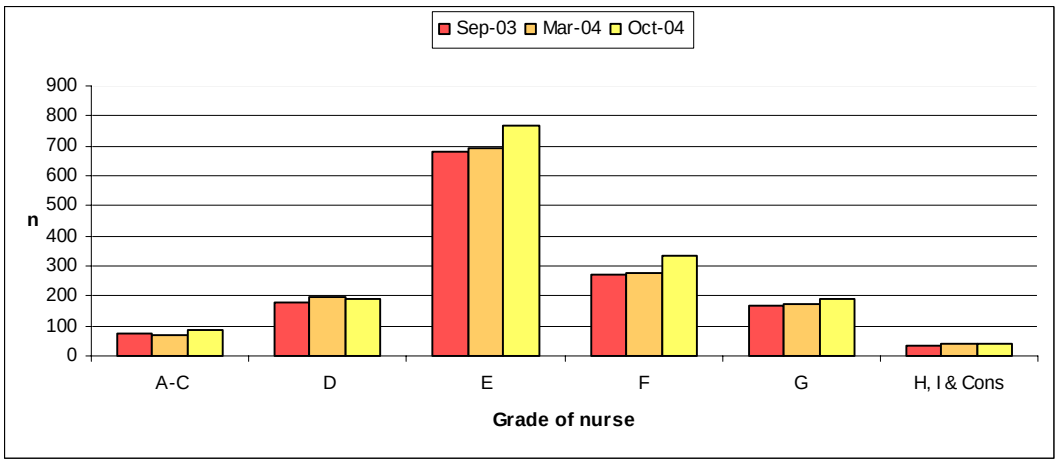
Table 12.1.3 Proportion of nursing staff by grade

	Nurse grade / Month														
	A-C			D-E			F			G			H-I		
NHS trust	**Sep-03**	**Mar-04**	**Oct-04**	**Sep-03**	**Mar-04**	**Oct-04**	**Sep-03**	**Mar-04**	**Oct-04**	**Sep-03**	**Mar-04**	**Oct-04**	**Sep-03**	**Mar-04**	**Oct-04**
A	0	0	0	56	64	64	27	23	20	15	11	12	2	2	4
B	0	0	0	47	50	43	40	42	43	7	8	7	7	0	7
C	-	-	5	-	-	67	-	-	26	-	-	2	-	-	0
D	5	5	3	57	58	61	18	19	17	16	15	18	4	3	3
E	5	3	4	54	56	57	27	25	23	12	13	13	2	3	3
F	6	8	4	57	56	66	12	16	9	19	16	16	4	4	3
H	-	-	10	-	-	54	-	-	15	-	-	13	-	-	8
I	10	4	10	60	65	54	18	16	17	11	14	18	1	1	2
J	0	0	0	0	0	0	80	60	50	20	40	50	0	0	0
K	9	10	10	65	64	63	12	14	15	11	11	11	2	1	2
L	-	10	7	-	64	60	-	12	14	-	12	16	-	2	1
M	5	5	5	56	59	59	19	20	21	17	15	14	2	2	2
N	-	-	2	-	-	59	-	-	24	-	-	16	-	-	4
O	3	4	1	65	68	67	17	16	18	12	11	12	3	1	1
P	-	-	4	-	-	56	-	-	27	-	-	9	-	-	3
Q	4	4	5	56	59	62	22	22	23	11	8	8	7	7	3
R	6	6	7	68	68	63	16	16	17	9	8	11	1	3	3
S	3	0	6	74	69	64	24	25	21	6	6	0	0	0	2
T	14	14	8	61	53	65	11	17	14	8	7	5	6	7	8
U	-	-	2	-	-	51	-	-	33	-	-	11	-	-	4
V	5	5	5	66	67	68	17	16	15	10	9	9	2	2	3
W	0	0	0	78	78	76	14	14	16	7	7	7	1	1	1
X	9	7	7	41	53	55	29	21	20	18	16	16	3	2	2

Note: A dash indicates that no data was returned.

As expected the majority of nurses employed on PICUs are grades D or E. NHS trust G have no nursing staff employed specifically for PIC patients. Nurses are employed by the critical care department for this trust and provide intensive care on the AICU. For this reason they have been excluded from the analysis.

Figure 12.1.1 The percentage of nursing staff (WTE) as a percentage of each NHS trusts' total number of PIC nursing staff (October 2004)



An increase of 85.0 WTE E grade nurses was observed between 2003 - 2004. Similarly there were increases in F and G grades nurses by 65.1 WTE and 24.1 WTE respectively. There was little change in the overall WTE of D grade nurses or unqualified nursing staff at grades A - C. Total WTE managerial level nurses at grades H, I and at Nurse Consultant level also remained relatively static over this period.

Figure 12.1.2 WTE qualified nursing staff by bed by NHS trust (March and October 2004)

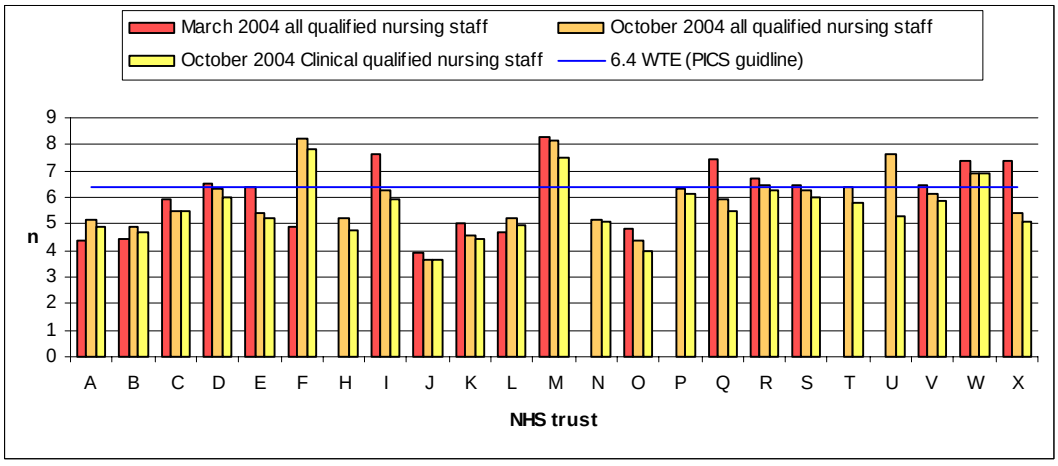
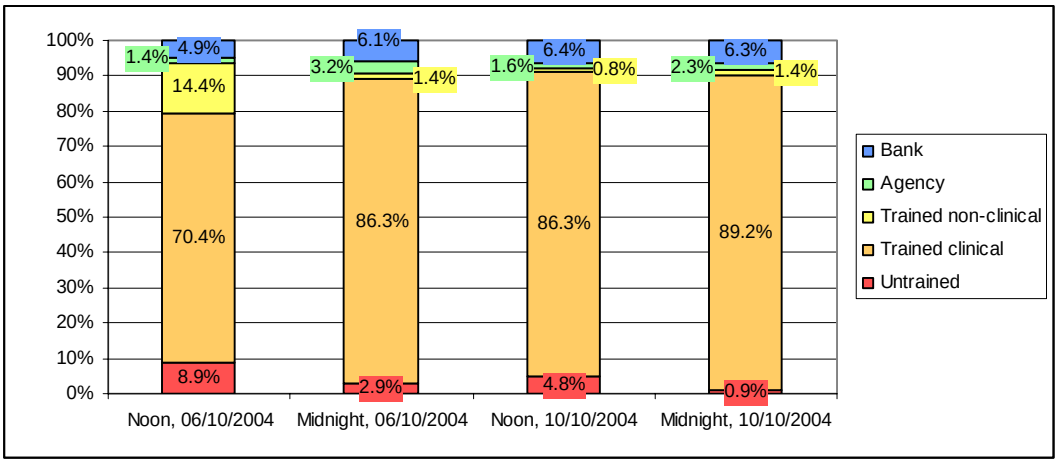


Figure 12.1.2 shows the total number of WTE qualified nursing staff per funded intensive care bed on the PICU (beds identified as high dependency are excluded from this analysis). Data for all qualified nursing staff are shown for March and October 2004. These figures include non-clinical staff such as educators and retrieval co-ordinators who are not clinically active full time on the PICU. A more accurate picture of clinical nursing activity by trust is shown in the third column (October 2004) where non-clinical staff have been excluded. PICS guidelines[3] recommend that each PIC bed

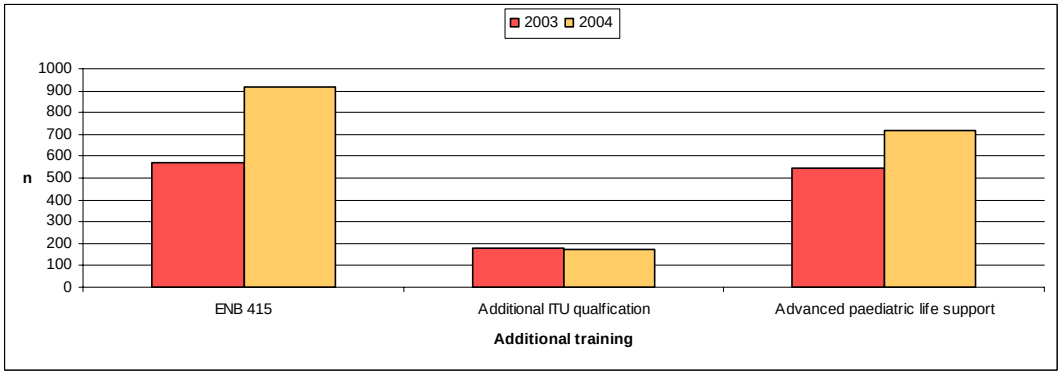
should be staffed by 6.4 WTE qualified nurses. This guideline is indicated on the graph and shows that many PICUs do not currently meet this recommendation.

Figure 12.1.3 Nursing staff by clinical and qualification status working on PICU for 4 snapshot time periods (October 2004), England & Wales



The staffing questionnaires collected data on the numbers of staff working during 4 snapshot time periods (a specified weekday at noon and midnight, and a specified Sunday at noon and midnight). For all 4 time snapshots the majority of staff working were trained clinical nursing staff (70% - 90%). The use of bank and agency nursing staff remained constant (1% - 4% from agencies and 4% - 7% from the bank). Overall, there were more untrained staff on duty at noon than midnight. The number of trained non-clinical staff such as nurse educators and retrieval co-ordinators were greater on the day shift during the week than at any other time (14% compared with 1%).

Figure 12.1.4 Number of nurses in PICUs with additional training, England & Wales 2003 - 2004



From 2003 to 2004 there has been a 38% increase in the number of nursing staff who attended an ENB 415 course (or additional in-house PIC training). The ENB 415 course is a professionally recognised course in PIC. The proportion of nurses with

additional intensive care qualifications such as AIC, neuromedical and neurosurgical, and paediatric cardiothoracic courses remained the same at around 10%. The proportion of nurses undertaking additional advanced life support training increased by 24%. These courses include education and assessment in theoretical and practical issues relating to minimum standards of knowledge and ability in paediatric resuscitation. However, they do not lead to a recognised qualification and do not measure the level of skill achieved by an individual. In addition, staff may attend in-house resuscitation training days, in line with the PICS Standards, which state that all doctors and nurses concerned with the care of critically ill children should have their skills formally validated.[3]

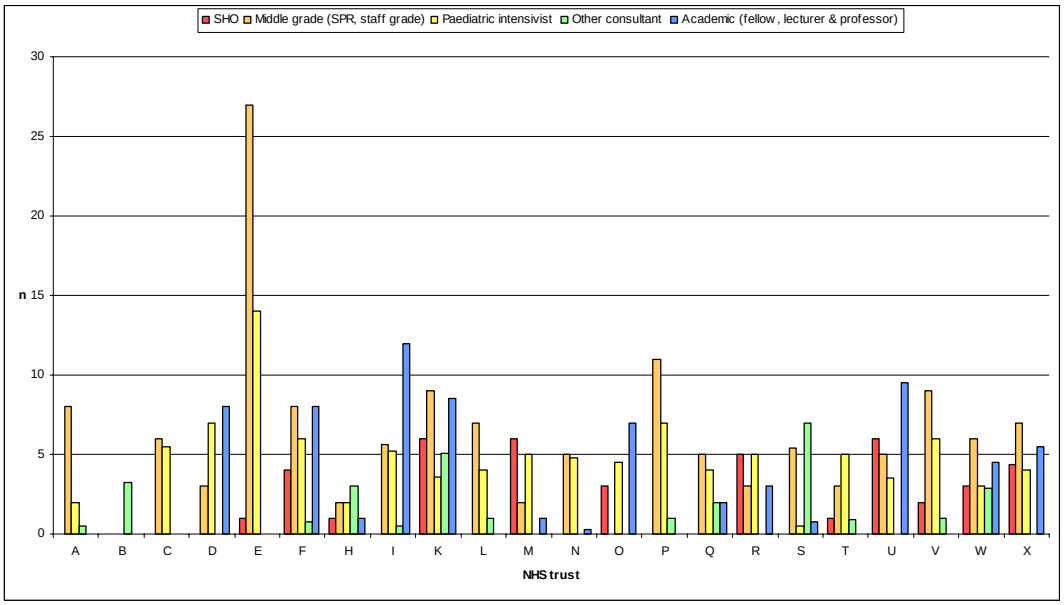
2 Medical staffing

The completion and return of the medical staffing questionnaires improved in October 2004 with 92% (n=24) of NHS trusts returning data. However, the time taken for their return was lengthy and their completion was poor. Nevertheless, rigorous follow-up by telephone and email resulted in improved data quality.

PICS Standards[3] recommend that PICUs providing Lead Centre PIC should have 24-hour cover from a consultant with approved training in PIC. In addition there should be at least 2 dedicated resident doctors in training who are approved as being appropriately trained to work on the unit. Along with these recommendations it is advised that the consultant body of the PICU should reflect the diverse modes of entry into the speciality and that there should be a mixture of consultants trained in the usual parent disciplines of paediatric anaesthesia and paediatrics.

The questionnaires from NHS trusts G and J remained incomplete so have been excluded from the analysis of the medical staffing data.

Figure 12.1.5 Total WTE medical staff working within PICU (October 2004)



Over half (55%) of NHS trusts responding to the medical staffing questionnaire identified that they had junior medical staff such as Senior House Officers (SHOs) working on their PICU. This supports the PICS Standards that there should be a second tier (of medical staff) especially in institutions approved for PIC training. In addition, the majority of PICUs have a mixture of consultants, both paediatrics and paediatric anaesthesia and middle grade staff as recommended by PICS (2001).[3] It was not possible to determine from the questionnaires whether all units fulfilled the requirements for 24-hour cover from a dedicated PIC consultant and at least 2 dedicated resident doctors in training. This issue will be addressed in the next medical staffing questionnaire.

Referrences

1 A Bridge to the Future Nursing Standrads, Education and Workforce Planning in Paediatric Intensive Care. Report of the Chief Nursing Officer's Taskforce. NHS Executive 1997.

2 PICANet Annual Report (March 2003 – February 2004). May 2004.

3 Paediatric Intensive Care Society Standards Document 2001.

13 CONSENT STUDY

The feasibility of signed consent for the collection of patient-identifiable information for the PICANet

Within the NHS, the Data Protection Act requires patients' consent for the disclosure of patient-identifiable information for purposes not directly related to treatment, including external clinical audit. In 2002/3, under Section 60 of the Health and Social Care Act 2001 for England and Wales[1] the independent statutory PIAG granted the PICANet temporary support for the collection of patient-identifiable data without consent, on the condition that the viability of taking consent was assessed.

PICANet undertook a study of the feasibility of obtaining signed consent for submission of patient-identifiable information to our national clinical audit aiming to identify factors influencing the consent process and its success. This has been published in the BMJ[2] and a summary is provided below:

Methods

Ethical approval was given by the Northern and Yorkshire Multi-Centre Research Ethics Committee. Details of consecutive patients admitted to 7 volunteer PICUs in England were collected over 3 months (May - July 2003). Participants (parents/guardians) were approached in a 2 stage process to obtain consent, initially with a short verbal explanation and an information sheet followed by an approach to collect signatures 24 hours later (or before discharge). Data from returned consent forms were linked to the PICANet database to assess the proportion of admissions where signed consent was given, refused or not obtained. To estimate the likelihood of gaining consent associated with characteristics of the patient, each of the following were considered separately in a univariate approach - age, sex, level of deprivation (Townsend score derived from residential postcode), ethnicity (south Asian or not), illness severity (PIM score), length of hospital stay. Odds ratios with 95% confidence intervals were calculated using logistic regression.

Results

One unit did not start and one did not fully implement the protocol through lack of staff resources. Consent was obtained for 182/422 admissions (43.1%) (range by unit 8.7% - 84.2%). One refusal (0.2%) was received. Consent rates were significantly positively associated with illness severity and hospital stays of longer than 6 days and negatively

with older children (10 - 14 years). Long stays and older children were retained as significant in a stepwise regression model of the factors significant in the univariate model.

Conclusion

Our findings show that systematically obtaining individual signed consent for sharing patient-identifiable information with an externally located clinical audit database is unlikely to be successful without resources specifically allocated to training, staff time and administrative support. The most successful hospital at gaining consent 'missed' 15.8% of admissions, a level of incompleteness which would severely compromise the effective functioning of PICANet as a tool for clinical governance and monitoring the effective delivery of care. The success of gaining of consent from this cohort was unrelated to ethnicity or level of deprivation but was increased for longer in-patient episodes and reduced for older children. The extremely low refusal rate suggested that parents were willing to share patient-identifiable data; no comparable information on parental consent appears to be published. Our results endorse the view that the logistics of obtaining consent in large multi-centre studies presents substantial challenges requiring new approaches to the issue.[3] The authors believe that patients should be made aware of the important ways in which patient-identifiable information gathered by the NHS is used to ensure the best delivery of care and the benefits of audit and research.[4,5]

Acknowledgements

The implementation of this project was dependent on the commitment, support and co-operation of the nursing and medical staff on the PICANet Consent Study Group. The members were, Carolyn Boyles, Mark Darowski, Nicky Davey, Bill Chaudhry, Samantha Jones, Christine Mackerness, Patricia McKinney, Michael Marsh, Gale Pearson and Charles Stack. Grateful thanks are due to all the staff in each centre for their contribution to this difficult project especially Jon Smith and Mike Stafford. This was a resource intensive exercise, particularly on staff time, and all centres experienced problems.

References

1 British Parliament. *The Health and Social Care Bill* 2000. http://www.legislation.hmso.gov.uk/acts/acts2001/20010015.htm (accessed 16 March 2005)

2 BMJ, doi:10.1136/bmj.38404.650208.AE (published 18 March 2005).

3 Willison DJ, Keshavjee K, Nair K Goldsmith C, Holbrook AM for the COMPETE investigators. Patient consent preferences for research uses of information in electronic medical records: interview and survey data. BMJ 2003;326:373-377.

4 Verity C, Nicholl A. Consent, confidentiality and the threat to public health surveillance. Br Med J 2002;324:1210-3.

5 Coleman MP, Evans BG, Barrett G. Confidentiality and the public interest in medical research – will we ever get it right? Clin Med 2003;3:219-228.

14 DISCUSSION

The information presented in this report provides a unique insight into the delivery of PIC at national and local level and fulfils a key aim of the National Service Framework for children.[1] It is hoped that the very large data set upon which it is based will support initiatives to improve the delivery of care to children in PICUs. The utility of a national audit dataset is becoming more apparent as requests for information and data are submitted to PICANet. In collaboration with the PICS SG, PICANet is actively promoting the use of this dataset for audit and clinical trials. PICANet plays a vital role in clinical governance by providing comprehensive information on PIC to clinicians and Health Service Commissioners. With suitable ethical approval, high quality research may also be generated from this large body of information. Further years of data collection will provide the means to examine trends in use of the service, outcomes and changing patterns of treatment.

14.1 Data quality

PICANet devotes a great deal of time and attention to data quality issues.

Cross checking numbers on the central PICANet database with unit admission books ensures full data coverage, and checks performed at unit visits to date show that all patients recorded in local admission books have a corresponding entry on the PICANet database.

Central review of the data set showed that most of the data items collected have high completion rates (over 90% of variables had completion rates above 95%). Fields that have high incidences of exception values recorded include base excess, systolic blood pressure, FiO_2, PaO_2, O_2 flow, pupillary reaction, delivery order, gestational age, multiple birth, and status / location 30 days post unit discharge. NHS number was frequently blank (for 40% of admissions). Physiology variables such as blood pressure and base excess may be recorded in case notes but not found by staff extracting the data, or they may not be routinely measured depending on the child's condition.

Some units were able to provide an NHS number for all / nearly all admissions, whilst others did not provide any NHS numbers at all (this does not necessarily reflect availability of NHS number, it is possible that the information existed on Patient Administration Systems, but resources to link this to PICANet were not available).

Status at 30 days post discharge and NHS number varied considerably by unit in their completion rate, illustrating that although certain information may be difficult to collect, it is possible to obtain should appropriate resources be available.

During unit visits, sources of error were found to be most noticeable in the recording of admission and discharge time, primary reason for admission, physiology variables associated with PIM and the number of days of ventilation received. Physiology variables and number of days of ventilation are particularly difficult to collect as they can span across different time periods, all of which must be reviewed before a value can be chosen. Primary reason for admission is somewhat dependent on who on the unit is responsible for this area of data collection (some people use very general Read Codes whilst others are very specific). This means that inter and intra-unit variability are likely to exist, although allocation of a patient to a primary diagnostic group, which is fairly broad, is not affected.

The calibration of PIM was carried out using data from several centres in the UK and Australia. Inevitably, there will be some error in data collection but the assumption is made that the error is randomly distributed across the centres. In section 4.1, random variation in the recording of 2 PIM physiology variables (systolic blood pressure and base excess) was illustrated graphically using Bland-Altman plots. The random scatter of points indicated that there was no evidence of overall systematic bias nationally but this analysis could not repeated at trust level due to small numbers. Despite the lack of systematic bias, some of the differences observed were quite large and these can have a marked effect on the PIM logit and the resultant probability of expected mortality. If data are erroneously recorded as missing (and set to a normal value) or are systematically under or over-estimated more often in one trust than another, this could result in biased estimates of risk-adjusted SMRs and make between-trust comparisons less robust.

To ensure that data is collected in a systematic and unbiased manner adequate training should be given to staff abstracting this information from patient records. In the Netherlands, it has been demonstrated that systematic, high quality training for those involved in collecting PIM data significantly improves data quality.[2] Provision of additional training will be a priority for PICANet in the future.

14.2 IT issues

The IT aspects of collecting, validating and reporting on data supplied by units continue to present challenges. The PICANet software is generally robust and operates well in most units. On occasion, changes to the local IT infrastructure (such as altering permissions on PCs and network drives) have caused operational difficulties which can be very frustrating for local staff. PICANet have continued to liaise with trust IT departments over these issues and have been successful in resolving the majority of problems.

Data transfer via NHSnet has not been possible from all trusts for a variety of reasons. The current protocol used by the PICANet software involves the use of a port that has been implicated in virus proliferation and hence has been shut down by trust network managers and National Health Service Information Authority (NHSIA) regional security managers on occasion. PICANet are exploring the options for a different data transfer protocol that will be more universally acceptable.

14.3 Admission data

Information on the numbers and demographics of children admitted to intensive care, accompanied by clinical details including their diagnoses and whether their admission was planned or not, forms the cornerstone of the PICANet dataset. This will serve as a reference point for all future analysis of the delivery of paediatric intensive care at a national level.

Admission numbers to intensive care between 2003 and 2004 remain relatively constant overall and across age-groups. The seasonal fluctuation in admissions is mainly accounted for by those aged less than 1 year admitted with bronchiolitis, half of which are attributable to respiratory syncytial virus (RSV). The coding of this condition is very specific and although it is possible that some RSV+ infections have not been coded, the experience of the PICANet team on validation visits is that this is one condition that is unequivocally coded as there is invariably clear pathology laboratory data in the notes. This data is invaluable in assessing when immunoprophylaxis using palivizumab may be best used.

The admission data presented by SHA allows health service planners to assess the likely burden of healthcare for children discharged from critical care. The large variation in prevalence rates by SHA highlighted in section 10 provides a potentially useful means of determining what geodemographic factors affect the number of children are admitted to intensive care.

14.4 Retrieval data

The majority of critically ill children present acutely to their local district general hospital A&E department. A small but significant proportion of these children will require subsequent care on a PICU and are likely to need inter-hospital transfer. In order to maximise patient care, the transport process should provide a standard of care equal to that provided in a PICU.[3] There is considerable evidence that this service can be provided with the use of specialist transport teams.[4]

Over the reporting period, more than 80% of children requiring intensive care transport into PICU received this from specialist teams. These included specific PIC teams from either the receiving unit or another PIC or non-PIC specialist teams such as A&E transfer teams. This is in accordance with the PICS guidelines[5], which state that all children who require intensive care have the right to timely recognition and provision with smooth and efficient transfer into a PICU. In certain areas of the country specific paediatric critical care transport teams exists. This means that staff should always be available to provide the care and by transporting larger numbers of children on a frequent basis skills are more easily maintained.

14.5 Intervention data

Comprehensive data collection surrounding interventions performed during a PIC admission is time consuming and difficult to obtain. Staff collecting the PICANet intervention variables simply record if an intervention takes place. This report identified that for every intervention collected by PICANet, with the exception of 'renal support', there was an increase in numbers from 2003 - 2004. Over the report period an increase of 5% in the number of children receiving invasive ventilation was observed. Children receiving non-invasive ventilation also increased but by a larger proportion (18%).

14.6 Bed activity data

The data presented in this report on bed activity give an indication of the workload in PIC but the measure does not have an adequate denominator in terms of daily or even hourly bed availability. This kind of data is difficult to capture and without it, a valid analysis of bed occupancy is not possible. Nevertheless, this information, in conjunction with staffing and case mix data does provide an initial basis for assessing trust activity.

Trusts developing new staff rota systems will inevitably find that allying these systems to the information collected for PICANet can produce better management and performance information.

14.7 Outcome data

Mortality before discharge from PIC (PICU mortality) within the PICANet dataset was 5.6% in 2003 and 5.1% in 2004. Across units, this varied from 0.6% - 11.5% in 2003 and 0.3% - 12.9% in 2004. Adjusting for illness severity of children admitted to PICUs using PIM reveals that PICU mortality across units does not vary more than would be expected if this variation was random for 2003 and 2004 combined: this is demonstrated graphically in the funnel plots in section 9 where all the data points fall within the control limits. It should be noted that for 2003 - 2004, only 6 trusts have a risk-adjusted SMR above unity and 4 trusts fall below the lower control limit. This highlights the need to recalibrate PIM and PIM 2 in the PICANet data set on a regular basis.

Examining 2003 alone, there is some concern regarding the risk-adjusted mortality of one unit that lies above the upper control limit. PICANet will follow the policy agreed with the CAG for this unit (see Appendix M).

Mortality up to 30 days post discharge from PICU remains poorly collected. In the data available, 30 day mortality was 1.2% overall and varied across units from 0% - 7%. This variation between trusts cannot be interpreted due to the differential success in collecting the follow-up information (between 1% - 100% of the follow-up data was 'missing' or 'unknown').

The SMRs calculated by diagnostic group suggest that mortality is higher in some groups than others. The use of PIM as a risk-adjustment tool for specific diagnostic groups has not been validated at this level. Pearson et al[6] have noted that the performance of PIM was better in some diagnostic groups than others and Slater et al[7] suggest that PIM 2 discriminates reasonably well across broad diagnostic groups.

As the PICANet data set grows, there will be more opportunity to assess the reasons for variation in overall risk-adjusted PICU mortality and to examine mortality within specific diagnostic groups. This will provide important information to inform service delivery and policy.

14.8 Epidemiology of PIC

The information on national prevalence rates for admission to PICU have been made available for the first time. The heterogeneity of rates between SHA / HBs are a clear indicator that the geo-demographic characteristics of children admitted to intensive care need further investigation in terms of epidemiology, access to resources and health services delivery. With this in mind, future analysis will include the influence of socio-economic status, ethnicity and geographical location on PICU admissions; PICANet also presents the unique opportunity for these investigations to be adjusted for case mix.

14.9 Children in AICUs

Data presented from ICNARC and SWACIC showed that in England in 2003, 633 children aged less than 16 years received intensive care in an AICU. Two hundred and thirty one of these children were subsequently transferred to a PICU.

Approximately 20% of children admitted to AICUs in England in 2003 were aged less than 1 year. This may have been the most appropriate place for the child to have been managed clinically, before transfer to a PICU.

Clearly, a significant proportion of children received treatment in AICUs. In view of this ICNARC has agreed to amend their Case Mix Programme data set to facilitate collection of core variables associated with PIC, including PIM and PIM 2.

14.10 Staffing data

The results presented in the report show that there are still a great number of PICUs who do not meet the 6.4 WTE qualified clinical nursing staff per intensive care bed as recommended in the 2001 standards from PICS.[5] However the data shows a small increase in the overall number of nurses who are both paediatric trained and have additional PIC training. Numbers of all qualified staff have also increased over the report period.

PICANet has carried out data collection on levels of both nursing and medical staffing in PIC since 2003. After each survey the data collection forms have been amended in an attempt to obtain clear and accurate data. However it would still appear that the relevant questions are not being asked or answered accurately in some NHS trusts. This leads to difficulties in analysing the data to produce informative results. Despite

assistance from the PICANet team much of the data returned is incomplete and unreliable.

To enable future surveys to be useful to the PIC community and to ensure that the right questions are asked in a format that will be consistently interpreted throughout all PICUs, PICANet will seek advice from medical staff. Survey forms will be piloted in specific units before being distributed to all participating units in PICANet. It is anticipated that this approach will yield accurate information.

14.11 Data / Information requests received

A key aim of PICANet is to provide an information resource for individuals and organisations involved in delivering PIC in England and Wales. The PICS SG has specifically encouraged use of the data for both audit and research. PICANet has a protocol and clearly defined procedure for the release of data, agreed by both the CAG and the SG. Requests for release of data are considered in terms of protecting the confidentiality of patient identifiable data, ethics, study validity and the ability of the researchers to comply with confidentiality and security requirements.

Appendix N details the ad-hoc requests that PICANet have received for data, showing the PICU clinical community the nature and range of requests for access to and use of the data set. Of note, is the fact that for any data which identifies specific units, written permission has to be obtained from each unit. As the PICANet data set accumulates, its uses and applications become more widespread, and along with PICS SG we would strongly encourage all clinical care teams to actively consider how our information might inform and support initiatives in service evaluation and research.

14.12 Future plans

Eleven key recommendations have arisen from this report. In the future PICANet intends to implement these recommendations and, in partnership with the PIC community and other organisations associated with child health, promote best practice in children's intensive care.

References

1 Department of Health. Getting the right start: National Service Framework for Children, Standards for hospital services. London, DOH, April 2003.

2 van Keulen JG, Polderman KH, Gemke RJ. Reliability of PRISM and PIM scores in paediatric intensive care. Arch Dis Child. 2005 Feb; 90(2):211-4.

3 Rashid A, Bhuta T, Berry A. A regionalised transport service, the way ahead? Archives of Disease in Childhood 1999; 80:488-92.

4 Britto J, Nadel S, Maconochie I et al. Morbidity and severity of illness during inter-hospital transfer: impact of a specialised paediatric retrieval team. BMJ 1995; 311:836-9.

5 Paediatric Intensive Care Society Standards Document 2001.

6 Slater A, Shann F, Pearson G. PIM2: a revised version of the Paediatric Index of Mortality. Intensive Care Medicine 2003;29:278-285.

7 Pearson G, Stickley J, Shann F. Calibration of the paediatric index of UK paediatric intensive care units. Arch Dis Child 2001;84:125–128.

15 RECOMMENDATIONS

1 We recommend that PICANet should continue to collect data on children receiving intensive care in England and Wales to optimise the delivery of care, to facilitate future planning, permit ongoing audit and describe the epidemiology of critically ill children.

2 We recommend incorporating data from paediatric intensive care units in Scotland and Northern Ireland to enable the diversity of clinical practice to be characterised at a national level.

3 We recommend that links with the clinical community and professional organisations such as the Paediatric Intensive Care Society Study Group should be strengthened and expanded via collaborative use of the PICANet dataset.

4 International collaborations should be established to enable the development of large-scale audit comparisons between countries that will inform clinical practice.

5 Data collection for PICANet is resource intensive. Units have experienced difficulties in collecting certain data items and some have expressed concerns about the extra workload placed on staff. To ensure that PICANet receives complete, timely and good quality data, we recommend that sufficient resources should be allocated by NHS trusts to ensure that data can be collected efficiently.

6 To improve and maintain data quality, provision of a programme of training covering the collection of audit data for PICANet is recommended. Training sessions conducted in partnership with senior clinical staff and members of the PICANet team should ideally take place at least once a year. PICANet should provide a standard training package covering all aspects of the PICANet dataset.

7 Technical difficulties are still being experienced in the transmission of data to PICANet. We recommend improved links with trust IT infrastructure to resolve this. Further resources are needed to develop a secure interactive web-based information system and reporting tool that allows online data entry.

8 The PICANet dataset should be used for future calibration of risk-adjustment algorithms in paediatric intensive care.

9 Comprehensive collection of staffing information (both nursing and medical) is recommended to continue to ensure baseline details are available to monitor the delivery of care in individual units.

10 Not all children receiving intensive care are looked after on a paediatric intensive care unit. To include information on all children receiving intensive care, we recommend that PICANet should capture relevant information from adult intensive care units.

11 We recommend further investigation of the differences in the prevalence of paediatric intensive care by Strategic Health Authority to determine which factors might explain this variation.

APPENDIX A CLINICAL ADVISORY GROUP MEMBERSHIP

Name	Position	NHS Trust / Hospital	Period served
Dr Paul Baines	Consultant in Paediatric Intensive Care	Royal Liverpool Children's NHS Trust Alder Hey Hospital	2002 - present
Ms Corenna Bowers	Sister	Cardiff & Vale NHS Trust University Hospital of Wales	2002 - Sept 2004
Dr Andrew Durward	Consultant in Paediatric Intensive Care	Guy's & St Thomas' Hospital NHS Trust Guy's Hospital	2002 - present
Ms Georgina Gymer	Research Nurse	Queen's Medical Centre Nottingham University NHS Trust Queen's Medical Centre	2005 - present
Dr James Fraser	Consultant in Paediatric Intensive Care	United Bristol Healthcare NHS Trust Bristol Royal Hospital for Children	2002 - present
Dr Hilary Klonin	Consultant in Paediatric Intensive Care	Hull & East Yorkshire Hospitals NHS Trust Hull Royal Infirmary	2002 - present
Ms Christine Mackerness	Sister	Newcastle Upon Tyne Hospitals NHS Trust Newcastle General Hospital	2002 - present
Dr Jillian McFadzean	Consultant in Paediatric Intensive Care	Lothian NHS Trust Edinburgh Royal Hospital for Sick Children	2005 - present
Ms Victoria McLaughlin	Audit Nurse	Central Manchester & Manchester Children's University Hospitals NHS Trust Royal Manchester Children's Hospital	2002 - present
Dr Roddy O'Donnell	Consultant in Paediatric Intensive Care	Addenbrookes NHS Trust Addenbrooke's Hospital	2002 - present
Ms Geralyn Oldham	Information Support Manager	Great Ormond Street Hospital for Children NHS Trust Great Ormond Street Hospital for Sick Children	2002 - present
Dr Gale Pearson (Chair)	Consultant in Paediatric Intensive Care	Birmingham Children's Hospital NHS Trust Diane, Princess of Wales Children's Hospital	2002 - present
Dr Damian Pryor	Consultant in Paediatric Intensive Care	Cardiff & Vale NHS Trust University Hospital of Wales	2002 - Sept 2004
Dr Allan Wardhaugh	Consultant in Paediatric Intensive Care	Cardiff & Vale NHS Trust University Hospital of Wales	Sept 2004 - present
Ms Debbie White	Sister	Addenbrookes NHS Trust Addenbrooke's Hospital	2002 - present

APPENDIX B STEERING GROUP MEMBERSHIP

Name	Position	Organisation	Representation	Period Served
Mrs Pamela Barnes	Chair of Action for Sick Children	Action for Sick Children	Lay Member	2002 - present
Professor Nick Black (Chair)	Head of Health Services Research Unit	London School of Hygiene and Tropical Medicine	Health Services Research / Public Health	2002 - present
Mr William Booth	Clinical Nurse Manager	PICU Bristol Royal Hospital for Children	Royal College of Nursing	2002 - present
Dr Jean Chapple	Consultant in Perinatal Epidemiology / Public Health	Westminster Primary Care Trust	PICNET founder	2002 - present
Dr Bill Chaudhry	Consultant Paediatrician	PICU Newcastle Upon Tyne Hospitals NHS Trust	Clinical IT	2002 - Sept 2003
Dr Mark Darowski	Consultant Paediatric Anaesthetist	PICU Leeds Teaching Hospitals NHS Trust	Royal College of Anaesthetists	2002 - present
Mr Noel Durkin	Department of Health	Child Health Services Directorate Department of Health	Department of Health	2002 - present
Dr Steve Kerr	Consultant in Paediatric Intensive Care	PICU Royal Liverpool Children's NHS Trust	Chair of PICS	Sept 2003 - present
Mr Ian Langfield	Audit Co-ordinator	National Assembly of Wales	National Assembly of Wales	2002 - Sept 2003
Dr Michael Marsh	Director of Paediatric Intensive Care	PICU Southampton University Hospitals NHS Trust	Royal College of Paediatrics and Child Health	2002 - present
Dr Jillian McFadzean Ms Laura Reekie	Consultant in Anaesthesia and Intensive Care PA	PICU Lothian NHS Trust	Edinburgh Royal Hospital for Sick Children	2005 - present
Dr Roddy McFaul	Medical Advisor	Child Health Services Directorate Department of Health	Department of Health	2002 - Sept 2003
Professor Jon Nicholl	Director of Medical Care Research Unit	School of Health and Related Research University of Sheffield	Health Services Research / Statistics	2002 - present
Dr Gale Pearson	Consultant in Paediatric Intensive Care	PICU Birmingham Children's Hospital NHS Trust	Chair of PICANet CAG	2002 - present

Name	Position	Organisation	Representation	Period Served
Ms Tanya Ralph	Nursing Research Lead	PICU Sheffield Children's NHS Trust	PICS	2002 - present
Dr Kathy Rowan	Director	ICNARC	Intensive Care National Audit & Research Centre	2002 - present (on sabbatical 2004 represented by Lucy Scott)
Mr Stuart Rowe	PCT Commissioner	Commissioning Department Hammersmith PCT	PCT Commissioner (Pan-Thames)	Sept 2003 - present
Ms Dominique Sammut	Audit Co-ordinator	Health Commission Wales	Health Commission Wales	Sept 2003 - present
Dr Jenifer Smith	Medical Advisor	Office Project Team Commission for Health Improvement	Commission for Health Improvement	2002 - present
Dr Charles Stack	Consultant in Paediatric Intensive Care	PICU Sheffield Children's NHS Trust	PICS	2002 - present
Professor Stuart Tanner	Medical Advisor in Paediatrics and Child Health	Child Health Services Directorate Department of Health	Department of Health	Sept 2003 - present
Dr Robert Tasker	Lecturer in Paediatrics	Department of Paediatrics University of Cambridge Clinical School	PICS SG	Sept 2004 - present
Ms Bev Botting	Child Health and Pregnancy Statistics	Office for National Statistics	Office for National Statistics (data protection)	2002 - Sept 2003

APPENDIX C PARTICIPATING NHS TRUSTS AND HOSPITAL CHARACTERISTICS

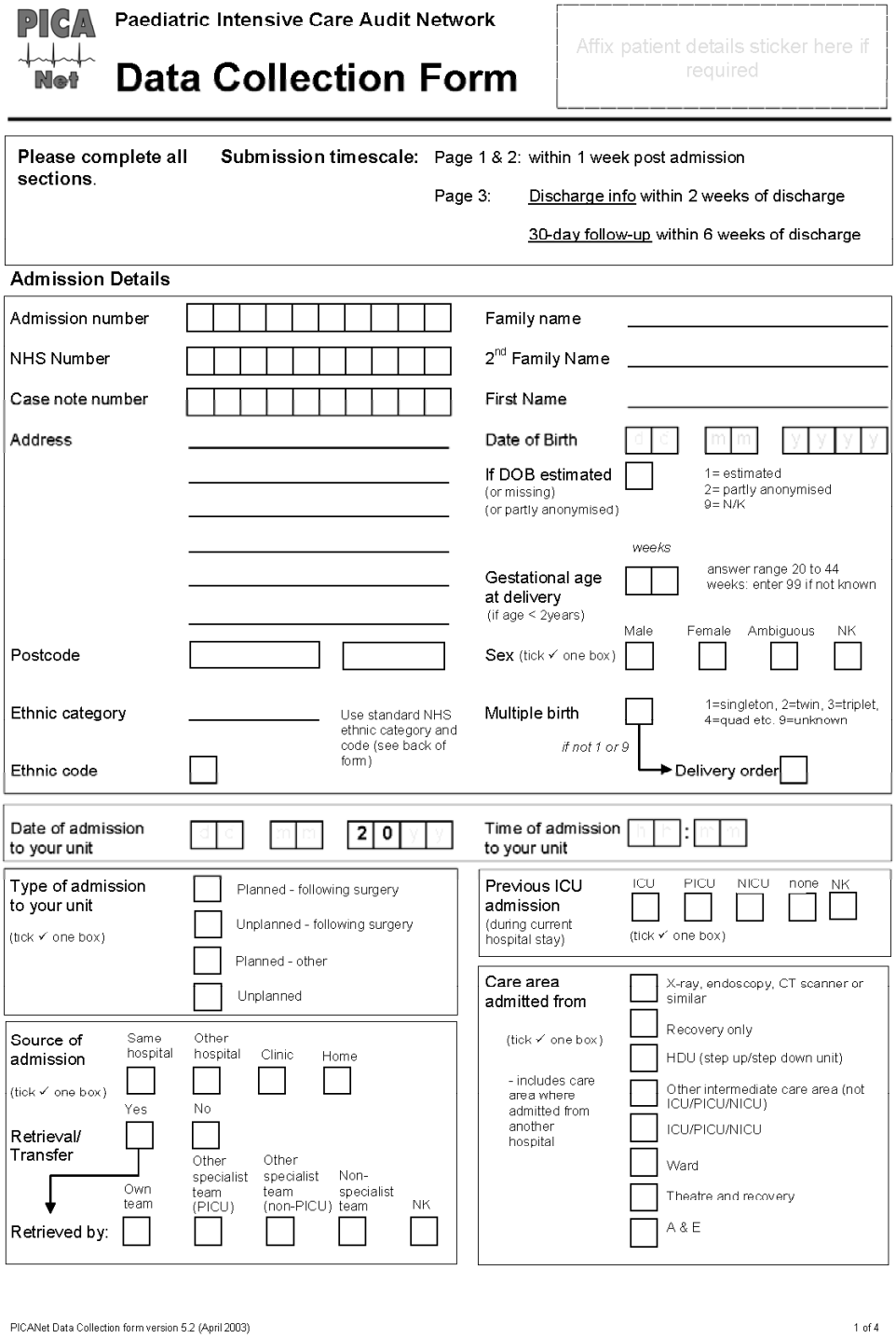
NHS Trust	Participating Hospital	Unit / Ward	Number of ITU beds	Number of HDU beds	Type of unit
Addenbrookes NHS Trust	Addenbrooke's Hospital	PICU	6	2	General
Birmingham Children's Hospital NHS Trust	Diane, Princess of Wales Children's Hospital	PICU	19	0	General & Cardiac
Brighton & Sussex University Hospitals NHS trust	Royal Alexandra Hospital for Sick Children	Lydia Ward	1	1	General
Cardiff & Vale NHS Trust	University Hospital of Wales	PICU	7	0	General
Central Manchester & Manchester Children's University Hospitals NHS Trust	Royal Manchester Children's Hospital	PICU	15	0	General
Great Ormond Street Hospital for Children NHS Trust	Great Ormond Street Hospital for Sick Children	PICU, CICU NICU & DJW	35	4	General, Cardiac, Neonatal Surgical Unit
Guy's & St. Thomas' Hospital NHS Trust	Guy's Hospital	PICU	12	0	General & Cardiac
Hull & East Yorkshire Hospitals NHS Trust	Hull Royal Infirmary	PICU beds on AICU	2	0	General
King's College Hospital NHS Trust	King's College Hospital	PICU	6	0	General & Hepatic
Leeds Teaching Hospitals NHS Trust	Leeds General Infirmary	Wards 2 & 4	14	0	General & Cardiac
	St. James' University Hospital	PICU	3	0	General
Newcastle upon Tyne Hospitals NHS Trust	Newcastle General Hospital	PICU	10[a]	6[a]	General

NHS Trust	Participating Hospital	Unit / Ward	Number of ITU beds	Number of HDU beds	Type of unit
Newcastle upon Tyne Hospitals NHS Trust	Royal Victoria Infirmary	Ward 3	10[a]	6[a]	Surgical ICU
	Freeman Hospital	Ward 28	6	0	Cardiac
Oxford Radcliffe Hospitals NHS Trust	John Radcliffe Hospital	PICU	7	0	General & Cardiac
Queen's Medical Centre Nottingham University NHS Trust	Queen's Medical Centre	PICU	6	0	General
Royal Brompton & Harefield NHS Trust	Royal Brompton Hospital	PICU	8	4	Cardiac
Royal Liverpool Children's NHS Trust	Alder Hey Hospital	PICU	20	0	General & Cardiac
Sheffield Children's NHS Trust	Sheffield Children's Hospital	PICU	7	2	General
	Sheffield Children's Hospital	Neonatal Surgical Unit	3	0	Neonatal Surgical Unit
Southampton University Hospitals NHS Trust	Southampton General Hospital	PICU	9	0	General & Cardiac
South Tees Hospitals NHS Trust	James Cook University Hospital	PICU	3	1	General
St. George's Healthcare NHS Trust	St. George's Hospital	PICU	5	0	General
St. Mary's NHS Trust	St. Mary's Hospital	PICU	6	2	General
The Lewisham Hospitals NHS Trust	University Hospital, Lewisham	PICU	1	0	General

NHS Trust	Participating Hospital	Unit / Ward	Number of ITU beds	Number of HDU beds	Type of unit
United Bristol Healthcare NHS Trust	Bristol Royal Hospital for Children	PICU	14	0	General & Cardiac
University Hospital of Leicester NHS Trust	Leicester Royal Infirmary	CICU	6	0	General
	The Glenfield Hospital	PICU	5	0	Cardiac
University Hospital of North Staffordshire NHS Trust	City General Hospital	PICU	6	1	General

Notes:

[a] Total bed numbers split between two hospital sites



PICA Net

Paediatric Intensive Care Audit Network

Data Collection Form

Affix patient details sticker here if required

Please complete all sections.

Submission timescale: Page 1 & 2: within 1 week post admission

Page 3: Discharge info within 2 weeks of discharge

30-day follow-up within 6 weeks of discharge

Admission Details

Admission number

NHS Number

Case note number

Address

Postcode

Ethnic category — Use standard NHS ethnic category and code (see back of form)

Ethnic code

Family name

2nd Family Name

First Name

Date of Birth d d m m y y y y

If DOB estimated (or missing) (or partly anonymised) — 1= estimated 2= partly anonymised 9= N/K

Gestational age at delivery (if age < 2years) — weeks — answer range 20 to 44 weeks: enter 99 if not known

Sex (tick ✓ one box) — Male / Female / Ambiguous / NK

Multiple birth — 1=singleton, 2=twin, 3=triplet, 4=quad etc. 9=unknown

if not 1 or 9 → Delivery order

Date of admission to your unit d d m m 2 0 y y

Time of admission to your unit h h : m m

Type of admission to your unit (tick ✓ one box)

- Planned - following surgery
- Unplanned - following surgery
- Planned - other
- Unplanned

Previous ICU admission (during current hospital stay) (tick ✓ one box) — ICU / PICU / NICU / none / NK

Source of admission (tick ✓ one box) — Same hospital / Other hospital / Clinic / Home

Retrieval/ Transfer — Yes / No

Retrieved by: Own team / Other specialist team (PICU) / Other specialist team (non-PICU) / Non-specialist team / NK

Care area admitted from (tick ✓ one box) - includes care area where admitted from another hospital

- X-ray, endoscopy, CT scanner or similar
- Recovery only
- HDU (step up/step down unit)
- Other intermediate care area (not ICU/PICU/NICU)
- ICU/PICU/NICU
- Ward
- Theatre and recovery
- A & E

PICANet Data Collection form version 5.2 (April 2003) 1 of 4

Diagnosis and procedures

Primary reason for admission to your unit (condition rather than procedure):

Clinical Code (s)
(Use these boxes only if you are ADDING a code from the Clinical Terms Browser)

Other reasons for admission to your unit (procedures/operations):

Co-morbidity:

Medical History

Evidence available to assess past medical history? Yes ☐ No ☐ (if yes tick ✓ appropriate box(es) below)

Cardiopulmonary resuscitation outside hospital prior to admission	☐	Cardiopulmonary resuscitation in hospital before ICU admission	☐
Cardiomyopathy or myocarditis	☐	Spontaneous cerebral haemorrhage	☐
Severe combined immune deficiency	☐	Neurodegenerative disorder	☐
Hypoplastic left heart syndrome	☐	Severe developmental delay	☐
Malignancy	☐	Liver failure	☐
→ Malignancy after completion of first induction?	☐	HIV	☐
→ Leukaemia or lymphoma after completion of first induction?	☐	→ AIDS?	☐

PIM and PIM II (from 1st face to face contact with Doctor to one hour after admission to your unit)

Systolic blood pressure (mmHg) ☐☐☐

Pupillary reaction: Both fixed & dilated ☐ Other reaction ☐ NK ☐

Base excess in arterial or capillary blood (+/- mmol l^{-1}): indicate + or - ☐ ☐☐•☐

Mechanical ventilation at any time during the 1st hour on your unit: Yes ☐ No ☐

PaO_2 ☐☐•☐ kPa **OR** ☐☐☐ mmHg

FiO_2 ☐•☐☐ (at time of PaO_2 above)

Intubation (at time of PaO_2 above) Yes ☐ No ☐ NK ☐

Use of headbox (at time of PaO_2 above) Yes ☐ No ☐ NK ☐

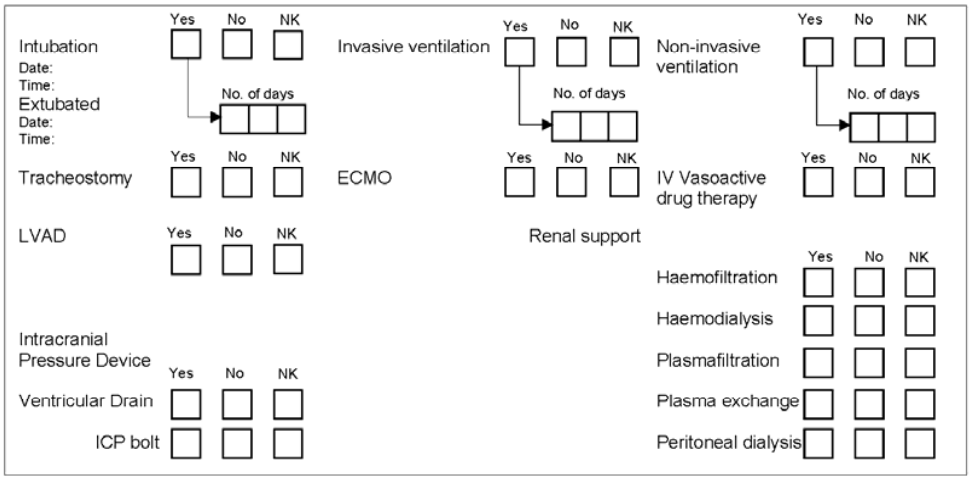
OR

O_2 Flow ☐☐☐ ml kg^{-1} min^{-1} **OR** ☐☐•☐☐ l min^{-1}

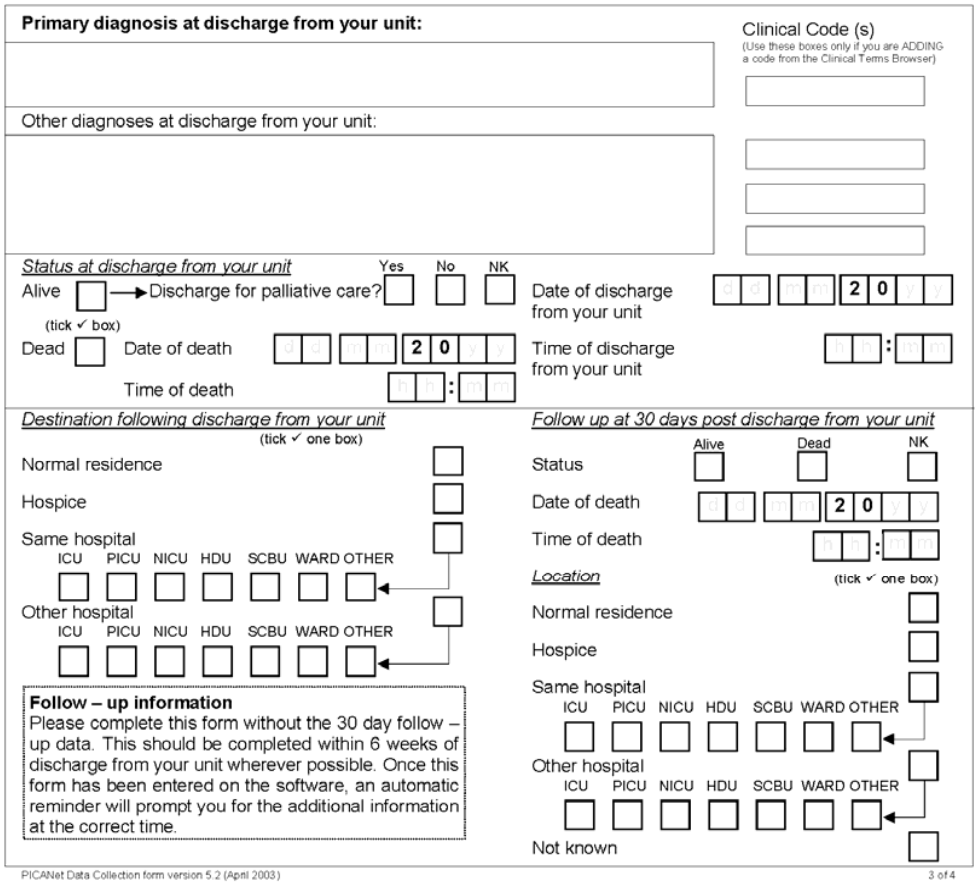
Method of administration: Nasopharyngeal airway / Catheter ☐ Face mask with reservoir bag ☐ Nasal cannula / Face mask ☐ NK ☐

PICANet Data Collection form version 5.2 (April 2003) 2 of 4

Intervention Record during this admission



Discharge Information



Comments – please add any comments/notes/observations in this box

User defined fields

Variable name	Description						

Ethnic Categories

These are the standard categories to be used for the collection of ethnicity information from 1 April 2001:

Ethnic Categories		Codes
a. White	British	A
	Irish	B
	Any other White background	C
b. Mixed	White and Black Caribbean	D
	White and Black African	E
	White and Asian	F
	Any other mixed background	G
c. Asian or Asian British	Indian	H
	Pakistani	J
	Bangladeshi	K
	Any other Asian background	L
d. Black or Black British	Caribbean	M
	African	N
	Any other Black background	P
e. Other ethnic Groups	Chinese	R
	Any other ethnic group	S
f. Not Stated	Not stated	Z

Contact Information

A query sent to our team email address: picanet@sheffield.ac.uk will reach all of us.

Our individual contact details are given below:

Sam Jones
0114 222 0772
sam.jones@sheffield.ac.uk

Nicky Davey
0116 252 5450
nd36@leicester.ac.uk

Roger Parslow
0113 343 4856
r.c.parslow@leeds.ac.uk

APPENDIX E INFORMATION LEAFLET

Contact Details

By e-mail:

picanet@sheffield.ac.uk

By telephone:

Leicester	Nicky Davey	Tel: 0116 252 5450
Leeds	Roger Parslow	Tel: 0113 343 4856
Sheffield	Sam Jones	Tel: 0114 222 0772
Pan Thames	Krish Thiru	Tel: 020 7762 6713

For further information please visit the PICANet website: www.picanet.org.uk

PICA Net

Paediatric Intensive Care Audit Network.

Information leaflet for parents, families and guardians of children admitted to paediatric intensive care

Version 2 (PT)

December 2004

Drawn by Zoe aged 8.

What is a paediatric intensive care unit / children's intensive care unit?

A paediatric intensive care unit is a designated ward of a hospital that is staffed and equipped to provide specialist care and treatment to children with illnesses, injuries or complications, from which recovery is possible.

What is PICANet?

PICANet is a national audit of all children being cared for in paediatric intensive care units in England, Wales and Scotland (Edinburgh).

Why is this project important?

The study will use the information collected from every paediatric intensive care unit to establish the best methods of care and treatment. This will help ensure adequate provision of intensive care services in the future.

Who is paying for this study?

The Department of Health, the National Assembly for Wales and The Royal Hospital for Sick Children, Edinburgh fund this audit.

What will happen to my child?

Your child will not have to do anything to take part in this study.

Information about your child's condition or illness will be recorded onto a form in their notes, and from there it will be entered onto a computer. The data will be encoded / encrypted before it is stored confidentially on a central computer.

We will collect the same information on all children and the details from all hospitals will be put together. We expect to have information on a large number of children (about 15,000) each year. This will mean we can look at what is happening across England, Wales and Scotland and not just in your child's hospital.

What information will be needed?

Information about your child's identity, such as name, date of birth and NHS number are required to ensure that if they are moved to another paediatric intensive care unit, the audit will be able to recognise this.

Postcode details are required to help in the planning of children's intensive care services.

Information about your child's care, treatment and condition will also be collected.

Will the information be safe?

All of the information will be kept in a safe room on a computer. No-one will be able to look at the information unless it is their job to do so.

Do you want more information?

Talk to any of the doctors or nurses caring for your child, or use the contact details over the page.

What if I do not want my child to take part?

If you do not want your child to take part in this study please let one of your child's doctors or nurses know straight away.

This will not change the care and treatment that your child receives in hospital on this or any other unit.

APPENDIX F MONTHLY ADMISSIONS REPORT

Admissions		SITEID																											
YEAR	MONTH	1	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	Grand Total
2003	1	96	17	66		26	83	38	40	74		80						48	19	29	25	28	33	34	8	65	25	6	48	888
	2	87	20	62		20	74	53	29	90		77						49	9	21	23	19	28	26	3	58	22	5	34	809
	3	94	12	62	33	22	80	57	34	97	177	86	18	54	27	39	10	43	14	29	27	17	46	30	4	39	18	9	39	1217
	4	86	17	56	42	24	79	37	37	88	140	77	13	37	19	43	13	32	15	25	22	18	34	34	3	59	16	13	38	1117
	5	86	14	52	30	20	69	50	30	92	146	97	22	51	24	30	13	50	9	23	25	27	35	36	6	64	18	6	34	1159
	6	93	11	77	26	25	74	57	28	80	168	77	20	57	21	28	10	44	14	22	24	22	37	23	10	45	20	6	33	1152
	7	98	10	56	16	21	75	37	29	79	149	83	24	62	28	35	10	37	6	30	21	21	31	28	11	55	13	7	41	1113
	8	89	9	57	33	14	61	50	27	84	160	75	18	44	29	28	2	26	11	19	22	23	27	28	5	48	11	5	28	1033
	9	66	14	63	28	22	70	58	36	82	145	77	19	45	21	29	2	36	19	26	20	25	32	26	7	41	15	5	43	1072
	10	87	22	62	33	24	72	54	42	88	154	86	24	39	24	36	1	46	19	28	27	12	25	27	8	63	29	6	32	1170
	11	60	23	65	42	28	88	60	39	85	147	109	18	32	31	30	5	62	20	28	34	15	40	22	6	48	18	3	37	1195
	12	89	25	62	35	33	85	40	29	99	134	113	36	36	25	48	10	57	11	32	31	19	39	25	12	59	33	8	50	1275
2003 Total		1031	194	740	318	279	910	591	400	1038	1520	1037	212	457	249	346	76	530	166	312	301	246	407	339	83	644	238	79	457	13200
2004	1	108	24	69	33	40	99	54	34	90	130	112	19	48	29	41	10	53	18	25	35	17	31	28	3	43	29	5	44	1271
	2	92	35	70	35	25	76	55	34	87	142	86	17	51	18	38	4	53	6	19	31	21	24	33	7	46	20	8	55	1188
	3	85	34	49	41	26	68	44	39	103	166	104	19	53	27	39	12	58	16	23	25	28	42	31	3	50	21	2	45	1253
	4	87	20	50	37	25	83	53	24	77	146	102	20	36	26	28	8	49	10	31	30	23	26	28	7	47	16	7	38	1134
	5	71	12	53	33	15	76	49	31	74	148	100	31	44	42	32	4	45	13	27	37	18	25	27	4	45	23	2	37	1118
	6	69	16	53	33	13	77	59	45	83	159	90	29	51	29	23	9	42	12	25	28	14	34	33	6	53	17	4	39	1145
	7	68	17	45	37	21	57	48	32	76	151	89	23	54	34	29	5	45	17	17	30	18	26	27	7	37	12	0	37	1059
	8	76	23	44	28	17	61	51	38	72	159	74	22	48	28	23	5	39	18	25	22	20	41	33	8	50	12	2	29	1068
	9	80	25	52	43	19	66	39	19	84	154	80	28	42	29	27	9	46	9	21	31	33	37	15	8	46	17	3	27	1089
	10	73	24	49	40	11	69	32	29	70	135	97	22	51	31	35	7	46	17	26	22	18	25	32	9	70	19	3	42	1104
	11	90	29	56	40	24	57	50	30	76	143	102	27	51	38	43	6	59	15	20	25	21	35	24	4	55	19	4	38	1181
	12	84	27	58	34	30	70	39	36	89	148	122	36	29	35	34	3	49	15	28	19	25	28	26	7	43	21	4	45	1184
2004 Total		983	286	648	434	266	859	573	391	981	1781	1158	293	558	366	392	82	584	166	287	335	256	374	337	73	585	226	44	476	13794
Grand Total		2014	480	1388	752	545	1769	1164	791	2019	3301	2195	505	1015	615	738	158	1114	332	599	636	502	781	676	156	1229	464	123	933	26994

APPENDIX G DATA VALIDATION REPORT

The Royal Hospital

Key to clinical code errors

Value(s):
Read Code followed by Read Code description followed by the text recorded in the unit notes e.g. XSDOK- Bronchiolitis [respiratory distress]

Example errors:
A) (no code) – (no description) [(no notes)], this means nothing has been supplied.
B) X44vY – [ASD], this means an invalid Read Code and no Read Code description have been supplied.
C) 00000 – [abdominal tumour resection], this means no Read Code and no Read Code description have been supplied.

Admission number 200421	**Casenote number 233X**	**Admitted on 12/02/2004**	**PICANet ID 450**
Reason	**Variable(s)**	**Value(s)**	**Comment**
Missing primary reason	Primary reason for admission	(No code) - (No description) [(No notes)]	Must have a primary reason for admission recorded

Admission number 200462	**Casenote number 433RX**	**Admitted on 15/04/2004**	**PICANet ID 552**
Reason	**Variable(s)**	**Value(s)**	**Comment**
Missing value	Intubation		
Missing value	Number of days intubated		

Admission number 200479	**Casenote number 756X**	**Admitted on 01/05/2004**	**PICANet ID 660**
Reason	**Variable(s)**	**Value(s)**	**Comment**
Incorrect concept domain	Primary reason for admission	X20UN - Nissen fundoplication [Nissen fundoplication]	Primary reason must be a disorder
Missing value	Follow-up status		

Admission number 2004111	**Casenote number 999X**	**Admitted on 16/12/2004**	**PICANet ID 1273**
Reason	**Variable(s)**	**Value(s)**	**Comment**
Incongruent value	Hospital location	Normal residence / Ward	Discharge destination not hospital but hospital location recorded
Logic error	Admission date / Discharge date	12/03/2003 / 10/03/2003	Please check dates; cannot be discharged before admitted
Missing value	Unit discharge status	Not known	Status at discharge from your unit expected (Alive or Dead)

APPENDIX H ERROR RATE REPORT

SITEID	Last imported	Method of transmission	Admissions	First admission	Most recent admission	Missing values[a]	Out of range[b]	Invalid values[c]	Logic errors[d]	Incongruent values[e]	No primary reason[f]	Incorrect domain[g]	Invalid codes[h]	Uncoded[i]	Total errors	Error rate[j]
11	14/02/2005 11:52	Email	3374	01/03/2003	02/01/2005	1	0	0	0	2	0	0	0	0	3	**0.001**
6	11/02/2005 16:17	NHSnet	2066	01/11/2002	09/02/2005	2	1	0	0	0	1	0	0	0	4	**0.002**
18	16/02/2005 14:04	Email	1265	01/11/2002	12/01/2005	4	0	0	0	0	0	0	0	0	4	**0.003**
15	08/02/2005 10:37	NHSnet	658	01/03/2003	31/01/2005	1	0	2	0	0	1	0	0	0	4	**0.006**
9	16/02/2005 14:06	NHSnet	920	01/11/2002	13/02/2005	0	0	0	0	0	0	6	0	0	6	**0.007**
22	02/02/2005 15:13	NHSnet	561	02/11/2002	27/01/2005	4	0	0	0	0	0	0	0	0	4	**0.007**
10	09/02/2005 10:11	Email	2263	02/11/2002	07/01/2005	29	0	0	0	0	1	0	1	0	31	**0.014**
26	10/02/2005 11:17	Email	1457	01/11/2002	07/02/2005	15	0	0	0	1	1	4	0	0	21	**0.014**
2	17/02/2005 17:05	Email	533	02/01/2003	15/02/2005	10	0	0	0	0	0	0	2	0	12	**0.023**
3	15/02/2005 14:43	NHSnet	1527	02/11/2002	30/12/2004	4	0	4	0	4	0	17	8	0	37	**0.024**
27	16/02/2005 16:47	NHSnet	568	01/11/2002	04/02/2005	0	0	0	0	0	15	0	0	0	15	**0.026**
8	17/02/2005 17:05	NHSnet	1349	01/11/2002	16/02/2005	24	0	1	0	3	21	0	2	0	51	**0.038**
4	16/02/2005 09:51	Email	800	25/01/2003	04/02/2005	38	0	0	0	2	0	3	0	0	43	**0.054**
24	14/02/2005 09:17	NHSnet	781	01/11/2002	13/02/2005	40	0	0	0	1	2	0	0	0	43	**0.055**
28	15/02/2005 16:34	NHSnet	136	01/11/2002	28/01/2005	4	0	0	0	0	3	2	0	0	9	**0.066**
19	10/02/2005 13:18	NHSnet	393	01/11/2002	08/02/2005	29	0	0	0	0	5	0	0	0	34	**0.087**
1	17/02/2005 11:28	Email	2215	01/11/2002	31/12/2004	61	7	10	0	44	5	24	49	0	200	**0.090**
25	14/02/2005 09:17	NHSnet	176	01/11/2002	30/12/2004	17	0	0	0	0	0	0	0	3	20	**0.114**
21	09/02/2005 10:11	Email	712	01/11/2002	09/01/2005	92	0	0	0	0	4	0	0	13	109	**0.153**
5	18/02/2005 09:33	Email	642	04/11/2002	16/02/2005	97	0	0	0	3	3	1	2	1	107	**0.167**
20	02/02/2005 15:13	NHSnet	703	02/11/2002	27/01/2005	69	3	0	1	8	28	6	28	0	143	**0.203**
23	07/02/2005 15:49	NHSnet	896	01/11/2002	04/02/2005	189	1	0	0	0	5	2	0	0	197	**0.220**
29	11/02/2005 13:24	NHSnet	1079	01/11/2002	06/02/2005	81	3	0	0	1	24	128	24	6	267	**0.247**
16	11/02/2005 09:19	Email	797	01/03/2003	09/02/2005	150	6	8	0	7	3	46	21	0	241	**0.302**
14	14/02/2005 10:21	Email	1018	01/03/2003	29/12/2004	135	1	2	0	41	1	1	180	0	361	**0.355**
17	16/02/2005 14:03	NHSnet	170	04/03/2003	28/01/2005	205	0	0	0	0	4	4	49	11	273	**1.606**
13	10/02/2005 16:49	Email	544	01/03/2003	02/02/2005	1348	0	0	0	1	51	66	7	9	1482	**2.724**
12	01/02/2005 10:38	Email	2222	01/01/2003	31/12/2004	10887	20	108	13	472	0	28	1431	0	12959	**5.832**
			29825			**13536**	**42**	**135**	**14**	**590**	**178**	**338**	**1804**	**43**	**16680**	**0.559**

Key:

a Total number of missing values (not coded using 'not known' for categorical values or exception values for continuous variables)
b Values outside normal ranges that have not been confimed as correct
c Values not valid for these fields (e.g. wrong enumerated code)
d Logical inconsistancies within the data
e Fields completed with exception values or other data when not required
f Primary reason for admission is missing
g Usually clinical codes for procedures that have been entered where a disorder is required
h Codes which do not exist as Read Codes
i No Read Code supplied for primary reason for admission
j Number of errors per patient

APPENDIX I SITE VISIT DIFFERENCES

CODE	Denominator = 495 sets of notes examined VARIABLE	PIM	Number of differences (%)	
1.1	Postcode		15	(3.0)
1.11	Date of birth		9	(1.8)
1.12	DOB estimated/missing		2	(0.4)
1.13	Gestational age at delivery		41	(8.3)
1.14	Multiple birth		23	(4.6)
1.15	Delivery order		10	(2.0)
1.16	Sex		10	(2.0)
1.17	Ethnic code		47	(9.5)
1.19	Date of admission to your unit	Y	14	(2.8)
1.2	Time of admission to your unit	Y	76	**(15.4)**
1.21	Admission type	Y	34	(6.9)
1.22	Previous ICU admission		83	**(16.8)**
1.23	Source of admission		16	(3.2)
1.24	Care area admitted from		66	**(13.3)**
1.25	Retrieval		28	(5.7)
1.26	Retrieved by		19	(3.8)
1.6	Family name		6	(1.2)
1.7	2nd Family name		7	(1.4)
1.8	First name		4	(0.8)
1.91	Address1		14	(2.8)
2.1	Primary reason for admission - as recorded in notes	Y	134	**(27.1)**
3.1	Evidence available to assess past medical history	Y	25	(5.1)
3.10	Malignancy	Y	10	(2.0)
3.11	Malignancy after completion of first induction?	Y	8	(1.6)
3.12	Leukaemia/Lymphoma after 1st induction?	Y	8	(1.6)
3.13	Liver failure	Y	8	(1.6)
3.14	HIV	Y	5	(1.0)
3.15	AIDS	Y	5	(1.0)
3.2	CPR outside hospital prior to admission	Y	9	(1.8)
3.3	CPR in hospital before ICU admission	Y	13	(2.6)
3.4	Cardiomyopathy or myocarditis	Y	6	(1.2)
3.5	Spontaneous cerebral haemorrhage	Y	5	(1.0)
3.6	Severe combined immune deficiency	Y	5	(1.0)
3.7	Neurodegenerative disorder	Y	6	(1.2)
3.8	Hypoplastic left heart syndrome	Y	7	(1.4)
3.9	Severe developmental delay	Y	11	(2.2)
4.1	Systolic blood pressure	Y	133	**(26.9)**
4.10	Oxygen flow (ml/kg/min)	Y	5	(1.0)
4.11	Oxygen flow (l/min)	Y	21	(4.2)
4.12	Method of administration	Y	21	(4.2)
4.2	Pupillary reaction	Y	40	(8.1)
4.3	Base excess in arterial or capillary blood	Y	123	**(24.8)**
4.4	Mechanical ventilation during first hour on unit	Y	14	(2.8)
4.5	PaO2 - oxygen pressure - kPa	Y	117	**(23.6)**
4.6	PaO2 - oxygen pressure - mmHg	Y	22	(4.4)
4.7	FiO2 at time of PaO2 sample - oxygen inspired	Y	84	**(17.0)**
4.8	Associated intubation	Y	15	(3.0)
4.9	Use of headbox	Y	10	(2.0)
5.1	Intubation		32	(6.5)
5.10	Left ventricular assist device		2	(0.4)
5.11	Intracranial pressure device - Ventricular drain		1	(0.2)
5.12	Intracranial pressure device - ICP BOLT		3	(0.6)
5.13	Renal support - haemofiltration		5	(1.0)
5.14	Renal support - haemodialysis		1	(0.2)
5.15	Renal support - plasmafiltration		0	(0.0)
5.16	Renal support - plasma exchange		1	(0.2)
5.17	Renal support - peritoneal dialysis		2	(0.4)
5.2	Number of days intubated		104	**(21.0)**
5.3	Invasive ventilation		31	(6.3)
5.4	Invasive ventilation - days		114	**(23.0)**
5.5	Non-invasive ventilation		42	(8.5)
5.6	Non-invasive ventilation days		55	**(11.1)**
5.7	Tracheostomy		8	(1.6)
5.8	ECMO		3	(0.6)
5.9	IV vasoactive drug therapy		19	(3.8)
6.1	Primary diagnosis at discharge		120	**(24.2)**
6.11	Status at discharge from unit		2	(0.4)
6.12	Date of discharge from unit		16	(3.2)
6.13	Time of discharge from unit		83	**(16.8)**
6.14	Discharge for palliative care		1	(0.2)
6.15	Date of death		1	(0.2)
6.16	Time of death		3	(0.6)
6.17	Destination following discharge from unit		20	(4.0)
6.18	Destination following discharge from unit: hospital		13	(2.6)
7.1	Status at 30 days post discharge from unit		37	(7.5)
7.2	Location 30 days following discharge from unit		41	(8.3)
7.3	Location 30 days post discharge from unit: hospital		6	(1.2)

APPENDIX J COMPLETENESS CHECKS

	Complete			Incomplete		
	Valid	Exceptions	Total	Invalid	Blank	Total
ADDATE	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%
ADDRESS1	93.9%	0.0%	93.9%	0.0%	6.1%	6.1%
ADNO	99.5%	0.0%	99.5%	0.0%	0.5%	0.5%
ADTIME	99.5%	0.0%	99.5%	0.0%	0.5%	0.5%
ADTYPE	99.4%	0.2%	99.6%	0.0%	0.4%	0.4%
APDIAG	98.3%	0.0%	98.3%	0.4%	1.3%	1.7%
BASEEXCESS	66.1%	33.0%	99.1%	0.0%	0.9%	0.9%
BPSYS	84.1%	15.0%	99.1%	0.0%	0.9%	0.9%
CAREAREAAD	96.6%	2.6%	99.2%	0.0%	0.8%	0.8%
CASENO	92.0%	0.0%	92.0%	0.0%	8.0%	8.0%
DELORDER	88.5%	11.3%	99.8%	0.0%	0.2%	0.2%
DISPALCARE	98.1%	1.4%	99.5%	0.0%	0.5%	0.5%
DOB	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%
DOBEST	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%
DOD	99.5%	0.0%	99.5%	0.0%	0.5%	0.5%
DPDIAG	99.7%	0.0%	99.7%	0.3%	0.0%	0.3%
ECMO	97.8%	1.2%	99.1%	0.0%	0.9%	0.9%
ETHNIC	98.9%	0.0%	98.9%	0.0%	1.1%	1.1%
FAMILYNAME	92.5%	0.0%	92.5%	0.0%	7.5%	7.5%
FIO2	73.0%	27.0%	100.0%	0.0%	0.0%	0.0%
FIRSTNAME	92.5%	0.0%	92.5%	0.0%	7.5%	7.5%
FU30DISSTATUS	56.6%	43.1%	99.7%	0.0%	0.3%	0.3%
FU30LOCATION	85.3%	14.6%	99.9%	0.0%	0.1%	0.1%
FU30LOCHOSP	97.8%	2.0%	99.8%	0.0%	0.2%	0.2%
GEST	65.8%	33.6%	99.4%	0.0%	0.6%	0.6%
HEADBOX	95.4%	4.6%	100.0%	0.0%	0.0%	0.0%
ICPBOLT	97.9%	1.1%	99.1%	0.0%	0.9%	0.9%
ICPVD	90.5%	8.6%	99.1%	0.0%	0.9%	0.9%
INTTRACHEOSTOMY	96.0%	3.1%	99.1%	0.0%	0.9%	0.9%
INTUBATION	95.1%	4.9%	100.0%	0.0%	0.0%	0.0%
INTUBDAYS	99.3%	0.5%	99.8%	0.0%	0.2%	0.2%
INTUBEVER	97.9%	1.2%	99.1%	0.0%	0.9%	0.9%
INVVENT	97.8%	1.2%	99.1%	0.0%	0.9%	0.9%
INVVENTDAY	89.4%	1.6%	90.9%	0.0%	9.1%	9.1%
LVAD	97.8%	1.2%	99.1%	0.0%	0.9%	0.9%
MECHVENT	97.4%	1.7%	99.1%	0.0%	0.9%	0.9%
MEDHISTEVID	98.3%	0.8%	99.1%	0.0%	0.9%	0.9%
METHADMIN	92.5%	7.5%	100.0%	0.0%	0.0%	0.0%
MULT	86.1%	13.3%	99.4%	0.0%	0.6%	0.6%
NHSNO	60.5%	0.0%	60.5%	0.0%	39.5%	39.5%
NONINVVENT	97.4%	1.7%	99.0%	0.0%	1.0%	1.0%
NONINVVENTDAY	99.5%	0.4%	99.9%	0.0%	0.1%	0.1%
O2LMIN	98.5%	1.5%	100.0%	0.0%	0.0%	0.0%
O2MLKGMIN	89.2%	10.8%	100.0%	0.0%	0.0%	0.0%
PAO2HG	65.3%	34.7%	100.0%	0.0%	0.0%	0.0%
PAO2KPA	56.6%	43.4%	100.0%	0.0%	0.0%	0.0%
POSTCODE	95.9%	0.0%	95.9%	0.0%	4.1%	4.1%
PREVICUAD	98.0%	1.2%	99.2%	0.0%	0.8%	0.8%
PUPREACT	86.8%	12.2%	99.1%	0.0%	0.9%	0.9%
RENALHAEMDIA	98.0%	1.1%	99.1%	0.0%	0.9%	0.9%
RENALHAEMFIL	97.9%	1.1%	99.1%	0.0%	0.9%	0.9%
RENALPERIDIA	97.9%	1.1%	99.1%	0.0%	0.9%	0.9%
RENALPLASEXCH	91.7%	7.4%	99.1%	0.0%	0.9%	0.9%
RENALPLASFILT	91.7%	7.4%	99.1%	0.0%	0.9%	0.9%
RETRIEVAL	99.3%	0.3%	99.6%	0.0%	0.4%	0.4%
RETRIEVALBY	94.9%	5.0%	99.9%	0.0%	0.0%	0.1%
SEX	99.8%	0.2%	100.0%	0.0%	0.0%	0.0%
SOURCEAD	99.5%	0.1%	99.6%	0.0%	0.4%	0.4%
TIMEDTH	99.5%	0.0%	99.5%	0.0%	0.5%	0.5%
UNITDISDATE	99.9%	0.0%	99.9%	0.0%	0.1%	0.1%
UNITDISDEST	98.6%	0.9%	99.5%	0.0%	0.5%	0.5%
UNITDISDESTHOSP	91.3%	8.7%	100.0%	0.0%	0.0%	0.0%
UNITDISSTATUS	98.7%	0.4%	99.1%	0.4%	0.5%	0.9%
UNITDISTIME	99.5%	0.0%	99.5%	0.0%	0.5%	0.5%
VASOACTIVE	97.3%	1.7%	99.1%	0.0%	0.9%	0.9%
	93.01%	**4.96%**	**97.97%**	**0.02%**	**2.01%**	**2.03%**

APPENDIX K TABLES PRESENTING DATA BY NHS TRUST

K.1 Admission Data

K.1.1 Admissions by age

NHS trust		Age group (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	Total n	%
2003	A	109	(34)	84	(26)	73	(23)	52	(16)	**318**	**(2.4)**
	B	89	(46)	51	(26)	26	(13)	28	(14)	**194**	**(1.5)**
	C	103	(37)	77	(28)	43	(15)	56	(20)	**279**	**(2.1)**
	D	201	(38)	171	(32)	64	(12)	94	(18)	**530**	**(4.0)**
	E	803	(53)	348	(23)	196	(13)	173	(11)	**1520**	**(11.5)**
	F	590	(57)	242	(23)	100	(10)	105	(10)	**1037**	**(7.9)**
	G	21	(27)	32	(41)	15	(19)	11	(14)	**79**	**(0.6)**
	H	87	(41)	48	(23)	39	(18)	38	(18)	**212**	**(1.6)**
	I	394	(43)	264	(29)	159	(17)	93	(10)	**910**	**(6.9)**
	J	38	(50)	24	(32)	8	(11)	6	(8)	**76**	**(0.6)**
	K	430	(50)	200	(23)	131	(15)	98	(11)	**859**	**(6.5)**
	L	62	(26)	74	(31)	46	(19)	56	(24)	**238**	**(1.8)**
	M	107	(26)	97	(24)	88	(22)	115	(28)	**407**	**(3.1)**
	N	137	(40)	99	(29)	60	(18)	43	(13)	**339**	**(2.6)**
	O	234	(51)	101	(22)	82	(18)	40	(9)	**457**	**(3.5)**
	P	510	(49)	284	(27)	126	(12)	118	(11)	**1038**	**(7.9)**
	Q	226	(42)	136	(25)	75	(14)	103	(19)	**540**	**(4.1)**
	R	371	(58)	117	(18)	75	(12)	81	(13)	**644**	**(4.9)**
	S	62	(37)	43	(26)	45	(27)	16	(10)	**166**	**(1.3)**
	T	83	(33)	81	(33)	41	(16)	44	(18)	**249**	**(1.9)**
	U	137	(40)	105	(30)	74	(21)	30	(9)	**346**	**(2.6)**
	V	513	(50)	249	(24)	154	(15)	115	(11)	**1031**	**(7.8)**
	W	326	(44)	196	(26)	115	(16)	103	(14)	**740**	**(5.6)**
	X	469	(47)	246	(25)	131	(13)	145	(15)	**991**	**(7.5)**
2003 Total		**6102**	**(46.2)**	**3369**	**(25.5)**	**1966**	**(14.9)**	**1763**	**(13.4)**	**13200**	

NHS trust		Age group (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	Total n	%
2004	A	148	(34)	109	(25)	90	(21)	87	(20)	**434**	**(3.1)**
	B	135	(47)	75	(26)	45	(16)	31	(11)	**286**	**(2.1)**
	C	111	(42)	56	(21)	42	(16)	57	(21)	**266**	**(1.9)**
	D	249	(43)	162	(28)	84	(14)	89	(15)	**584**	**(4.2)**
	E	970	(54)	381	(21)	215	(12)	215	(12)	**1781**	**(12.9)**
	F	703	(61)	268	(23)	98	(8)	89	(8)	**1158**	**(8.4)**
	G	13	(30)	12	(27)	9	(20)	10	(23)	**44**	**(0.3)**
	H	88	(30)	102	(35)	55	(19)	48	(16)	**293**	**(2.1)**
	I	393	(46)	233	(27)	130	(15)	103	(12)	**859**	**(6.2)**
	J	36	(44)	22	(27)	13	(16)	11	(13)	**82**	**(0.6)**
	K	516	(59)	145	(17)	111	(13)	106	(12)	**878**	**(6.4)**
	L	79	(35)	49	(22)	44	(19)	54	(24)	**226**	**(1.6)**
	M	110	(29)	108	(29)	75	(20)	81	(22)	**374**	**(2.7)**
	N	155	(46)	96	(28)	43	(13)	43	(13)	**337**	**(2.4)**
	O	281	(50)	172	(31)	66	(12)	39	(7)	**558**	**(4.0)**
	P	536	(55)	239	(24)	100	(10)	106	(11)	**981**	**(7.1)**
	Q	247	(45)	135	(25)	82	(15)	85	(15)	**549**	**(4.0)**
	R	286	(49)	145	(25)	82	(14)	72	(12)	**585**	**(4.2)**
	S	62	(37)	47	(28)	31	(19)	26	(16)	**166**	**(1.2)**
	T	124	(34)	125	(34)	52	(14)	65	(18)	**366**	**(2.7)**
	U	140	(36)	141	(36)	66	(17)	45	(11)	**392**	**(2.8)**
	V	494	(50)	242	(25)	129	(13)	118	(12)	**983**	**(7.1)**
	W	329	(51)	146	(23)	100	(15)	73	(11)	**648**	**(4.7)**
	X	500	(52)	211	(22)	121	(13)	132	(14)	**964**	**(7.0)**
2004 Total		**6705**	**(48.6)**	**3421**	**(24.8)**	**1883**	**(13.7)**	**1785**	**(12.9)**	**13794**	

K.1.2 Admissions by age (age less than 1 year)

NHS trust		Age group (months) <1		1-2		3-5		6-11		Total	
		n	%	n	%	n	%	n	%	n	%
2003	A	21	(10)	30	(14)	25	(12)	33	(15)	**213**	**(2.9)**
	B	32	(30)	18	(17)	22	(21)	17	(16)	**107**	**(1.5)**
	C	20	(11)	37	(20)	23	(13)	23	(13)	**183**	**(2.5)**
	D	50	(15)	64	(19)	38	(11)	49	(14)	**342**	**(4.6)**
	E	362	(48)	162	(22)	124	(17)	155	(21)	**750**	**(10.2)**
	F	251	(55)	129	(28)	97	(21)	113	(25)	**458**	**(6.2)**
	G	5	(9)	6	(10)	5	(9)	5	(9)	**58**	**(0.8)**
	H	27	(21)	16	(12)	10	(8)	34	(26)	**130**	**(1.8)**
	I	125	(23)	99	(19)	80	(15)	90	(17)	**534**	**(7.3)**
	J	12	(32)	16	(42)	2	(5)	8	(21)	**38**	**(0.5)**
	K	203	(46)	94	(21)	70	(16)	63	(14)	**444**	**(6.0)**
	L	14	(7)	15	(8)	15	(8)	18	(9)	**192**	**(2.6)**
	M	14	(5)	34	(11)	20	(7)	39	(13)	**304**	**(4.1)**
	N	39	(18)	34	(16)	32	(15)	32	(15)	**211**	**(2.9)**
	O	89	(40)	51	(23)	57	(25)	37	(17)	**224**	**(3.0)**
	P	182	(33)	115	(21)	109	(20)	104	(19)	**554**	**(7.5)**
	Q	72	(22)	78	(24)	39	(12)	37	(11)	**327**	**(4.4)**
	R	159	(56)	81	(28)	62	(22)	69	(24)	**286**	**(3.9)**
	S	13	(12)	28	(25)	10	(9)	11	(10)	**110**	**(1.5)**
	T	19	(11)	19	(11)	18	(11)	27	(16)	**170**	**(2.3)**
	U	18	(8)	42	(19)	33	(15)	44	(20)	**217**	**(3.0)**
	V	201	(38)	110	(21)	100	(19)	102	(20)	**523**	**(7.1)**
	W	116	(27)	78	(18)	68	(16)	64	(15)	**422**	**(5.7)**
	X	199	(36)	81	(15)	93	(17)	96	(17)	**558**	**(7.6)**
2003 Total		**2243**	**(30.5)**	**1437**	**(19.5)**	**1152**	**(15.7)**	**1270**	**(17.3)**	**7355**	

NHS trust		Age group (months) <1		1-2		3-5		6-11		Total	
		n	%	n	%	n	%	n	%	n	%
2004	A	42	(14)	35	(12)	33	(11)	38	(13)	**291**	**(4.0)**
	B	38	(24)	39	(25)	28	(18)	30	(19)	**159**	**(2.2)**
	C	26	(16)	25	(16)	31	(19)	29	(18)	**159**	**(2.2)**
	D	51	(15)	76	(22)	60	(17)	62	(18)	**349**	**(4.7)**
	E	423	(50)	189	(22)	179	(21)	179	(21)	**849**	**(11.5)**
	F	312	(67)	147	(31)	119	(25)	125	(27)	**469**	**(6.4)**
	G	4	(13)	4	(13)	1	(3)	4	(13)	**32**	**(0.4)**
	H	18	(8)	24	(11)	14	(7)	32	(15)	**214**	**(2.9)**
	I	103	(21)	100	(21)	98	(20)	92	(19)	**485**	**(6.6)**
	J	4	(9)	8	(17)	14	(30)	10	(22)	**46**	**(0.6)**
	K	225	(59)	135	(35)	90	(24)	66	(17)	**381**	**(5.2)**
	L	19	(12)	28	(18)	18	(12)	14	(9)	**155**	**(2.1)**
	M	26	(10)	33	(12)	18	(7)	33	(12)	**271**	**(3.7)**
	N	51	(28)	37	(20)	41	(22)	26	(14)	**185**	**(2.5)**
	O	107	(39)	58	(21)	61	(22)	55	(20)	**277**	**(3.8)**
	P	211	(46)	133	(29)	96	(21)	96	(21)	**456**	**(6.2)**
	Q	80	(25)	75	(23)	45	(14)	47	(15)	**320**	**(4.3)**
	R	121	(37)	52	(16)	50	(15)	63	(19)	**328**	**(4.5)**
	S	17	(15)	20	(18)	18	(16)	7	(6)	**111**	**(1.5)**
	T	23	(9)	30	(12)	28	(11)	43	(17)	**248**	**(3.4)**
	U	27	(11)	41	(16)	31	(12)	41	(16)	**254**	**(3.5)**
	V	208	(41)	100	(20)	93	(19)	93	(19)	**502**	**(6.8)**
	W	88	(27)	78	(23)	75	(23)	88	(27)	**332**	**(4.5)**
	X	179	(37)	103	(21)	101	(21)	117	(24)	**489**	**(6.6)**
2004 Total		**2403**	**(32.6)**	**1570**	**(21.3)**	**1342**	**(18.2)**	**1390**	**(18.9)**	**7362**	

K.1.3 Admissions by age (aged 16 years and above)

NHS trust		Age group (years) 16		17-20		21-25		26+		Total	
		n	%	n	%	n	%	n	%	n	%
2003	A	3	(75)	1	(25)	0	(0)	0	(0)	**4**	**(1.6)**
	B	1	(50)	1	(50)	0	(0)	0	(0)	**2**	**(0.8)**
	C	5	(71)	2	(29)	0	(0)	0	(0)	**7**	**(2.7)**
	D	8	(62)	5	(38)	0	(0)	0	(0)	**13**	**(5.1)**
	E	17	(52)	14	(42)	0	(0)	2	(6)	**33**	**(12.8)**
	F	6	(55)	5	(45)	0	(0)	0	(0)	**11**	**(4.3)**
	H	4	(80)	1	(20)	0	(0)	0	(0)	**5**	**(1.9)**
	I	11	(61)	6	(33)	0	(0)	1	(6)	**18**	**(7.0)**
	K	8	(53)	6	(40)	0	(0)	1	(7)	**15**	**(5.8)**
	L	11	(69)	5	(31)	0	(0)	0	(0)	**16**	**(6.2)**
	M	4	(100)	0	(0)	0	(0)	0	(0)	**4**	**(1.6)**
	N	7	(78)	2	(22)	0	(0)	0	(0)	**9**	**(3.5)**
	O	1	(100)	0	(0)	0	(0)	0	(0)	**1**	**(0.4)**
	P	11	(42)	13	(50)	2	(8)	0	(0)	**26**	**(10.1)**
	Q	11	(85)	2	(15)	0	(0)	0	(0)	**13**	**(5.1)**
	R	12	(92)	1	(8)	0	(0)	0	(0)	**13**	**(5.1)**
	S	4	(67)	0	(0)	2	(33)	0	(0)	**6**	**(2.3)**
	T	2	(50)	2	(50)	0	(0)	0	(0)	**4**	**(1.6)**
	U	4	(50)	4	(50)	0	(0)	0	(0)	**8**	**(3.1)**
	V	4	(80)	1	(20)	0	(0)	0	(0)	**5**	**(1.9)**
	W	4	(50)	3	(38)	1	(13)	0	(0)	**8**	**(3.1)**
	X	26	(72)	10	(28)	0	(0)	0	(0)	**36**	**(14.0)**
2003 Total		**164**	**(63.8)**	**84**	**(32.7)**	**5**	**(1.9)**	**4**	**(1.6)**	**257**	

NHS trust		Age group (years) 16		17-20		21-25		26+		Total	
		n	%	n	%	n	%	n	%	n	%
2004	A	5	(100)	0	(0)	0	(0)	0	(0)	**5**	**(1.8)**
	B	6	(75)	2	(25)	0	(0)	0	(0)	**8**	**(2.9)**
	C	4	(100)	0	(0)	0	(0)	0	(0)	**4**	**(1.5)**
	D	10	(71)	4	(29)	0	(0)	0	(0)	**14**	**(5.1)**
	E	28	(74)	10	(26)	0	(0)	0	(0)	**38**	**(13.9)**
	F	8	(57)	6	(43)	0	(0)	0	(0)	**14**	**(5.1)**
	G	1	(100)	0	(0)	0	(0)	0	(0)	**1**	**(0.4)**
	H	9	(100)	0	(0)	0	(0)	0	(0)	**9**	**(3.3)**
	I	10	(53)	8	(42)	1	(5)	0	(0)	**19**	**(7.0)**
	K	11	(58)	7	(37)	1	(5)	0	(0)	**19**	**(7.0)**
	L	2	(25)	5	(63)	0	(0)	1	(13)	**8**	**(2.9)**
	M	6	(86)	1	(14)	0	(0)	0	(0)	**7**	**(2.6)**
	N	2	(67)	1	(33)	0	(0)	0	(0)	**3**	**(1.1)**
	P	6	(55)	4	(36)	1	(9)	0	(0)	**11**	**(4.0)**
	Q	14	(78)	4	(22)	0	(0)	0	(0)	**18**	**(6.6)**
	R	15	(52)	13	(45)	1	(3)	0	(0)	**29**	**(10.6)**
	S	3	(43)	3	(43)	1	(14)	0	(0)	**7**	**(2.6)**
	T	3	(50)	3	(50)	0	(0)	0	(0)	**6**	**(2.2)**
	U	0	(0)	2	(100)	0	(0)	0	(0)	**2**	**(0.7)**
	V	5	(38)	8	(62)	0	(0)	0	(0)	**13**	**(4.8)**
	W	11	(85)	2	(15)	0	(0)	0	(0)	**13**	**(4.8)**
	X	13	(52)	12	(48)	0	(0)	0	(0)	**25**	**(9.2)**
2004 Total		**172**	**(63.0)**	**95**	**(34.8)**	**5**	**(1.8)**	**1**	**(0.4)**	**273**	

K.1.4 Admissions by month

		Month																									
		January		February		March		April		May		June		July		August		September		October		November		December		Total	
NHS trust		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003	A	0	(0)	0	(0)	33	(10)	42	(13)	30	(9)	26	(8)	16	(5)	33	(10)	28	(9)	33	(10)	42	(13)	35	(11)	**318**	**(2.4)**
	B	17	(9)	20	(10)	12	(6)	17	(9)	14	(7)	11	(6)	10	(5)	9	(5)	14	(7)	22	(11)	23	(12)	25	(13)	**194**	**(1.5)**
	C	26	(9)	20	(7)	22	(8)	24	(9)	20	(7)	25	(9)	21	(8)	14	(5)	22	(8)	24	(9)	28	(10)	33	(12)	**279**	**(2.1)**
	D	48	(9)	49	(9)	43	(8)	32	(6)	50	(9)	44	(8)	37	(7)	26	(5)	36	(7)	46	(9)	62	(12)	57	(11)	**530**	**(4.0)**
	E	0	(0)	0	(0)	177	(12)	140	(9)	146	(10)	168	(11)	149	(10)	160	(11)	145	(10)	154	(10)	147	(10)	134	(9)	**1520**	**(11.5)**
	F	80	(8)	77	(7)	86	(8)	77	(7)	97	(9)	77	(7)	83	(8)	75	(7)	77	(7)	86	(8)	109	(11)	113	(11)	**1037**	**(7.9)**
	G	6	(8)	5	(6)	9	(11)	13	(16)	6	(8)	6	(8)	7	(9)	5	(6)	5	(6)	6	(8)	3	(4)	8	(10)	**79**	**(0.6)**
	H	0	(0)	0	(0)	18	(8)	13	(6)	22	(10)	20	(9)	24	(11)	18	(8)	19	(9)	24	(11)	18	(8)	36	(17)	**212**	**(1.6)**
	I	83	(9)	74	(8)	80	(9)	79	(9)	69	(8)	74	(8)	75	(8)	61	(7)	70	(8)	72	(8)	88	(10)	85	(9)	**910**	**(6.9)**
	J	0	(0)	0	(0)	10	(13)	13	(17)	13	(17)	10	(13)	10	(13)	2	(3)	2	(3)	1	(1)	5	(7)	10	(13)	**76**	**(0.6)**
	K	82	(10)	63	(7)	73	(8)	65	(8)	75	(9)	68	(8)	72	(8)	64	(7)	71	(8)	67	(8)	77	(9)	82	(10)	**859**	**(6.5)**
	L	25	(11)	22	(9)	18	(8)	16	(7)	18	(8)	20	(8)	13	(5)	11	(5)	15	(6)	29	(12)	18	(8)	33	(14)	**238**	**(1.8)**
	M	33	(8)	28	(7)	46	(11)	34	(8)	35	(9)	37	(9)	31	(8)	27	(7)	32	(8)	25	(6)	40	(10)	39	(10)	**407**	**(3.1)**
	N	34	(10)	26	(8)	30	(9)	34	(10)	36	(11)	23	(7)	28	(8)	28	(8)	26	(8)	27	(8)	22	(6)	25	(7)	**339**	**(2.6)**
	O	0	(0)	0	(0)	54	(12)	37	(8)	51	(11)	57	(12)	62	(14)	44	(10)	45	(10)	39	(9)	32	(7)	36	(8)	**457**	**(3.5)**
	P	74	(7)	90	(9)	97	(9)	88	(8)	92	(9)	80	(8)	79	(8)	84	(8)	82	(8)	88	(8)	85	(8)	99	(10)	**1038**	**(7.9)**
	Q	56	(10)	37	(7)	43	(8)	41	(8)	40	(7)	43	(8)	52	(10)	33	(6)	50	(9)	40	(7)	43	(8)	62	(11)	**540**	**(4.1)**
	R	65	(10)	58	(9)	39	(6)	59	(9)	64	(10)	45	(7)	55	(9)	48	(7)	41	(6)	63	(10)	48	(7)	59	(9)	**644**	**(4.9)**
	S	19	(11)	9	(5)	14	(8)	15	(9)	9	(5)	14	(8)	6	(4)	11	(7)	19	(11)	19	(11)	20	(12)	11	(7)	**166**	**(1.3)**
	T	0	(0)	0	(0)	27	(11)	19	(8)	24	(10)	21	(8)	28	(11)	29	(12)	21	(8)	24	(10)	31	(12)	25	(10)	**249**	**(1.9)**
	U	0	(0)	0	(0)	39	(11)	43	(12)	30	(9)	28	(8)	35	(10)	28	(8)	29	(8)	36	(10)	30	(9)	48	(14)	**346**	**(2.6)**
	V	96	(9)	87	(8)	94	(9)	86	(8)	86	(8)	93	(9)	98	(10)	89	(9)	66	(6)	87	(8)	60	(6)	89	(9)	**1031**	**(7.8)**
	W	66	(9)	62	(8)	62	(8)	56	(8)	52	(7)	77	(10)	56	(8)	57	(8)	63	(9)	62	(8)	65	(9)	62	(8)	**740**	**(5.6)**
	X	78	(8)	82	(8)	91	(9)	74	(7)	80	(8)	85	(9)	66	(7)	77	(8)	94	(9)	96	(10)	99	(10)	69	(7)	**991**	**(7.5)**
2003 Total		**888**	**(6.7)**	**809**	**(6.1)**	**1217**	**(9.2)**	**1117**	**(8.5)**	**1159**	**(8.8)**	**1152**	**(8.7)**	**1113**	**(8.4)**	**1033**	**(7.8)**	**1072**	**(8.1)**	**1170**	**(8.9)**	**1195**	**(9.1)**	**1275**	**(9.7)**	13200	

		Month																									
		January		February		March		April		May		June		July		August		September		October		November		December		Total	
NHS trust		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004	A	33	(8)	35	(8)	41	(9)	37	(9)	33	(8)	33	(8)	37	(9)	28	(6)	43	(10)	40	(9)	40	(9)	34	(8)	**434**	**(3.1)**
	B	24	(8)	35	(12)	34	(12)	20	(7)	12	(4)	16	(6)	17	(6)	23	(8)	25	(9)	24	(8)	29	(10)	27	(9)	**286**	**(2.1)**
	C	40	(15)	25	(9)	26	(10)	25	(9)	15	(6)	13	(5)	21	(8)	17	(6)	19	(7)	11	(4)	24	(9)	30	(11)	**266**	**(1.9)**
	D	53	(9)	53	(9)	58	(10)	49	(8)	45	(8)	42	(7)	45	(8)	39	(7)	46	(8)	46	(8)	59	(10)	49	(8)	**584**	**(4.2)**
	E	130	(7)	142	(8)	166	(9)	146	(8)	148	(8)	159	(9)	151	(8)	159	(9)	154	(9)	135	(8)	143	(8)	148	(8)	**1781**	**(12.9)**
	F	112	(10)	86	(7)	104	(9)	102	(9)	100	(9)	90	(8)	89	(8)	74	(6)	80	(7)	97	(8)	102	(9)	122	(11)	**1158**	**(8.4)**
	G	5	(11)	8	(18)	2	(5)	7	(16)	2	(5)	4	(9)	0	(0)	2	(5)	3	(7)	3	(7)	4	(9)	4	(9)	**44**	**(0.3)**
	H	19	(6)	17	(6)	19	(6)	20	(7)	31	(11)	29	(10)	23	(8)	22	(8)	28	(10)	22	(8)	27	(9)	36	(12)	**293**	**(2.1)**
	I	99	(12)	76	(9)	68	(8)	83	(10)	76	(9)	77	(9)	57	(7)	61	(7)	66	(8)	69	(8)	57	(7)	70	(8)	**859**	**(6.2)**
	J	10	(12)	4	(5)	12	(15)	8	(10)	4	(5)	9	(11)	5	(6)	5	(6)	9	(11)	7	(9)	6	(7)	3	(4)	**82**	**(0.6)**
	K	77	(9)	71	(8)	76	(9)	84	(10)	82	(9)	67	(8)	65	(7)	67	(8)	85	(10)	66	(8)	66	(8)	72	(8)	**878**	**(6.4)**
	L	29	(13)	20	(9)	21	(9)	16	(7)	23	(10)	17	(8)	12	(5)	12	(5)	17	(8)	19	(8)	19	(8)	21	(9)	**226**	**(1.6)**
	M	31	(8)	24	(6)	42	(11)	26	(7)	25	(7)	34	(9)	26	(7)	41	(11)	37	(10)	25	(7)	35	(9)	28	(7)	**374**	**(2.7)**
	N	28	(8)	33	(10)	31	(9)	28	(8)	27	(8)	33	(10)	27	(8)	33	(10)	15	(4)	32	(9)	24	(7)	26	(8)	**337**	**(2.4)**
	O	48	(9)	51	(9)	53	(9)	36	(6)	44	(8)	51	(9)	54	(10)	48	(9)	42	(8)	51	(9)	51	(9)	29	(5)	**558**	**(4.0)**
	P	90	(9)	87	(9)	103	(10)	77	(8)	74	(8)	83	(8)	76	(8)	72	(7)	84	(9)	70	(7)	76	(8)	89	(9)	**981**	**(7.1)**
	Q	47	(9)	62	(11)	48	(9)	45	(8)	41	(7)	45	(8)	44	(8)	37	(7)	35	(6)	51	(9)	42	(8)	52	(9)	**549**	**(4.0)**
	R	43	(7)	46	(8)	50	(9)	47	(8)	45	(8)	53	(9)	37	(6)	50	(9)	46	(8)	70	(12)	55	(9)	43	(7)	**585**	**(4.2)**
	S	18	(11)	6	(4)	16	(10)	10	(6)	13	(8)	12	(7)	17	(10)	18	(11)	9	(5)	17	(10)	15	(9)	15	(9)	**166**	**(1.2)**
	T	29	(8)	18	(5)	27	(7)	26	(7)	42	(11)	29	(8)	34	(9)	28	(8)	29	(8)	31	(8)	38	(10)	35	(10)	**366**	**(2.7)**
	U	41	(10)	38	(10)	39	(10)	28	(7)	32	(8)	23	(6)	29	(7)	23	(6)	27	(7)	35	(9)	43	(11)	34	(9)	**392**	**(2.8)**
	V	108	(11)	92	(9)	85	(9)	87	(9)	71	(7)	69	(7)	68	(7)	76	(8)	80	(8)	73	(7)	90	(9)	84	(9)	**983**	**(7.1)**
	W	69	(11)	70	(11)	49	(8)	50	(8)	53	(8)	53	(8)	45	(7)	44	(7)	52	(8)	49	(8)	56	(9)	58	(9)	**648**	**(4.7)**
	X	88	(9)	89	(9)	83	(9)	77	(8)	80	(8)	104	(11)	80	(8)	89	(9)	58	(6)	61	(6)	80	(8)	75	(8)	**964**	**(7.0)**
2004 Total		**1271**	**(9.2)**	**1188**	**(8.6)**	**1253**	**(9.1)**	**1134**	**(8.2)**	**1118**	**(8.1)**	**1145**	**(8.3)**	**1059**	**(7.7)**	**1068**	**(7.7)**	**1089**	**(7.9)**	**1104**	**(8.0)**	**1181**	**(8.6)**	**1184**	**(8.6)**	13794	

K.1.5 Admissions by mortality risk group

	Paediatric Index of Mortality (recalibrated) (PIM)											
	<1%		1-5%		5-15%		15-30%		30%+		Total	
NHS trust	n	%	n	%	n	%	n	%	n	%	n	%
2003 A	66	(21)	183	(58)	65	(20)	3	(1)	1	(0)	**318**	**(2.4)**
B	54	(28)	102	(53)	32	(16)	3	(2)	3	(2)	**194**	**(1.5)**
C	27	(10)	127	(46)	91	(33)	22	(8)	12	(4)	**279**	**(2.1)**
D	39	(7)	176	(33)	225	(42)	51	(10)	39	(7)	**530**	**(4.0)**
E	224	(15)	732	(48)	401	(26)	112	(7)	51	(3)	**1520**	**(11.5)**
F	59	(6)	531	(51)	340	(33)	74	(7)	33	(3)	**1037**	**(7.9)**
G	2	(3)	39	(49)	27	(34)	7	(9)	4	(5)	**79**	**(0.6)**
H	36	(17)	118	(56)	43	(20)	7	(3)	8	(4)	**212**	**(1.6)**
I	236	(26)	453	(50)	169	(19)	33	(4)	19	(2)	**910**	**(6.9)**
J	19	(25)	47	(62)	6	(8)	4	(5)	0	(0)	**76**	**(0.6)**
K	174	(20)	426	(50)	192	(22)	44	(5)	23	(3)	**859**	**(6.5)**
L	41	(17)	104	(44)	75	(32)	12	(5)	6	(3)	**238**	**(1.8)**
M	84	(21)	192	(47)	98	(24)	19	(5)	14	(3)	**407**	**(3.1)**
N	42	(12)	185	(55)	80	(24)	19	(6)	13	(4)	**339**	**(2.6)**
O	89	(19)	301	(66)	54	(12)	11	(2)	2	(0)	**457**	**(3.5)**
P	165	(16)	615	(59)	215	(21)	24	(2)	19	(2)	**1038**	**(7.9)**
Q	125	(23)	265	(49)	127	(24)	13	(2)	10	(2)	**540**	**(4.1)**
R	110	(17)	347	(54)	151	(23)	25	(4)	11	(2)	**644**	**(4.9)**
S	24	(14)	93	(56)	40	(24)	7	(4)	2	(1)	**166**	**(1.3)**
T	62	(25)	138	(55)	38	(15)	10	(4)	1	(0)	**249**	**(1.9)**
U	18	(5)	225	(65)	76	(22)	19	(5)	8	(2)	**346**	**(2.6)**
V	56	(5)	554	(54)	311	(30)	77	(7)	33	(3)	**1031**	**(7.8)**
W	62	(8)	427	(58)	186	(25)	50	(7)	15	(2)	**740**	**(5.6)**
X	328	(33)	480	(48)	137	(14)	31	(3)	15	(2)	**991**	**(7.5)**
2003 Total	**2142**	**(16.2)**	**6860**	**(52.0)**	**3179**	**(24.1)**	**677**	**(5.1)**	**342**	**(2.6)**	**13200**	

	Paediatric Index of Mortality (recalibrated) (PIM)											
	<1%		1-5%		5-15%		15-30%		30%+		Total	
NHS trust	n	%	n	%	n	%	n	%	n	%	n	%
2004 A	111	(26)	260	(60)	51	(12)	8	(2)	4	(1)	**434**	**(3.1)**
B	68	(24)	169	(59)	43	(15)	4	(1)	2	(1)	**286**	**(2.1)**
C	27	(10)	100	(38)	103	(39)	27	(10)	9	(3)	**266**	**(1.9)**
D	49	(8)	237	(41)	238	(41)	43	(7)	17	(3)	**584**	**(4.2)**
E	264	(15)	850	(48)	491	(28)	126	(7)	50	(3)	**1781**	**(12.9)**
F	86	(7)	603	(52)	365	(32)	70	(6)	34	(3)	**1158**	**(8.4)**
G	1	(2)	13	(30)	23	(52)	6	(14)	1	(2)	**44**	**(0.3)**
H	22	(8)	184	(63)	66	(23)	11	(4)	10	(3)	**293**	**(2.1)**
I	175	(20)	436	(51)	198	(23)	36	(4)	14	(2)	**859**	**(6.2)**
J	22	(27)	45	(55)	11	(13)	3	(4)	1	(1)	**82**	**(0.6)**
K	185	(21)	462	(53)	180	(21)	31	(4)	20	(2)	**878**	**(6.4)**
L	49	(22)	93	(41)	68	(30)	9	(4)	7	(3)	**226**	**(1.6)**
M	72	(19)	176	(47)	98	(26)	18	(5)	10	(3)	**374**	**(2.7)**
N	47	(14)	177	(53)	84	(25)	18	(5)	11	(3)	**337**	**(2.4)**
O	83	(15)	398	(71)	58	(10)	13	(2)	6	(1)	**558**	**(4.0)**
P	140	(14)	545	(56)	259	(26)	27	(3)	10	(1)	**981**	**(7.1)**
Q	125	(23)	283	(52)	114	(21)	19	(3)	8	(1)	**549**	**(4.0)**
R	64	(11)	303	(52)	173	(30)	42	(7)	3	(1)	**585**	**(4.2)**
S	28	(17)	103	(62)	31	(19)	3	(2)	1	(1)	**166**	**(1.2)**
T	109	(30)	178	(49)	59	(16)	16	(4)	4	(1)	**366**	**(2.7)**
U	23	(6)	176	(45)	152	(39)	31	(8)	10	(3)	**392**	**(2.8)**
V	34	(3)	502	(51)	308	(31)	75	(8)	64	(7)	**983**	**(7.1)**
W	43	(7)	361	(56)	204	(31)	30	(5)	10	(2)	**648**	**(4.7)**
X	363	(38)	422	(44)	151	(16)	21	(2)	7	(1)	**964**	**(7.0)**
2004 Total	**2190**	**(15.9)**	**7076**	**(51.3)**	**3528**	**(25.6)**	**687**	**(5.0)**	**313**	**(2.3)**	**13794**	

K.1.6 Admissions by admission type

NHS trust		Admission type: Planned - following surgery n	%	Unplanned - following surgery n	%	Planned - other n	%	Unplanned - other n	%	Unknown n	%	Missing n	%	Total n	%
2003	A	74	(23)	19	(6)	9	(3)	215	(68)	1	(0)	0	(0)	**318**	**(2.4)**
	B	59	(30)	23	(12)	10	(5)	102	(53)	0	(0)	0	(0)	**194**	**(1.5)**
	C	53	(19)	31	(11)	11	(4)	184	(66)	0	(0)	0	(0)	**279**	**(2.1)**
	D	53	(10)	32	(6)	45	(8)	400	(75)	0	(0)	0	(0)	**530**	**(4.0)**
	E	402	(26)	44	(3)	281	(18)	793	(52)	0	(0)	0	(0)	**1520**	**(11.5)**
	F	371	(36)	40	(4)	41	(4)	585	(56)	0	(0)	0	(0)	**1037**	**(7.9)**
	G	1	(1)	7	(9)	1	(1)	70	(89)	0	(0)	0	(0)	**79**	**(0.6)**
	H	47	(22)	8	(4)	43	(20)	102	(48)	2	(1)	10	(5)	**212**	**(1.6)**
	I	385	(42)	35	(4)	64	(7)	426	(47)	0	(0)	0	(0)	**910**	**(6.9)**
	J	27	(36)	4	(5)	3	(4)	39	(51)	0	(0)	3	(4)	**76**	**(0.6)**
	K	269	(31)	81	(9)	104	(12)	405	(47)	0	(0)	0	(0)	**859**	**(6.5)**
	L	35	(15)	18	(8)	17	(7)	168	(71)	0	(0)	0	(0)	**238**	**(1.8)**
	M	160	(39)	32	(8)	13	(3)	202	(50)	0	(0)	0	(0)	**407**	**(3.1)**
	N	147	(43)	27	(8)	15	(4)	150	(44)	0	(0)	0	(0)	**339**	**(2.6)**
	O	310	(68)	12	(3)	32	(7)	101	(22)	2	(0)	0	(0)	**457**	**(3.5)**
	P	562	(54)	36	(3)	16	(2)	424	(41)	0	(0)	0	(0)	**1038**	**(7.9)**
	Q	154	(29)	30	(6)	13	(2)	343	(64)	0	(0)	0	(0)	**540**	**(4.1)**
	R	214	(33)	23	(4)	99	(15)	307	(48)	1	(0)	0	(0)	**644**	**(4.9)**
	S	14	(8)	6	(4)	15	(9)	131	(79)	0	(0)	0	(0)	**166**	**(1.3)**
	T	65	(26)	16	(6)	20	(8)	147	(59)	1	(0)	0	(0)	**249**	**(1.9)**
	U	24	(7)	8	(2)	6	(2)	305	(88)	2	(1)	1	(0)	**346**	**(2.6)**
	V	422	(41)	51	(5)	6	(1)	552	(54)	0	(0)	0	(0)	**1031**	**(7.8)**
	W	293	(40)	13	(2)	34	(5)	393	(53)	7	(1)	0	(0)	**740**	**(5.6)**
	X	268	(27)	8	(1)	234	(24)	474	(48)	7	(1)	0	(0)	**991**	**(7.5)**
2003 Total		**4409**	**(33.4)**	**604**	**(4.6)**	**1132**	**(8.6)**	**7018**	**(53.2)**	**23**	**(0.2)**	**14**	**(0.1)**	**13200**	

NHS trust		Admission type: Planned - following surgery n	%	Unplanned - following surgery n	%	Planned - other n	%	Unplanned - other n	%	Unknown n	%	Missing n	%	Total n	%
2004	A	126	(29)	54	(12)	6	(1)	246	(57)	2	(0)	0	(0)	**434**	**(3.1)**
	B	82	(29)	36	(13)	23	(8)	145	(51)	0	(0)	0	(0)	**286**	**(2.1)**
	C	73	(27)	17	(6)	6	(2)	170	(64)	0	(0)	0	(0)	**266**	**(1.9)**
	D	66	(11)	67	(11)	36	(6)	415	(71)	0	(0)	0	(0)	**584**	**(4.2)**
	E	525	(29)	63	(4)	245	(14)	947	(53)	1	(0)	0	(0)	**1781**	**(12.9)**
	F	390	(34)	24	(2)	98	(8)	646	(56)	0	(0)	0	(0)	**1158**	**(8.4)**
	G	1	(2)	1	(2)	1	(2)	41	(93)	0	(0)	0	(0)	**44**	**(0.3)**
	H	46	(16)	18	(6)	32	(11)	125	(43)	0	(0)	72	(25)	**293**	**(2.1)**
	I	378	(44)	20	(2)	51	(6)	410	(48)	0	(0)	0	(0)	**859**	**(6.2)**
	J	29	(35)	6	(7)	2	(2)	45	(55)	0	(0)	0	(0)	**82**	**(0.6)**
	K	300	(34)	78	(9)	106	(12)	391	(45)	1	(0)	2	(0)	**878**	**(6.4)**
	L	36	(16)	8	(4)	25	(11)	157	(69)	0	(0)	0	(0)	**226**	**(1.6)**
	M	104	(28)	36	(10)	19	(5)	215	(57)	0	(0)	0	(0)	**374**	**(2.7)**
	N	131	(39)	29	(9)	6	(2)	171	(51)	0	(0)	0	(0)	**337**	**(2.4)**
	O	363	(65)	6	(1)	62	(11)	119	(21)	8	(1)	0	(0)	**558**	**(4.0)**
	P	403	(41)	23	(2)	84	(9)	471	(48)	0	(0)	0	(0)	**981**	**(7.1)**
	Q	150	(27)	36	(7)	11	(2)	349	(64)	3	(1)	0	(0)	**549**	**(4.0)**
	R	198	(34)	31	(5)	53	(9)	302	(52)	1	(0)	0	(0)	**585**	**(4.2)**
	S	26	(16)	11	(7)	14	(8)	115	(69)	0	(0)	0	(0)	**166**	**(1.2)**
	T	126	(34)	30	(8)	12	(3)	197	(54)	1	(0)	0	(0)	**366**	**(2.7)**
	U	29	(7)	8	(2)	6	(2)	348	(89)	1	(0)	0	(0)	**392**	**(2.8)**
	V	371	(38)	71	(7)	3	(0)	538	(55)	0	(0)	0	(0)	**983**	**(7.1)**
	W	218	(34)	11	(2)	23	(4)	385	(59)	11	(2)	0	(0)	**648**	**(4.7)**
	X	256	(27)	6	(1)	233	(24)	465	(48)	4	(0)	0	(0)	**964**	**(7.0)**
2004 Total		**4427**	**(32.1)**	**690**	**(5.0)**	**1157**	**(8.4)**	**7413**	**(53.7)**	**33**	**(0.2)**	**74**	**(0.5)**	**13794**	

K.1.7 Admissions by source of admission (admission type 'unplanned - other')

NHS trust		Source of admission: Same hospital n	%	Other hospital n	%	Clinic n	%	Home n	%	Unknown n	%	Total n	%
2003	**A**	121	(56)	93	(43)	0	(0)	1	(0)	0	(0)	**215**	**(3.1)**
	B	83	(81)	17	(17)	0	(0)	2	(2)	0	(0)	**102**	**(1.5)**
	C	63	(34)	121	(66)	0	(0)	0	(0)	0	(0)	**184**	**(2.6)**
	D	107	(27)	292	(73)	0	(0)	1	(0)	0	(0)	**400**	**(5.7)**
	E	193	(24)	585	(74)	3	(0)	12	(2)	0	(0)	**793**	**(11.3)**
	F	55	(9)	530	(91)	0	(0)	0	(0)	0	(0)	**585**	**(8.3)**
	G	66	(94)	4	(6)	0	(0)	0	(0)	0	(0)	**70**	**(1.0)**
	H	62	(61)	35	(34)	1	(1)	2	(2)	2	(2)	**102**	**(1.5)**
	I	184	(43)	242	(57)	0	(0)	0	(0)	0	(0)	**426**	**(6.1)**
	J	37	(95)	1	(3)	0	(0)	1	(3)	0	(0)	**39**	**(0.6)**
	K	152	(38)	252	(62)	1	(0)	0	(0)	0	(0)	**405**	**(5.8)**
	L	76	(45)	82	(49)	0	(0)	10	(6)	0	(0)	**168**	**(2.4)**
	M	128	(63)	70	(35)	0	(0)	4	(2)	0	(0)	**202**	**(2.9)**
	N	81	(54)	69	(46)	0	(0)	0	(0)	0	(0)	**150**	**(2.1)**
	O	47	(47)	52	(51)	0	(0)	2	(2)	0	(0)	**101**	**(1.4)**
	P	232	(55)	191	(45)	0	(0)	1	(0)	0	(0)	**424**	**(6.0)**
	Q	177	(52)	165	(48)	0	(0)	1	(0)	0	(0)	**343**	**(4.9)**
	R	110	(36)	197	(64)	0	(0)	0	(0)	0	(0)	**307**	**(4.4)**
	S	92	(70)	29	(22)	0	(0)	10	(8)	0	(0)	**131**	**(1.9)**
	T	63	(43)	83	(56)	0	(0)	1	(1)	0	(0)	**147**	**(2.1)**
	U	49	(16)	254	(83)	0	(0)	2	(1)	0	(0)	**305**	**(4.3)**
	V	291	(53)	260	(47)	0	(0)	0	(0)	1	(0)	**552**	**(7.9)**
	W	150	(38)	239	(61)	0	(0)	3	(1)	1	(0)	**393**	**(5.6)**
	X	247	(52)	224	(47)	1	(0)	1	(0)	1	(0)	**474**	**(6.8)**
2003 Total		**2866**	**(40.8)**	**4087**	**(58.2)**	**6**	**(0.1)**	**54**	**(0.8)**	**5**	**(0.1)**	7018	

NHS trust		Source of admission: Same hospital n	%	Other hospital n	%	Clinic n	%	Home n	%	Unknown n	%	Total n	%
2004	**A**	136	(55)	108	(44)	0	(0)	2	(1)	0	(0)	**246**	**(3.3)**
	B	118	(81)	20	(14)	0	(0)	7	(5)	0	(0)	**145**	**(2.0)**
	C	61	(36)	109	(64)	0	(0)	0	(0)	0	(0)	**170**	**(2.3)**
	D	134	(32)	281	(68)	0	(0)	0	(0)	0	(0)	**415**	**(5.6)**
	E	222	(23)	703	(74)	7	(1)	15	(2)	0	(0)	**947**	**(12.8)**
	F	84	(13)	562	(87)	0	(0)	0	(0)	0	(0)	**646**	**(8.7)**
	G	40	(98)	1	(2)	0	(0)	0	(0)	0	(0)	**41**	**(0.6)**
	H	60	(48)	65	(52)	0	(0)	0	(0)	0	(0)	**125**	**(1.7)**
	I	208	(51)	202	(49)	0	(0)	0	(0)	0	(0)	**410**	**(5.5)**
	J	42	(93)	3	(7)	0	(0)	0	(0)	0	(0)	**45**	**(0.6)**
	K	184	(47)	205	(52)	1	(0)	1	(0)	0	(0)	**391**	**(5.3)**
	L	58	(37)	93	(59)	0	(0)	6	(4)	0	(0)	**157**	**(2.1)**
	M	141	(66)	69	(32)	0	(0)	5	(2)	0	(0)	**215**	**(2.9)**
	N	89	(52)	82	(48)	0	(0)	0	(0)	0	(0)	**171**	**(2.3)**
	O	41	(34)	76	(64)	1	(1)	1	(1)	0	(0)	**119**	**(1.6)**
	P	243	(52)	228	(48)	0	(0)	0	(0)	0	(0)	**471**	**(6.4)**
	Q	173	(50)	168	(48)	0	(0)	8	(2)	0	(0)	**349**	**(4.7)**
	R	110	(36)	192	(64)	0	(0)	0	(0)	0	(0)	**302**	**(4.1)**
	S	92	(80)	21	(18)	0	(0)	2	(2)	0	(0)	**115**	**(1.6)**
	T	84	(43)	108	(55)	0	(0)	5	(3)	0	(0)	**197**	**(2.7)**
	U	69	(20)	279	(80)	0	(0)	0	(0)	0	(0)	**348**	**(4.7)**
	V	264	(49)	265	(49)	0	(0)	3	(1)	6	(1)	**538**	**(7.3)**
	W	179	(46)	198	(51)	0	(0)	8	(2)	0	(0)	**385**	**(5.2)**
	X	243	(52)	214	(46)	2	(0)	4	(1)	2	(0)	**465**	**(6.3)**
2004 Total		**3075**	**(41.5)**	**4252**	**(57.4)**	**11**	**(0.1)**	**67**	**(0.9)**	**8**	**(0.1)**	7413	

K.1.8 Admissions by care area admitted from (admission type 'unplanned - other')

NHS trust		Care area admitted from: CT scan or similar		Recovery only		HDU		Intermediate care area		ICU / PICU / NICU		Ward		Theatre & recovery		A & E		Unknown		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003	A	1	(0)	0	(0)	0	(0)	2	(1)	16	(7)	72	(33)	36	(17)	66	(31)	22	(10)	0	(0)	**215**	**(3.1)**
	B	1	(1)	0	(0)	0	(0)	2	(2)	2	(2)	42	(41)	0	(0)	53	(52)	0	(0)	2	(2)	**102**	**(1.5)**
	C	8	(4)	0	(0)	34	(18)	2	(1)	50	(27)	30	(16)	16	(9)	44	(24)	0	(0)	0	(0)	**184**	**(2.6)**
	D	0	(0)	5	(1)	36	(9)	11	(3)	30	(8)	132	(33)	28	(7)	156	(39)	1	(0)	1	(0)	**400**	**(5.7)**
	E	8	(1)	1	(0)	12	(2)	99	(12)	281	(35)	197	(25)	14	(2)	169	(21)	0	(0)	12	(2)	**793**	**(11.3)**
	F	1	(0)	0	(0)	24	(4)	0	(0)	105	(18)	211	(36)	29	(5)	160	(27)	55	(9)	0	(0)	**585**	**(8.3)**
	G	4	(6)	0	(0)	24	(34)	2	(3)	0	(0)	5	(7)	3	(4)	32	(46)	0	(0)	0	(0)	**70**	**(1.0)**
	H	0	(0)	0	(0)	0	(0)	8	(8)	6	(6)	48	(47)	2	(2)	35	(34)	2	(2)	1	(1)	**102**	**(1.5)**
	I	6	(1)	1	(0)	2	(0)	3	(1)	58	(14)	208	(49)	13	(3)	128	(30)	7	(2)	0	(0)	**426**	**(6.1)**
	J	1	(3)	0	(0)	0	(0)	1	(3)	0	(0)	11	(28)	2	(5)	23	(59)	0	(0)	1	(3)	**39**	**(0.6)**
	K	6	(1)	3	(1)	2	(0)	19	(5)	126	(31)	143	(35)	19	(5)	87	(21)	0	(0)	0	(0)	**405**	**(5.8)**
	L	0	(0)	0	(0)	7	(4)	0	(0)	12	(7)	90	(54)	3	(2)	46	(27)	0	(0)	10	(6)	**168**	**(2.4)**
	M	7	(3)	0	(0)	10	(5)	1	(0)	10	(5)	64	(32)	10	(5)	96	(48)	0	(0)	4	(2)	**202**	**(2.9)**
	N	5	(3)	0	(0)	7	(5)	1	(1)	27	(18)	58	(39)	3	(2)	49	(33)	0	(0)	0	(0)	**150**	**(2.1)**
	O	3	(3)	0	(0)	3	(3)	15	(15)	24	(24)	48	(48)	1	(1)	4	(4)	1	(1)	2	(2)	**101**	**(1.4)**
	P	14	(3)	1	(0)	20	(5)	17	(4)	34	(8)	174	(41)	13	(3)	149	(35)	1	(0)	1	(0)	**424**	**(6.0)**
	Q	3	(1)	0	(0)	12	(3)	6	(2)	67	(20)	132	(38)	27	(8)	95	(28)	0	(0)	1	(0)	**343**	**(4.9)**
	R	4	(1)	0	(0)	24	(8)	5	(2)	103	(34)	99	(32)	14	(5)	58	(19)	0	(0)	0	(0)	**307**	**(4.4)**
	S	0	(0)	0	(0)	5	(4)	21	(16)	5	(4)	62	(47)	1	(1)	27	(21)	0	(0)	10	(8)	**131**	**(1.9)**
	T	0	(0)	0	(0)	0	(0)	6	(4)	2	(1)	69	(47)	5	(3)	46	(31)	18	(12)	1	(1)	**147**	**(2.1)**
	U	0	(0)	2	(1)	4	(1)	1	(0)	17	(6)	51	(17)	19	(6)	60	(20)	27	(9)	124	(41)	**305**	**(4.3)**
	V	4	(1)	0	(0)	3	(1)	0	(0)	112	(20)	231	(42)	41	(7)	155	(28)	6	(1)	0	(0)	**552**	**(7.9)**
	W	1	(0)	2	(1)	20	(5)	1	(0)	116	(30)	119	(30)	19	(5)	70	(18)	42	(11)	3	(1)	**393**	**(5.6)**
	X	7	(1)	0	(0)	6	(1)	11	(2)	136	(29)	187	(39)	14	(3)	103	(22)	9	(2)	1	(0)	**474**	**(6.8)**
2003 Total		**84**	**(1.2)**	**15**	**(0.2)**	**255**	**(3.6)**	**234**	**(3.3)**	**1339**	**(19.1)**	**2483**	**(35.4)**	**332**	**(4.7)**	**1911**	**(27.2)**	**191**	**(2.7)**	**174**	**(2.5)**	**7018**	

NHS trust		Care area admitted from: CT scan or similar		Recovery only		HDU		Intermediate care area		ICU / PICU / NICU		Ward		Theatre & recovery		A & E		Unknown		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004	A	3	(1)	0	(0)	0	(0)	4	(2)	14	(6)	94	(38)	7	(3)	69	(28)	53	(22)	2	(1)	**246**	**(3.3)**
	B	4	(3)	0	(0)	0	(0)	1	(1)	9	(6)	51	(35)	5	(3)	68	(47)	0	(0)	7	(5)	**145**	**(2.0)**
	C	0	(0)	2	(1)	45	(26)	3	(2)	50	(29)	22	(13)	7	(4)	41	(24)	0	(0)	0	(0)	**170**	**(2.3)**
	D	4	(1)	2	(0)	58	(14)	18	(4)	28	(7)	130	(31)	44	(11)	131	(32)	0	(0)	0	(0)	**415**	**(5.6)**
	E	13	(1)	1	(0)	11	(1)	92	(10)	330	(35)	257	(27)	12	(1)	214	(23)	1	(0)	16	(2)	**947**	**(12.8)**
	F	2	(0)	0	(0)	28	(4)	0	(0)	115	(18)	223	(35)	25	(4)	181	(28)	72	(11)	0	(0)	**646**	**(8.7)**
	G	4	(10)	0	(0)	13	(32)	0	(0)	0	(0)	1	(2)	2	(5)	21	(51)	0	(0)	0	(0)	**41**	**(0.6)**
	H	2	(2)	0	(0)	5	(4)	11	(9)	5	(4)	52	(42)	5	(4)	45	(36)	0	(0)	0	(0)	**125**	**(1.7)**
	I	5	(1)	4	(1)	5	(1)	2	(0)	42	(10)	221	(54)	7	(2)	120	(29)	4	(1)	0	(0)	**410**	**(5.5)**
	J	0	(0)	0	(0)	1	(2)	0	(0)	0	(0)	12	(27)	2	(4)	29	(64)	1	(2)	0	(0)	**45**	**(0.6)**
	K	5	(1)	3	(1)	2	(1)	33	(8)	91	(23)	163	(42)	25	(6)	68	(17)	0	(0)	1	(0)	**391**	**(5.3)**
	L	0	(0)	0	(0)	26	(17)	0	(0)	13	(8)	69	(44)	1	(1)	42	(27)	0	(0)	6	(4)	**157**	**(2.1)**
	M	3	(1)	0	(0)	13	(6)	1	(0)	5	(2)	68	(32)	8	(4)	112	(52)	0	(0)	5	(2)	**215**	**(2.9)**
	N	2	(1)	0	(0)	6	(4)	2	(1)	27	(16)	76	(44)	8	(5)	50	(29)	0	(0)	0	(0)	**171**	**(2.3)**
	O	6	(5)	0	(0)	9	(8)	10	(8)	34	(29)	37	(31)	4	(3)	11	(9)	7	(6)	1	(1)	**119**	**(1.6)**
	P	9	(2)	0	(0)	76	(16)	24	(5)	40	(8)	147	(31)	25	(5)	149	(32)	1	(0)	0	(0)	**471**	**(6.4)**
	Q	6	(2)	4	(1)	17	(5)	6	(2)	54	(15)	126	(36)	19	(5)	108	(31)	1	(0)	8	(2)	**349**	**(4.7)**
	R	4	(1)	2	(1)	32	(11)	4	(1)	79	(26)	103	(34)	13	(4)	65	(22)	0	(0)	0	(0)	**302**	**(4.1)**
	S	0	(0)	0	(0)	0	(0)	18	(16)	1	(1)	66	(57)	0	(0)	28	(24)	0	(0)	2	(2)	**115**	**(1.6)**
	T	0	(0)	1	(1)	1	(1)	4	(2)	3	(2)	80	(41)	8	(4)	48	(24)	47	(24)	5	(3)	**197**	**(2.7)**
	U	0	(0)	0	(0)	14	(4)	2	(1)	18	(5)	93	(27)	15	(4)	121	(35)	85	(24)	0	(0)	**348**	**(4.7)**
	V	1	(0)	0	(0)	5	(1)	0	(0)	116	(22)	232	(43)	39	(7)	133	(25)	9	(2)	3	(1)	**538**	**(7.3)**
	W	2	(1)	0	(0)	36	(9)	1	(0)	92	(24)	112	(29)	32	(8)	74	(19)	28	(7)	8	(2)	**385**	**(5.2)**
	X	6	(1)	0	(0)	6	(1)	10	(2)	116	(25)	219	(47)	9	(2)	80	(17)	15	(3)	4	(1)	**465**	**(6.3)**
2004 Total		**81**	**(1.1)**	**19**	**(0.3)**	**409**	**(5.5)**	**246**	**(3.3)**	**1282**	**(17.3)**	**2654**	**(35.8)**	**322**	**(4.3)**	**2008**	**(27.1)**	**324**	**(4.4)**	**68**	**(0.9)**	**7413**	

K.1.9 Admissions by primary diagnostic group

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003	A	3	(1)	1	(0)	6	(2)	9	(3)	25	(8)	10	(3)	3	(1)	5	(2)	74	(23)	43	(14)	79	(25)	26	(8)	34	(11)	0	(0)	318	(2.4)
	B	1	(1)	11	(6)	4	(2)	3	(2)	41	(21)	10	(5)	0	(0)	6	(3)	27	(14)	0	(0)	70	(36)	2	(1)	19	(10)	0	(0)	194	(1.5)
	C	1	(0)	7	(3)	13	(5)	5	(2)	11	(4)	27	(10)	1	(0)	31	(11)	44	(16)	6	(2)	93	(33)	23	(8)	16	(6)	1	(0)	279	(2.1)
	D	4	(1)	5	(1)	35	(7)	16	(3)	14	(3)	46	(9)	1	(0)	14	(3)	98	(18)	13	(2)	208	(39)	46	(9)	30	(6)	0	(0)	530	(4.0)
	E	12	(1)	36	(2)	592	(39)	18	(1)	94	(6)	41	(3)	3	(0)	41	(3)	138	(9)	36	(2)	388	(26)	41	(3)	80	(5)	0	(0)	1520	(11.5)
	F	0	(0)	7	(1)	463	(45)	20	(2)	11	(1)	56	(5)	1	(0)	28	(3)	121	(12)	4	(0)	236	(23)	30	(3)	46	(4)	14	(1)	1037	(7.9)
	G	0	(0)	0	(0)	6	(8)	1	(1)	3	(4)	6	(8)	0	(0)	0	(0)	28	(35)	2	(3)	31	(39)	2	(3)	0	(0)	0	(0)	79	(0.6)
	H	3	(1)	7	(3)	10	(5)	3	(1)	36	(17)	9	(4)	0	(0)	4	(2)	48	(23)	6	(3)	43	(20)	16	(8)	15	(7)	12	(6)	212	(1.6)
	I	3	(0)	4	(0)	316	(35)	13	(1)	47	(5)	42	(5)	0	(0)	12	(1)	90	(10)	40	(4)	230	(25)	39	(4)	74	(8)	0	(0)	910	(6.9)
	J	1	(1)	5	(7)	1	(1)	2	(3)	17	(22)	0	(0)	2	(3)	1	(1)	12	(16)	0	(0)	21	(28)	4	(5)	4	(5)	6	(8)	76	(0.6)
	K	3	(0)	46	(5)	247	(29)	20	(2)	85	(10)	59	(7)	0	(0)	27	(3)	85	(10)	32	(4)	165	(19)	29	(3)	44	(5)	17	(2)	859	(6.5)
	L	1	(0)	0	(0)	22	(9)	13	(5)	6	(3)	10	(4)	0	(0)	16	(7)	30	(13)	0	(0)	112	(47)	6	(3)	22	(9)	0	(0)	238	(1.8)
	M	0	(0)	2	(0)	13	(3)	7	(2)	39	(10)	9	(2)	0	(0)	60	(15)	77	(19)	41	(10)	122	(30)	28	(7)	9	(2)	0	(0)	407	(3.1)
	N	0	(0)	12	(4)	112	(33)	9	(3)	17	(5)	14	(4)	0	(0)	22	(6)	35	(10)	12	(4)	75	(22)	22	(6)	9	(3)	0	(0)	339	(2.6)
	O	0	(0)	2	(0)	392	(86)	0	(0)	4	(1)	3	(1)	0	(0)	2	(0)	4	(1)	3	(1)	47	(10)	0	(0)	0	(0)	0	(0)	457	(3.5)
	P	3	(0)	37	(4)	438	(42)	11	(1)	59	(6)	41	(4)	6	(1)	48	(5)	91	(9)	35	(3)	203	(20)	31	(3)	35	(3)	0	(0)	1038	(7.9)
	Q	4	(1)	30	(6)	15	(3)	14	(3)	75	(14)	29	(5)	12	(2)	30	(6)	77	(14)	22	(4)	168	(31)	22	(4)	38	(7)	4	(1)	540	(4.1)
	R	14	(2)	25	(4)	227	(35)	13	(2)	58	(9)	23	(4)	0	(0)	21	(3)	75	(12)	12	(2)	123	(19)	25	(4)	28	(4)	0	(0)	644	(4.9)
	S	0	(0)	0	(0)	5	(3)	11	(7)	3	(2)	6	(4)	0	(0)	11	(7)	33	(20)	1	(1)	73	(44)	8	(5)	15	(9)	0	(0)	166	(1.3)
	T	7	(3)	1	(0)	3	(1)	2	(1)	36	(14)	13	(5)	0	(0)	8	(3)	33	(13)	44	(18)	76	(31)	10	(4)	15	(6)	1	(0)	249	(1.9)
	U	5	(1)	1	(0)	10	(3)	21	(6)	5	(1)	29	(8)	0	(0)	0	(0)	76	(22)	0	(0)	172	(50)	2	(1)	12	(3)	13	(4)	346	(2.6)
	V	3	(0)	23	(2)	439	(43)	23	(2)	86	(8)	37	(4)	2	(0)	18	(2)	66	(6)	30	(3)	209	(20)	54	(5)	40	(4)	1	(0)	1031	(7.8)
	W	6	(1)	6	(1)	343	(46)	8	(1)	24	(3)	29	(4)	2	(0)	6	(1)	95	(13)	24	(3)	158	(21)	14	(2)	25	(3)	0	(0)	740	(5.6)
	X	4	(0)	9	(1)	497	(50)	13	(1)	70	(7)	45	(5)	6	(1)	18	(2)	67	(7)	16	(2)	173	(17)	27	(3)	41	(4)	5	(1)	991	(7.5)
2003 Total		78	(0.6)	277	(2.1)	4209	(31.9)	255	(1.9)	866	(6.6)	594	(4.5)	39	(0.3)	429	(3.3)	1524	(11.5)	422	(3.2)	3275	(24.8)	507	(3.8)	651	(4.9)	74	(0.6)	13200	

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004	A	5	(1)	11	(3)	15	(3)	15	(3)	52	(12)	26	(6)	2	(0)	15	(3)	94	(22)	63	(15)	67	(15)	29	(7)	38	(9)	2	(0)	434	(3.1)
	B	2	(1)	23	(8)	9	(3)	8	(3)	70	(24)	11	(4)	0	(0)	3	(1)	42	(15)	2	(1)	85	(30)	10	(3)	21	(7)	0	(0)	286	(2.1)
	C	2	(1)	9	(3)	8	(3)	4	(2)	15	(6)	19	(7)	1	(0)	35	(13)	50	(19)	6	(2)	87	(33)	18	(7)	12	(5)	0	(0)	266	(1.9)
	D	5	(1)	8	(1)	25	(4)	16	(3)	31	(5)	46	(8)	2	(0)	16	(3)	90	(15)	24	(4)	245	(42)	50	(9)	26	(4)	0	(0)	584	(4.2)
	E	9	(1)	33	(2)	687	(39)	39	(2)	126	(7)	47	(3)	3	(0)	45	(3)	145	(8)	51	(3)	475	(27)	56	(3)	65	(4)	0	(0)	1781	(12.9)
	F	1	(0)	10	(1)	538	(46)	17	(1)	10	(1)	58	(5)	1	(0)	31	(3)	125	(11)	3	(0)	299	(26)	17	(1)	37	(3)	11	(1)	1158	(8.4)
	G	0	(0)	0	(0)	2	(5)	2	(5)	3	(7)	9	(20)	0	(0)	0	(0)	13	(30)	0	(0)	9	(20)	1	(2)	5	(11)	0	(0)	44	(0.3)
	H	6	(2)	2	(1)	12	(4)	5	(2)	36	(12)	2	(1)	0	(0)	2	(1)	44	(15)	4	(1)	34	(12)	38	(13)	35	(12)	73	(25)	293	(2.1)
	I	4	(0)	3	(0)	281	(33)	17	(2)	50	(6)	33	(4)	0	(0)	22	(3)	72	(8)	44	(5)	218	(25)	40	(5)	74	(9)	1	(0)	859	(6.2)
	J	2	(2)	4	(5)	1	(1)	4	(5)	21	(26)	1	(1)	0	(0)	0	(0)	16	(20)	0	(0)	21	(26)	0	(0)	8	(10)	4	(5)	82	(0.6)
	K	4	(0)	52	(6)	259	(29)	8	(1)	77	(9)	43	(5)	1	(0)	21	(2)	68	(8)	42	(5)	212	(24)	43	(5)	44	(5)	4	(0)	878	(6.4)
	L	1	(0)	0	(0)	14	(6)	5	(2)	7	(3)	6	(3)	0	(0)	19	(8)	36	(16)	1	(0)	121	(54)	2	(1)	14	(6)	0	(0)	226	(1.6)
	M	2	(1)	4	(1)	13	(3)	10	(3)	29	(8)	25	(7)	0	(0)	38	(10)	53	(14)	24	(6)	135	(36)	25	(7)	16	(4)	0	(0)	374	(2.7)
	N	0	(0)	9	(3)	90	(27)	5	(1)	15	(4)	7	(2)	1	(0)	24	(7)	39	(12)	18	(5)	113	(34)	12	(4)	4	(1)	0	(0)	337	(2.4)
	O	0	(0)	2	(0)	481	(86)	0	(0)	5	(1)	4	(1)	0	(0)	9	(2)	3	(1)	2	(0)	45	(8)	1	(0)	3	(1)	3	(1)	558	(4.0)
	P	1	(0)	40	(4)	360	(37)	9	(1)	58	(6)	35	(4)	0	(0)	59	(6)	80	(8)	40	(4)	243	(25)	33	(3)	23	(2)	0	(0)	981	(7.1)
	Q	4	(1)	22	(4)	15	(3)	7	(1)	56	(10)	37	(7)	0	(0)	31	(6)	68	(12)	31	(6)	225	(41)	27	(5)	22	(4)	4	(1)	549	(4.0)
	R	2	(0)	8	(1)	188	(32)	6	(1)	53	(9)	27	(5)	0	(0)	23	(4)	82	(14)	23	(4)	133	(23)	21	(4)	19	(3)	0	(0)	585	(4.2)
	S	0	(0)	0	(0)	2	(1)	8	(5)	1	(1)	5	(3)	0	(0)	21	(13)	32	(19)	0	(0)	79	(48)	11	(7)	7	(4)	0	(0)	166	(1.2)
	T	10	(3)	4	(1)	11	(3)	3	(1)	44	(12)	26	(7)	1	(0)	3	(1)	42	(11)	66	(18)	120	(33)	23	(6)	13	(4)	0	(0)	366	(2.7)
	U	9	(2)	2	(1)	7	(2)	18	(5)	10	(3)	45	(11)	0	(0)	0	(0)	90	(23)	1	(0)	188	(48)	4	(1)	17	(4)	1	(0)	392	(2.8)
	V	7	(1)	26	(3)	409	(42)	26	(3)	92	(9)	30	(3)	3	(0)	17	(2)	82	(8)	15	(2)	195	(20)	56	(6)	23	(2)	2	(0)	983	(7.1)
	W	2	(0)	9	(1)	254	(39)	11	(2)	21	(3)	21	(3)	0	(0)	4	(1)	98	(15)	17	(3)	183	(28)	4	(1)	21	(3)	3	(0)	648	(4.7)
	X	7	(1)	12	(1)	503	(52)	9	(1)	48	(5)	42	(4)	3	(0)	9	(1)	79	(8)	23	(2)	173	(18)	18	(2)	28	(3)	10	(1)	964	(7.0)
2004 Total		85	(0.6)	293	(2.1)	4184	(30.3)	252	(1.8)	930	(6.7)	605	(4.4)	18	(0.1)	447	(3.2)	1543	(11.2)	500	(3.6)	3705	(26.9)	539	(3.9)	575	(4.2)	118	(0.9)	13794	

K.1.10 Admissions by primary diagnostic group 'planned - following surgery'

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003	A	2	(3)	1	(1)	0	(0)	1	(1)	7	(9)	1	(1)	1	(1)	3	(4)	13	(18)	21	(28)	11	(15)	1	(1)	12	(16)	0	(0)	74	(1.7)
	B	0	(0)	6	(10)	1	(2)	0	(0)	25	(42)	0	(0)	0	(0)	5	(8)	1	(2)	0	(0)	8	(14)	1	(2)	12	(20)	0	(0)	59	(1.3)
	C	0	(0)	3	(6)	1	(2)	0	(0)	3	(6)	0	(0)	0	(0)	31	(58)	0	(0)	4	(8)	5	(9)	2	(4)	4	(8)	0	(0)	53	(1.2)
	D	2	(4)	4	(8)	6	(11)	0	(0)	3	(6)	0	(0)	0	(0)	8	(15)	5	(9)	8	(15)	10	(19)	1	(2)	6	(11)	0	(0)	53	(1.2)
	E	0	(0)	13	(3)	252	(63)	1	(0)	18	(4)	6	(1)	1	(0)	28	(7)	7	(2)	13	(3)	53	(13)	0	(0)	10	(2)	0	(0)	402	(9.1)
	F	0	(0)	6	(2)	282	(76)	0	(0)	7	(2)	0	(0)	0	(0)	26	(7)	0	(0)	2	(1)	25	(7)	4	(1)	13	(4)	6	(2)	371	(8.4)
	G	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	0	(0)	0	(0)	1	(0.0)
	H	0	(0)	1	(2)	4	(9)	0	(0)	22	(47)	2	(4)	0	(0)	3	(6)	2	(4)	3	(6)	4	(9)	0	(0)	6	(13)	0	(0)	47	(1.1)
	I	1	(0)	4	(1)	245	(64)	0	(0)	30	(8)	5	(1)	0	(0)	12	(3)	17	(4)	28	(7)	23	(6)	1	(0)	19	(5)	0	(0)	385	(8.7)
	J	0	(0)	3	(11)	0	(0)	0	(0)	13	(48)	0	(0)	0	(0)	1	(4)	4	(15)	0	(0)	2	(7)	0	(0)	0	(0)	4	(15)	27	(0.6)
	K	1	(0)	10	(4)	136	(51)	0	(0)	20	(7)	4	(1)	0	(0)	23	(9)	13	(5)	27	(10)	20	(7)	1	(0)	10	(4)	4	(1)	269	(6.1)
	L	0	(0)	0	(0)	5	(14)	0	(0)	1	(3)	0	(0)	0	(0)	13	(37)	0	(0)	0	(0)	11	(31)	0	(0)	5	(14)	0	(0)	35	(0.8)
	M	0	(0)	1	(1)	2	(1)	0	(0)	25	(16)	1	(1)	0	(0)	57	(36)	9	(6)	36	(23)	27	(17)	0	(0)	2	(1)	0	(0)	160	(3.6)
	N	0	(0)	6	(4)	82	(56)	2	(1)	10	(7)	0	(0)	0	(0)	21	(14)	4	(3)	10	(7)	11	(7)	0	(0)	1	(1)	0	(0)	147	(3.3)
	O	0	(0)	2	(1)	281	(91)	0	(0)	3	(1)	3	(1)	0	(0)	2	(1)	0	(0)	3	(1)	16	(5)	0	(0)	0	(0)	0	(0)	310	(7.0)
	P	1	(0)	24	(4)	351	(62)	0	(0)	43	(8)	8	(1)	1	(0)	46	(8)	15	(3)	24	(4)	29	(5)	6	(1)	14	(2)	0	(0)	562	(12.7)
	Q	0	(0)	16	(10)	2	(1)	1	(1)	38	(25)	2	(1)	1	(1)	30	(19)	17	(11)	16	(10)	17	(11)	2	(1)	11	(7)	1	(1)	154	(3.5)
	R	0	(0)	5	(2)	157	(73)	0	(0)	12	(6)	2	(1)	0	(0)	18	(8)	9	(4)	4	(2)	5	(2)	0	(0)	2	(1)	0	(0)	214	(4.9)
	S	0	(0)	0	(0)	0	(0)	0	(0)	1	(7)	0	(0)	0	(0)	7	(50)	0	(0)	1	(7)	3	(21)	1	(7)	1	(7)	0	(0)	14	(0.3)
	T	0	(0)	0	(0)	0	(0)	0	(0)	18	(28)	0	(0)	0	(0)	6	(9)	2	(3)	25	(38)	8	(12)	2	(3)	3	(5)	1	(2)	65	(1.5)
	U	0	(0)	1	(4)	1	(4)	1	(4)	3	(13)	0	(0)	0	(0)	0	(0)	1	(4)	0	(0)	14	(58)	0	(0)	0	(0)	3	(13)	24	(0.5)
	V	1	(0)	3	(1)	346	(82)	0	(0)	11	(3)	0	(0)	1	(0)	17	(4)	4	(1)	20	(5)	9	(2)	1	(0)	9	(2)	0	(0)	422	(9.6)
	W	3	(1)	1	(0)	240	(82)	1	(0)	8	(3)	2	(1)	0	(0)	4	(1)	1	(0)	11	(4)	16	(5)	0	(0)	6	(2)	0	(0)	293	(6.6)
	X	1	(0)	6	(2)	153	(57)	0	(0)	33	(12)	9	(3)	4	(1)	16	(6)	9	(3)	8	(3)	13	(5)	3	(1)	10	(4)	3	(1)	268	(6.1)
2003 Total		12	(0.3)	116	(2.6)	2547	(57.8)	7	(0.2)	354	(8.0)	45	(1.0)	9	(0.2)	377	(8.6)	133	(3.0)	265	(6.0)	340	(7.7)	26	(0.6)	156	(3.5)	22	(0.5)	4409	

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004	A	2	(2)	4	(3)	4	(3)	4	(3)	18	(14)	1	(1)	2	(2)	12	(10)	23	(18)	34	(27)	9	(7)	0	(0)	11	(9)	2	(2)	126	(2.8)
	B	1	(1)	13	(16)	0	(0)	0	(0)	39	(48)	0	(0)	0	(0)	2	(2)	5	(6)	0	(0)	12	(15)	1	(1)	9	(11)	0	(0)	82	(1.9)
	C	0	(0)	3	(4)	1	(1)	1	(1)	7	(10)	1	(1)	0	(0)	35	(48)	4	(5)	4	(5)	14	(19)	1	(1)	2	(3)	0	(0)	73	(1.6)
	D	0	(0)	4	(6)	2	(3)	1	(2)	8	(12)	1	(2)	2	(3)	8	(12)	8	(12)	13	(20)	13	(20)	1	(2)	5	(8)	0	(0)	66	(1.5)
	E	2	(0)	2	(0)	335	(64)	2	(0)	35	(7)	4	(1)	0	(0)	36	(7)	9	(2)	20	(4)	65	(12)	1	(0)	14	(3)	0	(0)	525	(11.9)
	F	0	(0)	1	(0)	304	(78)	0	(0)	6	(2)	0	(0)	0	(0)	29	(7)	0	(0)	0	(0)	35	(9)	0	(0)	13	(3)	2	(1)	390	(8.8)
	G	0	(0)	0	(0)	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(0.0)
	H	0	(0)	0	(0)	3	(7)	0	(0)	14	(30)	1	(2)	0	(0)	1	(2)	2	(4)	3	(7)	6	(13)	1	(2)	15	(33)	0	(0)	46	(1.0)
	I	1	(0)	2	(1)	225	(60)	3	(1)	29	(8)	5	(1)	0	(0)	19	(5)	9	(2)	36	(10)	21	(6)	5	(1)	23	(6)	0	(0)	378	(8.5)
	J	0	(0)	3	(10)	0	(0)	0	(0)	13	(45)	1	(3)	0	(0)	0	(0)	6	(21)	0	(0)	4	(14)	0	(0)	2	(7)	0	(0)	29	(0.7)
	K	1	(0)	14	(5)	147	(49)	0	(0)	26	(9)	7	(2)	1	(0)	13	(4)	21	(7)	33	(11)	20	(7)	3	(1)	11	(4)	3	(1)	300	(6.8)
	L	0	(0)	0	(0)	4	(11)	0	(0)	1	(3)	0	(0)	0	(0)	15	(42)	2	(6)	1	(3)	9	(25)	0	(0)	4	(11)	0	(0)	36	(0.8)
	M	0	(0)	3	(3)	0	(0)	0	(0)	18	(17)	1	(1)	0	(0)	38	(37)	7	(7)	19	(18)	14	(13)	1	(1)	3	(3)	0	(0)	104	(2.3)
	N	0	(0)	3	(2)	68	(52)	0	(0)	10	(8)	0	(0)	0	(0)	24	(18)	1	(1)	16	(12)	8	(6)	0	(0)	1	(1)	0	(0)	131	(3.0)
	O	0	(0)	2	(1)	335	(92)	0	(0)	3	(1)	2	(1)	0	(0)	2	(1)	1	(0)	1	(0)	13	(4)	0	(0)	3	(1)	1	(0)	363	(8.2)
	P	1	(0)	13	(3)	233	(58)	1	(0)	27	(7)	2	(0)	0	(0)	55	(14)	5	(1)	25	(6)	32	(8)	2	(0)	7	(2)	0	(0)	403	(9.1)
	Q	1	(1)	8	(5)	2	(1)	0	(0)	28	(19)	1	(1)	0	(0)	28	(19)	14	(9)	27	(18)	34	(23)	0	(0)	4	(3)	3	(2)	150	(3.4)
	R	0	(0)	3	(2)	128	(65)	1	(1)	10	(5)	3	(2)	0	(0)	20	(10)	11	(6)	11	(6)	9	(5)	0	(0)	2	(1)	0	(0)	198	(4.5)
	S	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	15	(58)	4	(15)	0	(0)	6	(23)	0	(0)	1	(4)	0	(0)	26	(0.6)
	T	4	(3)	3	(2)	2	(2)	0	(0)	27	(21)	4	(3)	1	(1)	3	(2)	20	(16)	30	(24)	26	(21)	3	(2)	3	(2)	0	(0)	126	(2.8)
	U	0	(0)	1	(3)	0	(0)	0	(0)	5	(17)	1	(3)	0	(0)	0	(0)	1	(3)	0	(0)	16	(55)	1	(3)	4	(14)	0	(0)	29	(0.7)
	V	0	(0)	6	(2)	310	(84)	1	(0)	12	(3)	1	(0)	0	(0)	12	(3)	5	(1)	6	(2)	12	(3)	0	(0)	4	(1)	2	(1)	371	(8.4)
	W	0	(0)	1	(0)	172	(79)	0	(0)	7	(3)	0	(0)	0	(0)	4	(2)	5	(2)	10	(5)	13	(6)	1	(0)	5	(2)	0	(0)	218	(4.9)
	X	2	(1)	3	(1)	166	(65)	2	(1)	25	(10)	10	(4)	1	(0)	7	(3)	5	(2)	13	(5)	8	(3)	2	(1)	7	(3)	5	(2)	256	(5.8)
2004 Total		15	(0.3)	92	(2.1)	2441	(55.1)	16	(0.4)	369	(8.3)	46	(1.0)	7	(0.2)	378	(8.5)	168	(3.8)	302	(6.8)	399	(9.0)	23	(0.5)	153	(3.5)	18	(0.4)	4427	

K.1.11 Admissions by primary diagnostic group 'unplanned - following surgery'

NHS trust	Diagnostic group																												Total	
	Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003 A	1	(5)	0	(0)	0	(0)	1	(5)	2	(11)	0	(0)	0	(0)	1	(5)	7	(37)	3	(16)	3	(16)	1	(5)	0	(0)	0	(0)	**19**	**(3.1)**
B	0	(0)	1	(4)	0	(0)	0	(0)	9	(39)	0	(0)	0	(0)	1	(4)	1	(4)	0	(0)	10	(43)	0	(0)	1	(4)	0	(0)	**23**	**(3.8)**
C	1	(3)	1	(3)	0	(0)	1	(3)	6	(19)	4	(13)	0	(0)	0	(0)	5	(16)	0	(0)	7	(23)	2	(6)	3	(10)	1	(3)	**31**	**(5.1)**
D	0	(0)	0	(0)	1	(3)	0	(0)	7	(22)	2	(6)	0	(0)	1	(3)	3	(9)	1	(3)	13	(41)	1	(3)	3	(9)	0	(0)	**32**	**(5.3)**
E	0	(0)	0	(0)	7	(16)	0	(0)	4	(9)	2	(5)	0	(0)	0	(0)	5	(11)	4	(9)	15	(34)	1	(2)	6	(14)	0	(0)	**44**	**(7.3)**
F	0	(0)	0	(0)	14	(35)	0	(0)	1	(3)	1	(3)	0	(0)	2	(5)	1	(3)	0	(0)	13	(33)	1	(3)	5	(13)	2	(5)	**40**	**(6.6)**
G	0	(0)	0	(0)	1	(14)	0	(0)	2	(29)	1	(14)	0	(0)	0	(0)	0	(0)	1	(14)	2	(29)	0	(0)	0	(0)	0	(0)	**7**	**(1.2)**
H	0	(0)	1	(13)	1	(13)	0	(0)	1	(13)	0	(0)	0	(0)	0	(0)	1	(13)	0	(0)	0	(0)	0	(0)	3	(38)	1	(13)	**8**	**(1.3)**
I	1	(3)	0	(0)	1	(3)	0	(0)	5	(14)	0	(0)	0	(0)	0	(0)	3	(9)	0	(0)	12	(34)	3	(9)	10	(29)	0	(0)	**35**	**(5.8)**
J	0	(0)	1	(25)	0	(0)	0	(0)	2	(50)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(25)	0	(0)	0	(0)	0	(0)	**4**	**(0.7)**
K	0	(0)	5	(6)	2	(2)	3	(4)	19	(23)	13	(16)	0	(0)	0	(0)	5	(6)	3	(4)	18	(22)	5	(6)	4	(5)	4	(5)	**81**	**(13.4)**
L	0	(0)	0	(0)	4	(22)	1	(6)	2	(11)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	7	(39)	1	(6)	3	(17)	0	(0)	**18**	**(3.0)**
M	0	(0)	0	(0)	1	(3)	0	(0)	7	(22)	0	(0)	0	(0)	1	(3)	4	(13)	2	(6)	14	(44)	3	(9)	0	(0)	0	(0)	**32**	**(5.3)**
N	0	(0)	0	(0)	3	(11)	0	(0)	7	(26)	1	(4)	0	(0)	1	(4)	5	(19)	1	(4)	3	(11)	4	(15)	2	(7)	0	(0)	**27**	**(4.5)**
O	0	(0)	0	(0)	11	(92)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(8)	0	(0)	0	(0)	0	(0)	**12**	**(2.0)**
P	0	(0)	4	(11)	9	(25)	0	(0)	1	(3)	3	(8)	1	(3)	0	(0)	5	(14)	1	(3)	10	(28)	2	(6)	0	(0)	0	(0)	**36**	**(6.0)**
Q	0	(0)	4	(13)	1	(3)	1	(3)	9	(30)	1	(3)	1	(3)	0	(0)	5	(17)	1	(3)	5	(17)	1	(3)	1	(3)	0	(0)	**30**	**(5.0)**
R	0	(0)	2	(9)	1	(4)	1	(4)	8	(35)	0	(0)	0	(0)	0	(0)	3	(13)	1	(4)	5	(22)	0	(0)	2	(9)	0	(0)	**23**	**(3.8)**
S	0	(0)	0	(0)	1	(17)	0	(0)	0	(0)	0	(0)	0	(0)	1	(17)	0	(0)	0	(0)	4	(67)	0	(0)	0	(0)	0	(0)	**6**	**(1.0)**
T	2	(13)	0	(0)	1	(6)	0	(0)	5	(31)	2	(13)	0	(0)	0	(0)	1	(6)	1	(6)	4	(25)	0	(0)	0	(0)	0	(0)	**16**	**(2.6)**
U	0	(0)	0	(0)	0	(0)	0	(0)	1	(13)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	6	(75)	0	(0)	0	(0)	1	(13)	**8**	**(1.3)**
V	0	(0)	3	(6)	3	(6)	2	(4)	25	(49)	3	(6)	0	(0)	0	(0)	0	(0)	2	(4)	5	(10)	3	(6)	4	(8)	1	(2)	**51**	**(8.4)**
W	0	(0)	1	(8)	3	(23)	0	(0)	6	(46)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(8)	0	(0)	2	(15)	0	(0)	**13**	**(2.2)**
X	0	(0)	0	(0)	0	(0)	0	(0)	5	(63)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(13)	1	(13)	1	(13)	0	(0)	**8**	**(1.3)**
2003 Total	5	(0.8)	23	(3.8)	65	(10.8)	10	(1.7)	134	(22.2)	33	(5.5)	2	(0.3)	8	(1.3)	54	(8.9)	21	(3.5)	160	(26.5)	29	(4.8)	50	(8.3)	10	(1.7)	**604**	

NHS trust	Diagnostic group																												Total	
	Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004 A	0	(0)	3	(6)	0	(0)	0	(0)	11	(20)	1	(2)	0	(0)	2	(4)	16	(30)	7	(13)	3	(6)	3	(6)	8	(15)	0	(0)	**54**	**(7.8)**
B	0	(0)	4	(11)	0	(0)	0	(0)	14	(39)	3	(8)	0	(0)	1	(3)	2	(6)	0	(0)	7	(19)	1	(3)	4	(11)	0	(0)	**36**	**(5.2)**
C	0	(0)	2	(12)	1	(6)	0	(0)	4	(24)	1	(6)	0	(0)	0	(0)	6	(35)	0	(0)	2	(12)	0	(0)	1	(6)	0	(0)	**17**	**(2.5)**
D	1	(1)	0	(0)	1	(1)	2	(3)	14	(21)	4	(6)	0	(0)	5	(7)	5	(7)	4	(6)	25	(37)	2	(3)	4	(6)	0	(0)	**67**	**(9.7)**
E	1	(2)	0	(0)	7	(11)	0	(0)	10	(16)	2	(3)	0	(0)	2	(3)	7	(11)	11	(17)	21	(33)	0	(0)	2	(3)	0	(0)	**63**	**(9.1)**
F	0	(0)	0	(0)	9	(38)	0	(0)	0	(0)	0	(0)	0	(0)	1	(4)	0	(0)	1	(4)	9	(38)	1	(4)	2	(8)	1	(4)	**24**	**(3.5)**
G	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**1**	**(0.1)**
H	1	(6)	1	(6)	0	(0)	1	(6)	4	(22)	0	(0)	0	(0)	0	(0)	3	(17)	0	(0)	2	(11)	2	(11)	4	(22)	0	(0)	**18**	**(2.6)**
I	1	(5)	0	(0)	4	(20)	0	(0)	4	(20)	1	(5)	0	(0)	0	(0)	0	(0)	1	(5)	5	(25)	1	(5)	3	(15)	0	(0)	**20**	**(2.9)**
J	1	(17)	0	(0)	0	(0)	0	(0)	2	(33)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(17)	0	(0)	1	(17)	1	(17)	**6**	**(0.9)**
K	0	(0)	4	(5)	10	(13)	1	(1)	11	(14)	10	(13)	0	(0)	2	(3)	4	(5)	4	(5)	22	(28)	5	(6)	5	(6)	0	(0)	**78**	**(11.3)**
L	0	(0)	0	(0)	0	(0)	0	(0)	3	(38)	0	(0)	0	(0)	0	(0)	1	(13)	0	(0)	2	(25)	0	(0)	2	(25)	0	(0)	**8**	**(1.2)**
M	0	(0)	1	(3)	1	(3)	0	(0)	4	(11)	1	(3)	0	(0)	0	(0)	2	(6)	3	(8)	16	(44)	5	(14)	3	(8)	0	(0)	**36**	**(5.2)**
N	0	(0)	1	(3)	1	(3)	1	(3)	2	(7)	0	(0)	1	(3)	0	(0)	5	(17)	2	(7)	15	(52)	0	(0)	1	(3)	0	(0)	**29**	**(4.2)**
O	0	(0)	0	(0)	4	(67)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(17)	1	(17)	0	(0)	0	(0)	0	(0)	**6**	**(0.9)**
P	0	(0)	0	(0)	2	(9)	0	(0)	3	(13)	3	(13)	0	(0)	0	(0)	2	(9)	0	(0)	7	(30)	4	(17)	2	(9)	0	(0)	**23**	**(3.3)**
Q	0	(0)	2	(6)	1	(3)	0	(0)	8	(22)	2	(6)	0	(0)	0	(0)	3	(8)	1	(3)	16	(44)	1	(3)	2	(6)	0	(0)	**36**	**(5.2)**
R	1	(3)	0	(0)	4	(13)	0	(0)	9	(29)	1	(3)	0	(0)	0	(0)	4	(13)	4	(13)	6	(19)	1	(3)	1	(3)	0	(0)	**31**	**(4.5)**
S	0	(0)	0	(0)	0	(0)	1	(9)	1	(9)	0	(0)	0	(0)	2	(18)	1	(9)	0	(0)	5	(45)	0	(0)	1	(9)	0	(0)	**11**	**(1.6)**
T	2	(7)	0	(0)	0	(0)	0	(0)	11	(37)	2	(7)	0	(0)	0	(0)	3	(10)	3	(10)	6	(20)	2	(7)	1	(3)	0	(0)	**30**	**(4.3)**
U	0	(0)	0	(0)	1	(13)	0	(0)	3	(38)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	4	(50)	0	(0)	0	(0)	0	(0)	**8**	**(1.2)**
V	0	(0)	4	(6)	6	(8)	1	(1)	40	(56)	2	(3)	0	(0)	0	(0)	2	(3)	3	(4)	6	(8)	4	(6)	3	(4)	0	(0)	**71**	**(10.3)**
W	0	(0)	3	(27)	1	(9)	0	(0)	2	(18)	1	(9)	0	(0)	0	(0)	0	(0)	0	(0)	3	(27)	0	(0)	1	(9)	0	(0)	**11**	**(1.6)**
X	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(33)	1	(17)	1	(17)	2	(33)	0	(0)	**6**	**(0.9)**
2004 Total	8	(1.2)	25	(3.6)	54	(7.8)	7	(1.0)	160	(23.2)	34	(4.9)	1	(0.1)	15	(2.2)	66	(9.6)	47	(6.8)	185	(26.8)	33	(4.8)	53	(7.7)	2	(0.3)	**690**	

K.1.12 Admissions by primary diagnostic group 'planned - other'

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003	A	0	(0)	0	(0)	0	(0)	0	(0)	1	(11)	0	(0)	0	(0)	0	(0)	1	(11)	5	(56)	1	(11)	0	(0)	1	(11)	0	(0)	**9**	**(0.8)**
	B	0	(0)	2	(20)	0	(0)	0	(0)	4	(40)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(20)	1	(10)	1	(10)	0	(0)	**10**	**(0.9)**
	C	0	(0)	2	(18)	2	(18)	0	(0)	0	(0)	1	(9)	0	(0)	0	(0)	0	(0)	0	(0)	6	(55)	0	(0)	0	(0)	0	(0)	**11**	**(1.0)**
	D	1	(2)	0	(0)	4	(9)	2	(4)	1	(2)	2	(4)	0	(0)	2	(4)	8	(18)	1	(2)	15	(33)	5	(11)	4	(9)	0	(0)	**45**	**(4.0)**
	E	0	(0)	7	(2)	140	(50)	0	(0)	13	(5)	4	(1)	0	(0)	11	(4)	15	(5)	5	(2)	70	(25)	1	(0)	15	(5)	0	(0)	**281**	**(24.8)**
	F	0	(0)	0	(0)	27	(66)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	3	(7)	0	(0)	10	(24)	1	(2)	0	(0)	0	(0)	**41**	**(3.6)**
	G	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	0	(0)	**1**	**(0.1)**
	H	0	(0)	3	(7)	1	(2)	1	(2)	6	(14)	2	(5)	0	(0)	1	(2)	10	(23)	1	(2)	9	(21)	6	(14)	3	(7)	0	(0)	**43**	**(3.8)**
	I	1	(2)	0	(0)	24	(38)	1	(2)	5	(8)	0	(0)	0	(0)	0	(0)	0	(0)	8	(13)	19	(30)	1	(2)	5	(8)	0	(0)	**64**	**(5.7)**
	J	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(67)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(33)	0	(0)	**3**	**(0.3)**
	K	1	(1)	7	(7)	57	(55)	1	(1)	3	(3)	4	(4)	0	(0)	3	(3)	6	(6)	0	(0)	16	(15)	0	(0)	6	(6)	0	(0)	**104**	**(9.2)**
	L	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(12)	1	(6)	0	(0)	14	(82)	0	(0)	0	(0)	0	(0)	**17**	**(1.5)**
	M	0	(0)	0	(0)	1	(8)	0	(0)	0	(0)	1	(8)	0	(0)	2	(15)	3	(23)	0	(0)	6	(46)	0	(0)	0	(0)	0	(0)	**13**	**(1.1)**
	N	0	(0)	5	(33)	5	(33)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(13)	1	(7)	2	(13)	0	(0)	0	(0)	0	(0)	**15**	**(1.3)**
	O	0	(0)	0	(0)	27	(84)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	5	(16)	0	(0)	0	(0)	0	(0)	**32**	**(2.8)**
	P	0	(0)	2	(13)	5	(31)	0	(0)	2	(13)	0	(0)	1	(6)	0	(0)	1	(6)	0	(0)	4	(25)	1	(6)	0	(0)	0	(0)	**16**	**(1.4)**
	Q	0	(0)	0	(0)	0	(0)	0	(0)	3	(23)	1	(8)	0	(0)	0	(0)	0	(0)	0	(0)	7	(54)	0	(0)	2	(15)	0	(0)	**13**	**(1.1)**
	R	13	(13)	10	(10)	20	(20)	1	(1)	18	(18)	2	(2)	0	(0)	2	(2)	8	(8)	2	(2)	15	(15)	1	(1)	7	(7)	0	(0)	**99**	**(8.7)**
	S	0	(0)	0	(0)	3	(20)	0	(0)	0	(0)	0	(0)	0	(0)	3	(20)	3	(20)	0	(0)	4	(27)	0	(0)	2	(13)	0	(0)	**15**	**(1.3)**
	T	2	(10)	0	(0)	0	(0)	0	(0)	2	(10)	0	(0)	0	(0)	2	(10)	6	(30)	3	(15)	4	(20)	0	(0)	1	(5)	0	(0)	**20**	**(1.8)**
	U	0	(0)	0	(0)	1	(17)	0	(0)	1	(17)	1	(17)	0	(0)	0	(0)	1	(17)	0	(0)	2	(33)	0	(0)	0	(0)	0	(0)	**6**	**(0.5)**
	V	0	(0)	0	(0)	1	(17)	0	(0)	1	(17)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(33)	0	(0)	2	(33)	0	(0)	**6**	**(0.5)**
	W	0	(0)	1	(3)	8	(24)	0	(0)	0	(0)	1	(3)	1	(3)	0	(0)	5	(15)	0	(0)	16	(47)	0	(0)	2	(6)	0	(0)	**34**	**(3.0)**
	X	0	(0)	0	(0)	208	(89)	1	(0)	1	(0)	3	(1)	2	(1)	1	(0)	2	(1)	2	(1)	11	(5)	0	(0)	2	(1)	1	(0)	**234**	**(20.7)**
2003 Total		**18**	**(1.6)**	**39**	**(3.4)**	**534**	**(47.2)**	**7**	**(0.6)**	**61**	**(5.4)**	**22**	**(1.9)**	**6**	**(0.5)**	**29**	**(2.6)**	**75**	**(6.6)**	**28**	**(2.5)**	**241**	**(21.3)**	**17**	**(1.5)**	**54**	**(4.8)**	**1**	**(0.1)**	**1132**	

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004	A	0	(0)	1	(17)	0	(0)	0	(0)	2	(33)	0	(0)	0	(0)	0	(0)	0	(0)	1	(17)	1	(17)	0	(0)	1	(17)	0	(0)	**6**	**(0.5)**
	B	0	(0)	5	(22)	1	(4)	0	(0)	8	(35)	0	(0)	0	(0)	0	(0)	2	(9)	1	(4)	4	(17)	0	(0)	2	(9)	0	(0)	**23**	**(2.0)**
	C	0	(0)	1	(17)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	5	(83)	0	(0)	0	(0)	0	(0)	**6**	**(0.5)**
	D	0	(0)	1	(3)	1	(3)	2	(6)	0	(0)	2	(6)	0	(0)	0	(0)	7	(19)	0	(0)	18	(50)	2	(6)	3	(8)	0	(0)	**36**	**(3.1)**
	E	2	(1)	10	(4)	124	(51)	0	(0)	11	(4)	2	(1)	0	(0)	3	(1)	14	(6)	5	(2)	63	(26)	0	(0)	11	(4)	0	(0)	**245**	**(21.2)**
	F	0	(0)	4	(4)	68	(69)	1	(1)	0	(0)	1	(1)	0	(0)	0	(0)	3	(3)	0	(0)	18	(18)	1	(1)	1	(1)	1	(1)	**98**	**(8.5)**
	G	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**1**	**(0.1)**
	H	2	(6)	0	(0)	0	(0)	2	(6)	8	(25)	0	(0)	0	(0)	1	(3)	7	(22)	0	(0)	2	(6)	8	(25)	2	(6)	0	(0)	**32**	**(2.8)**
	I	0	(0)	1	(2)	16	(31)	0	(0)	5	(10)	0	(0)	0	(0)	2	(4)	1	(2)	4	(8)	13	(25)	2	(4)	7	(14)	0	(0)	**51**	**(4.4)**
	J	1	(50)	0	(0)	0	(0)	0	(0)	1	(50)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**2**	**(0.2)**
	K	1	(1)	5	(5)	49	(46)	0	(0)	8	(8)	4	(4)	0	(0)	3	(3)	7	(7)	2	(2)	22	(21)	0	(0)	5	(5)	0	(0)	**106**	**(9.2)**
	L	0	(0)	0	(0)	1	(4)	0	(0)	0	(0)	0	(0)	0	(0)	4	(16)	2	(8)	0	(0)	17	(68)	0	(0)	1	(4)	0	(0)	**25**	**(2.2)**
	M	0	(0)	0	(0)	3	(16)	0	(0)	2	(11)	0	(0)	0	(0)	0	(0)	2	(11)	1	(5)	8	(42)	0	(0)	3	(16)	0	(0)	**19**	**(1.6)**
	N	0	(0)	2	(33)	1	(17)	0	(0)	1	(17)	0	(0)	0	(0)	0	(0)	1	(17)	0	(0)	1	(17)	0	(0)	0	(0)	0	(0)	**6**	**(0.5)**
	O	0	(0)	0	(0)	48	(77)	0	(0)	1	(2)	0	(0)	0	(0)	4	(6)	1	(2)	0	(0)	7	(11)	0	(0)	0	(0)	1	(2)	**62**	**(5.4)**
	P	0	(0)	6	(7)	50	(60)	2	(2)	7	(8)	1	(1)	0	(0)	2	(2)	4	(5)	6	(7)	5	(6)	0	(0)	1	(1)	0	(0)	**84**	**(7.3)**
	Q	0	(0)	1	(9)	0	(0)	0	(0)	1	(9)	0	(0)	0	(0)	2	(18)	3	(27)	0	(0)	4	(36)	0	(0)	0	(0)	0	(0)	**11**	**(1.0)**
	R	1	(2)	3	(6)	14	(26)	0	(0)	9	(17)	3	(6)	0	(0)	1	(2)	2	(4)	4	(8)	10	(19)	0	(0)	6	(11)	0	(0)	**53**	**(4.6)**
	S	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	3	(21)	1	(7)	0	(0)	6	(43)	3	(21)	1	(7)	0	(0)	**14**	**(1.2)**
	T	0	(0)	0	(0)	2	(17)	0	(0)	0	(0)	3	(25)	0	(0)	0	(0)	0	(0)	2	(17)	5	(42)	0	(0)	0	(0)	0	(0)	**12**	**(1.0)**
	U	0	(0)	0	(0)	0	(0)	0	(0)	1	(17)	0	(0)	0	(0)	0	(0)	2	(33)	0	(0)	2	(33)	0	(0)	1	(17)	0	(0)	**6**	**(0.5)**
	V	0	(0)	0	(0)	1	(33)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	2	(67)	0	(0)	0	(0)	0	(0)	**3**	**(0.3)**
	W	0	(0)	0	(0)	4	(17)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	4	(17)	0	(0)	15	(65)	0	(0)	0	(0)	0	(0)	**23**	**(2.0)**
	X	1	(0)	0	(0)	220	(94)	0	(0)	0	(0)	3	(1)	0	(0)	1	(0)	2	(1)	0	(0)	4	(2)	0	(0)	0	(0)	2	(1)	**233**	**(20.1)**
2004 Total		**8**	**(0.7)**	**40**	**(3.5)**	**603**	**(52.1)**	**7**	**(0.6)**	**65**	**(5.6)**	**20**	**(1.7)**	**0**	**(0.0)**	**26**	**(2.2)**	**65**	**(5.6)**	**26**	**(2.2)**	**232**	**(20.1)**	**16**	**(1.4)**	**45**	**(3.9)**	**4**	**(0.3)**	**1157**	

K.1.13 Admissions by primary diagnostic group 'unplanned - other'

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003	A	0	(0)	0	(0)	6	(3)	7	(3)	15	(7)	9	(4)	2	(1)	1	(0)	53	(25)	14	(7)	64	(30)	24	(11)	20	(9)	0	(0)	215	(3.1)
	B	1	(1)	2	(2)	3	(3)	3	(3)	3	(3)	10	(10)	0	(0)	0	(0)	25	(25)	0	(0)	50	(49)	0	(0)	5	(5)	0	(0)	102	(1.5)
	C	0	(0)	1	(1)	10	(5)	4	(2)	2	(1)	22	(12)	1	(1)	0	(0)	39	(21)	2	(1)	75	(41)	19	(10)	9	(5)	0	(0)	184	(2.6)
	D	1	(0)	1	(0)	24	(6)	14	(4)	3	(1)	42	(11)	1	(0)	3	(1)	82	(21)	3	(1)	170	(43)	39	(10)	17	(4)	0	(0)	400	(5.7)
	E	12	(2)	16	(2)	193	(24)	17	(2)	59	(7)	29	(4)	2	(0)	2	(0)	111	(14)	14	(2)	250	(32)	39	(5)	49	(6)	0	(0)	793	(11.3)
	F	0	(0)	1	(0)	140	(24)	20	(3)	3	(1)	55	(9)	1	(0)	0	(0)	117	(20)	2	(0)	188	(32)	24	(4)	28	(5)	6	(1)	585	(8.3)
	G	0	(0)	0	(0)	5	(7)	1	(1)	1	(1)	5	(7)	0	(0)	0	(0)	28	(40)	0	(0)	28	(40)	2	(3)	0	(0)	0	(0)	70	(1.0)
	H	3	(3)	2	(2)	4	(4)	2	(2)	7	(7)	5	(5)	0	(0)	0	(0)	35	(34)	2	(2)	29	(28)	9	(9)	3	(3)	1	(1)	102	(1.5)
	I	0	(0)	0	(0)	46	(11)	12	(3)	7	(2)	37	(9)	0	(0)	0	(0)	70	(16)	4	(1)	176	(41)	34	(8)	40	(9)	0	(0)	426	(6.1)
	J	0	(0)	1	(3)	1	(3)	2	(5)	2	(5)	0	(0)	0	(0)	0	(0)	8	(21)	0	(0)	18	(46)	4	(10)	3	(8)	0	(0)	39	(0.6)
	K	1	(0)	24	(6)	52	(13)	16	(4)	43	(11)	38	(9)	0	(0)	1	(0)	61	(15)	2	(0)	111	(27)	23	(6)	24	(6)	9	(2)	405	(5.8)
	L	1	(1)	0	(0)	13	(8)	12	(7)	3	(2)	10	(6)	0	(0)	1	(1)	29	(17)	0	(0)	80	(48)	5	(3)	14	(8)	0	(0)	168	(2.4)
	M	0	(0)	1	(0)	9	(4)	7	(3)	7	(3)	7	(3)	0	(0)	0	(0)	61	(30)	3	(1)	75	(37)	25	(12)	7	(3)	0	(0)	202	(2.9)
	N	0	(0)	1	(1)	22	(15)	7	(5)	0	(0)	13	(9)	0	(0)	0	(0)	24	(16)	0	(0)	59	(39)	18	(12)	6	(4)	0	(0)	150	(2.1)
	O	0	(0)	0	(0)	71	(70)	0	(0)	1	(1)	0	(0)	0	(0)	0	(0)	4	(4)	0	(0)	25	(25)	0	(0)	0	(0)	0	(0)	101	(1.4)
	P	2	(0)	7	(2)	73	(17)	11	(3)	13	(3)	30	(7)	3	(1)	2	(0)	70	(17)	10	(2)	160	(38)	22	(5)	21	(5)	0	(0)	424	(6.0)
	Q	4	(1)	10	(3)	12	(3)	12	(3)	25	(7)	25	(7)	10	(3)	0	(0)	55	(16)	5	(1)	139	(41)	19	(6)	24	(7)	3	(1)	343	(4.9)
	R	1	(0)	8	(3)	49	(16)	11	(4)	20	(7)	18	(6)	0	(0)	1	(0)	55	(18)	5	(2)	98	(32)	24	(8)	17	(6)	0	(0)	307	(4.4)
	S	0	(0)	0	(0)	1	(1)	11	(8)	2	(2)	6	(5)	0	(0)	0	(0)	30	(23)	0	(0)	62	(47)	7	(5)	12	(9)	0	(0)	131	(1.9)
	T	3	(2)	1	(1)	2	(1)	2	(1)	11	(7)	11	(7)	0	(0)	0	(0)	24	(16)	15	(10)	59	(40)	8	(5)	11	(7)	0	(0)	147	(2.1)
	U	5	(2)	0	(0)	8	(3)	20	(7)	0	(0)	28	(9)	0	(0)	0	(0)	74	(24)	0	(0)	148	(49)	2	(1)	11	(4)	9	(3)	305	(4.3)
	V	2	(0)	17	(3)	89	(16)	21	(4)	49	(9)	34	(6)	1	(0)	1	(0)	62	(11)	8	(1)	193	(35)	50	(9)	25	(5)	0	(0)	552	(7.9)
	W	3	(1)	3	(1)	90	(23)	6	(2)	10	(3)	26	(7)	1	(0)	1	(0)	89	(23)	13	(3)	122	(31)	14	(4)	15	(4)	0	(0)	393	(5.6)
	X	3	(1)	3	(1)	133	(28)	12	(3)	31	(7)	32	(7)	0	(0)	1	(0)	55	(12)	6	(1)	147	(31)	23	(5)	28	(6)	0	(0)	474	(6.8)
2003 Total		42	(0.6)	99	(1.4)	1056	(15.0)	230	(3.3)	317	(4.5)	492	(7.0)	22	(0.3)	14	(0.2)	1261	(18.0)	108	(1.5)	2526	(36.0)	434	(6.2)	389	(5.5)	28	(0.4)	7018	

NHS trust		Diagnostic group: Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other		Missing		Total	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004	A	2	(1)	3	(1)	11	(4)	11	(4)	20	(8)	24	(10)	0	(0)	1	(0)	55	(22)	21	(9)	54	(22)	26	(11)	18	(7)	0	(0)	246	(3.3)
	B	1	(1)	1	(1)	8	(6)	8	(6)	9	(6)	8	(6)	0	(0)	0	(0)	33	(23)	1	(1)	62	(43)	8	(6)	6	(4)	0	(0)	145	(2.0)
	C	2	(1)	3	(2)	6	(4)	3	(2)	4	(2)	17	(10)	1	(1)	0	(0)	40	(24)	2	(1)	66	(39)	17	(10)	9	(5)	0	(0)	170	(2.3)
	D	4	(1)	3	(1)	21	(5)	11	(3)	9	(2)	39	(9)	0	(0)	3	(1)	70	(17)	7	(2)	189	(46)	45	(11)	14	(3)	0	(0)	415	(5.6)
	E	4	(0)	21	(2)	221	(23)	37	(4)	69	(7)	39	(4)	3	(0)	4	(0)	115	(12)	15	(2)	326	(34)	55	(6)	38	(4)	0	(0)	947	(12.8)
	F	1	(0)	5	(1)	157	(24)	16	(2)	4	(1)	57	(9)	1	(0)	1	(0)	122	(19)	2	(0)	237	(37)	15	(2)	21	(3)	7	(1)	646	(8.7)
	G	0	(0)	0	(0)	1	(2)	2	(5)	2	(5)	8	(20)	0	(0)	0	(0)	13	(32)	0	(0)	9	(22)	1	(2)	5	(12)	0	(0)	41	(0.6)
	H	3	(2)	1	(1)	9	(7)	2	(2)	10	(8)	1	(1)	0	(0)	0	(0)	32	(26)	1	(1)	24	(19)	27	(22)	14	(11)	1	(1)	125	(1.7)
	I	2	(0)	0	(0)	36	(9)	14	(3)	12	(3)	27	(7)	0	(0)	1	(0)	62	(15)	3	(1)	179	(44)	32	(8)	41	(10)	1	(0)	410	(5.5)
	J	0	(0)	1	(2)	1	(2)	4	(9)	5	(11)	0	(0)	0	(0)	0	(0)	10	(22)	0	(0)	16	(36)	0	(0)	5	(11)	3	(7)	45	(0.6)
	K	2	(1)	29	(7)	51	(13)	7	(2)	32	(8)	22	(6)	0	(0)	3	(1)	36	(9)	3	(1)	148	(38)	35	(9)	23	(6)	0	(0)	391	(5.3)
	L	1	(1)	0	(0)	9	(6)	5	(3)	3	(2)	6	(4)	0	(0)	0	(0)	31	(20)	0	(0)	93	(59)	2	(1)	7	(4)	0	(0)	157	(2.1)
	M	2	(1)	0	(0)	9	(4)	10	(5)	5	(2)	23	(11)	0	(0)	0	(0)	42	(20)	1	(0)	97	(45)	19	(9)	7	(3)	0	(0)	215	(2.9)
	N	0	(0)	3	(2)	20	(12)	4	(2)	2	(1)	7	(4)	0	(0)	0	(0)	32	(19)	0	(0)	89	(52)	12	(7)	2	(1)	0	(0)	171	(2.3)
	O	0	(0)	0	(0)	88	(74)	0	(0)	1	(1)	2	(2)	0	(0)	3	(3)	1	(1)	0	(0)	22	(18)	1	(1)	0	(0)	1	(1)	119	(1.6)
	P	0	(0)	21	(4)	75	(16)	6	(1)	21	(4)	29	(6)	0	(0)	2	(0)	69	(15)	9	(2)	199	(42)	27	(6)	13	(3)	0	(0)	471	(6.4)
	Q	3	(1)	11	(3)	12	(3)	7	(2)	19	(5)	33	(9)	0	(0)	0	(0)	48	(14)	3	(1)	170	(49)	26	(7)	16	(5)	1	(0)	349	(4.7)
	R	0	(0)	2	(1)	42	(14)	5	(2)	25	(8)	20	(7)	0	(0)	2	(1)	64	(21)	4	(1)	108	(36)	20	(7)	10	(3)	0	(0)	302	(4.1)
	S	0	(0)	0	(0)	2	(2)	7	(6)	0	(0)	5	(4)	0	(0)	1	(1)	26	(23)	0	(0)	62	(54)	8	(7)	4	(3)	0	(0)	115	(1.6)
	T	4	(2)	1	(1)	7	(4)	3	(2)	6	(3)	17	(9)	0	(0)	0	(0)	19	(10)	30	(15)	83	(42)	18	(9)	9	(5)	0	(0)	197	(2.7)
	U	9	(3)	1	(0)	6	(2)	18	(5)	1	(0)	44	(13)	0	(0)	0	(0)	87	(25)	1	(0)	165	(47)	3	(1)	12	(3)	1	(0)	348	(4.7)
	V	7	(1)	16	(3)	92	(17)	24	(4)	40	(7)	27	(5)	3	(1)	5	(1)	75	(14)	6	(1)	175	(33)	52	(10)	16	(3)	0	(0)	538	(7.3)
	W	2	(1)	5	(1)	76	(20)	10	(3)	10	(3)	18	(5)	0	(0)	0	(0)	88	(23)	6	(2)	150	(39)	3	(1)	14	(4)	3	(1)	385	(5.2)
	X	4	(1)	9	(2)	113	(24)	7	(2)	23	(5)	29	(6)	2	(0)	1	(0)	72	(15)	8	(2)	160	(34)	15	(3)	19	(4)	3	(1)	465	(6.3)
2004 Total		53	(0.7)	136	(1.8)	1073	(14.5)	221	(3.0)	332	(4.5)	502	(6.8)	10	(0.1)	27	(0.4)	1242	(16.8)	123	(1.7)	2883	(38.9)	467	(6.3)	323	(4.4)	21	(0.3)	7413	

K.2 Retrieval Data

K.2.1 Admissions by retrieval team type

NHS trust		Retrieval team: Own team n	%	Other specialist team (PICU) n	%	Other specialist team (non-PICU) n	%	Non-specialist team n	%	Unknown n	%	Missing n	%	Total n	%
2003	A	45	(46)	10	(10)	33	(34)	3	(3)	7	(7)	0	(0)	**98**	**(2.2)**
	B	2	(40)	1	(20)	2	(40)	0	(0)	0	(0)	0	(0)	**5**	**(0.1)**
	C	123	(94)	1	(1)	5	(4)	2	(2)	0	(0)	0	(0)	**131**	**(2.9)**
	D	265	(76)	18	(5)	59	(17)	7	(2)	0	(0)	0	(0)	**349**	**(7.7)**
	E	15	(2)	407	(65)	4	(1)	198	(32)	2	(0)	0	(0)	**626**	**(13.7)**
	F	467	(79)	0	(0)	0	(0)	0	(0)	121	(21)	0	(0)	**588**	**(12.9)**
	G	0	(0)	0	(0)	0	(0)	1	(100)	0	(0)	0	(0)	**1**	**(0.0)**
	H	6	(8)	52	(68)	6	(8)	4	(5)	9	(12)	0	(0)	**77**	**(1.7)**
	I	214	(77)	16	(6)	39	(14)	7	(3)	1	(0)	0	(0)	**277**	**(6.1)**
	J	2	(12)	14	(82)	1	(6)	0	(0)	0	(0)	0	(0)	**17**	**(0.4)**
	K	105	(36)	36	(12)	128	(44)	19	(7)	3	(1)	1	(0)	**292**	**(6.4)**
	L	95	(95)	2	(2)	1	(1)	2	(2)	0	(0)	0	(0)	**100**	**(2.2)**
	M	38	(48)	20	(25)	18	(23)	4	(5)	0	(0)	0	(0)	**80**	**(1.8)**
	N	60	(83)	5	(7)	1	(1)	6	(8)	0	(0)	0	(0)	**72**	**(1.6)**
	O	1	(3)	13	(38)	2	(6)	1	(3)	17	(50)	0	(0)	**34**	**(0.7)**
	P	150	(68)	12	(5)	45	(20)	12	(5)	1	(0)	0	(0)	**220**	**(4.8)**
	Q	127	(71)	13	(7)	30	(17)	5	(3)	4	(2)	0	(0)	**179**	**(3.9)**
	R	191	(71)	3	(1)	60	(22)	14	(5)	0	(0)	0	(0)	**268**	**(5.9)**
	S	4	(11)	4	(11)	22	(61)	6	(17)	0	(0)	0	(0)	**36**	**(0.8)**
	T	1	(1)	62	(62)	1	(1)	31	(31)	5	(5)	0	(0)	**100**	**(2.2)**
	U	214	(80)	46	(17)	1	(0)	2	(1)	6	(2)	0	(0)	**269**	**(5.9)**
	V	120	(47)	12	(5)	93	(36)	30	(12)	3	(1)	0	(0)	**258**	**(5.7)**
	W	204	(100)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**204**	**(4.5)**
	X	202	(73)	61	(22)	8	(3)	0	(0)	5	(2)	0	(0)	**276**	**(6.1)**
2003 Total		**2651**	**(58.2)**	**808**	**(17.7)**	**559**	**(12.3)**	**354**	**(7.8)**	**184**	**(4.0)**	**1**	**(0.0)**	**4557**	

NHS trust		Retrieval team: Own team n	%	Other specialist team (PICU) n	%	Other specialist team (non-PICU) n	%	Non-specialist team n	%	Unknown n	%	Missing n	%	Total n	%
	A	24	(22)	24	(22)	62	(56)	0	(0)	1	(1)	0	(0)	**111**	**(2.3)**
	B	4	(14)	16	(57)	7	(25)	1	(4)	0	(0)	0	(0)	**28**	**(0.6)**
	C	99	(86)	9	(8)	2	(2)	5	(4)	0	(0)	0	(0)	**115**	**(2.4)**
	D	247	(72)	22	(6)	55	(16)	21	(6)	0	(0)	0	(0)	**345**	**(7.1)**
	E	7	(1)	573	(70)	5	(1)	227	(28)	2	(0)	0	(0)	**814**	**(16.8)**
	F	447	(70)	0	(0)	0	(0)	0	(0)	189	(30)	0	(0)	**636**	**(13.1)**
	G	0		0		0		0		0		0		**0**	**(0.0)**
	H	8	(8)	76	(75)	10	(10)	5	(5)	3	(3)	0	(0)	**102**	**(2.1)**
	I	167	(76)	11	(5)	22	(10)	19	(9)	0	(0)	0	(0)	**219**	**(4.5)**
	J	1	(9)	10	(91)	0	(0)	0	(0)	0	(0)	0	(0)	**11**	**(0.2)**
	K	106	(36)	32	(11)	124	(42)	31	(11)	2	(1)	0	(0)	**295**	**(6.1)**
	L	94	(95)	1	(1)	4	(4)	0	(0)	0	(0)	0	(0)	**99**	**(2.0)**
	M	43	(48)	28	(31)	8	(9)	11	(12)	0	(0)	0	(0)	**90**	**(1.9)**
	N	65	(66)	5	(5)	12	(12)	16	(16)	0	(0)	0	(0)	**98**	**(2.0)**
	O	1	(1)	19	(22)	2	(2)	0	(0)	64	(74)	0	(0)	**86**	**(1.8)**
	P	173	(66)	20	(8)	44	(17)	24	(9)	1	(0)	0	(0)	**262**	**(5.4)**
	Q	109	(62)	12	(7)	27	(15)	24	(14)	3	(2)	0	(0)	**175**	**(3.6)**
	R	191	(80)	2	(1)	32	(13)	15	(6)	0	(0)	0	(0)	**240**	**(5.0)**
	S	7	(21)	4	(12)	19	(58)	3	(9)	0	(0)	0	(0)	**33**	**(0.7)**
	T	0	(0)	97	(82)	1	(1)	18	(15)	3	(3)	0	(0)	**119**	**(2.5)**
	U	95	(33)	157	(55)	6	(2)	2	(1)	24	(8)	0	(0)	**284**	**(5.9)**
	V	132	(53)	20	(8)	71	(28)	26	(10)	2	(1)	0	(0)	**251**	**(5.2)**
	W	172	(100)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**172**	**(3.6)**
	X	178	(70)	62	(25)	5	(2)	3	(1)	5	(2)	0	(0)	**253**	**(5.2)**
2004 Total		**2370**	**(49.0)**	**1200**	**(24.8)**	**518**	**(10.7)**	**451**	**(9.3)**	**299**	**(6.2)**	**0**	**(0.0)**	**4838**	**100**

K.3 Intervention data

K.3.1 Interventions received

NHS trust		Intervention															
		Invasive ventilation		Non-invasive ventilation		Tracheostomy		ECMO		IV Vasoactive therapy		LVAD		ICP device		Renal support	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2003	A	131	(1)	20	(0)	6	(0)	0	(0)	24	(0)	0	(0)	18	(0)	0	(0)
	B	50	(0)	22	(0)	4	(0)	0	(0)	11	(0)	0	(0)	1	(0)	1	(0)
	C	203	(2)	21	(0)	7	(0)	0	(0)	35	(0)	0	(0)	10	(0)	10	(0)
	D	455	(3)	34	(0)	27	(0)	0	(0)	121	(1)	0	(0)	21	(0)	18	(0)
	E	1183	(9)	352	(3)	70	(1)	50	(0)	638	(5)	0	(0)	19	(0)	53	(0)
	F	824	(6)	76	(1)	14	(0)	0	(0)	283	(2)	1	(0)	0	(0)	28	(0)
	G	52	(0)	10	(0)	3	(0)	0	(0)	25	(0)	0	(0)	3	(0)	0	(0)
	H	145	(1)	10	(0)	4	(0)	0	(0)	24	(0)	1	(0)	11	(0)	15	(0)
	I	575	(4)	50	(0)	21	(0)	2	(0)	270	(2)	1	(0)	26	(0)	64	(0)
	J	22	(0)	6	(0)	2	(0)	0	(0)	3	(0)	0	(0)	0	(0)	1	(0)
	K	513	(4)	58	(0)	17	(0)	27	(0)	269	(2)	2	(0)	48	(0)	53	(0)
	L	146	(1)	43	(0)	14	(0)	0	(0)	30	(0)	0	(0)	3	(0)	2	(0)
	M	215	(2)	36	(0)	12	(0)	0	(0)	42	(0)	1	(0)	22	(0)	8	(0)
	N	265	(2)	30	(0)	12	(0)	0	(0)	103	(1)	0	(0)	26	(0)	9	(0)
	O	338	(3)	5	(0)	3	(0)	6	(0)	261	(2)	2	(0)	0	(0)	5	(0)
	P	842	(6)	7	(0)	14	(0)	0	(0)	311	(2)	0	(0)	2	(0)	3	(0)
	Q	247	(2)	53	(0)	21	(0)	0	(0)	62	(0)	2	(0)	27	(0)	12	(0)
	R	496	(4)	88	(1)	13	(0)	0	(0)	199	(2)	1	(0)	13	(0)	24	(0)
	S	72	(1)	27	(0)	2	(0)	0	(0)	23	(0)	0	(0)	3	(0)	1	(0)
	T	84	(1)	23	(0)	7	(0)	0	(0)	11	(0)	0	(0)	0	(0)	1	(0)
	U	145	(1)	59	(0)	6	(0)	0	(0)	45	(0)	0	(0)	1	(0)	5	(0)
	V	978	(7)	174	(1)	20	(0)	0	(0)	532	(4)	2	(0)	28	(0)	63	(0)
	W	581	(4)	67	(1)	2	(0)	3	(0)	357	(3)	0	(0)	23	(0)	56	(0)
	X	491	(4)	212	(2)	24	(0)	42	(0)	247	(2)	0	(0)	2	(0)	23	(0)
2003 Total		**9053**	**(68.6)**	**1483**	**(11.2)**	**325**	**(2.5)**	**130**	**(1.0)**	**3926**	**(29.7)**	**13**	**(0.1)**	**307**	**(2.3)**	**455**	**(3.4)**

NHS trust		Intervention															
		Invasive ventilation		Non-invasive ventilation		Tracheostomy		ECMO		IV Vasoactive therapy		LVAD		ICP device		Renal support	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2004	A	195	(1)	70	(1)	2	(0)	0	(0)	62	(0)	0	(0)	45	(0)	0	(0)
	B	58	(0)	32	(0)	3	(0)	0	(0)	16	(0)	1	(0)	0	(0)	1	(0)
	C	235	(2)	15	(0)	16	(0)	0	(0)	41	(0)	0	(0)	7	(0)	5	(0)
	D	448	(3)	44	(0)	14	(0)	0	(0)	106	(1)	0	(0)	28	(0)	14	(0)
	E	1404	(10)	351	(3)	65	(0)	52	(0)	813	(6)	1	(0)	40	(0)	60	(0)
	F	921	(7)	124	(1)	14	(0)	0	(0)	358	(3)	0	(0)	2	(0)	26	(0)
	G	40	(0)	5	(0)	0	(0)	0	(0)	26	(0)	0	(0)	4	(0)	0	(0)
	H	166	(1)	13	(0)	3	(0)	0	(0)	41	(0)	1	(0)	15	(0)	12	(0)
	I	583	(4)	52	(0)	30	(0)	2	(0)	318	(2)	0	(0)	26	(0)	60	(0)
	J	12	(0)	3	(0)	0	(0)	0	(0)	2	(0)	0	(0)	0	(0)	2	(0)
	K	537	(4)	62	(0)	35	(0)	24	(0)	282	(2)	2	(0)	47	(0)	37	(0)
	L	140	(1)	62	(0)	12	(0)	0	(0)	39	(0)	0	(0)	2	(0)	0	(0)
	M	205	(1)	47	(0)	23	(0)	0	(0)	47	(0)	1	(0)	23	(0)	6	(0)
	N	240	(2)	66	(0)	6	(0)	0	(0)	73	(1)	0	(0)	12	(0)	6	(0)
	O	389	(3)	46	(0)	8	(0)	5	(0)	317	(2)	0	(0)	1	(0)	4	(0)
	P	817	(6)	14	(0)	2	(0)	0	(0)	277	(2)	4	(0)	2	(0)	11	(0)
	Q	227	(2)	108	(1)	9	(0)	0	(0)	83	(1)	0	(0)	21	(0)	12	(0)
	R	478	(3)	68	(0)	7	(0)	2	(0)	197	(1)	0	(0)	17	(0)	10	(0)
	S	58	(0)	36	(0)	2	(0)	0	(0)	16	(0)	0	(0)	7	(0)	1	(0)
	T	119	(1)	58	(0)	5	(0)	0	(0)	35	(0)	0	(0)	9	(0)	1	(0)
	U	262	(2)	109	(1)	12	(0)	0	(0)	107	(1)	0	(0)	0	(0)	6	(0)
	V	936	(7)	166	(1)	35	(0)	4	(0)	550	(4)	4	(0)	47	(0)	39	(0)
	W	519	(4)	70	(1)	12	(0)	2	(0)	316	(2)	0	(0)	13	(0)	43	(0)
	X	498	(4)	123	(1)	27	(0)	44	(0)	234	(2)	0	(0)	0	(0)	18	(0)
2004 Total		**9487**	**(68.8)**	**1744**	**(12.6)**	**342**	**(2.5)**	**135**	**(1.0)**	**4356**	**(31.6)**	**14**	**(0.1)**	**368**	**(2.7)**	**374**	**(2.7)**

K.3.2 Ventilation received

NHS trust	Number of admissions					Median ventilation duration (days)				Median length of stay (days)						All admissions	
						IV		NIV		IV		NIV		NV			
	IV	NIV	IV & NIV	NV	NK	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)
A	326	90	54	347	43	4	(2-7)	2	(1-3)	5	(3-8)	5.5	(3-2)	2	(1-3)	3	(2-5)
B	108	54	14	332	0	1	(1-1)	1	(1-2.5)	1	(1-2)	3	(2-2)	2	(1-2)	2	(1-2)
C	438	36	21	91	1	2	(1-5)	1	(1-3)	3	(2-6)	4	(3-2)	2	(2-3)	3	(2-5)
D	903	78	40	169	4	3	(2-7)	2	(1-4)	4	(2-8)	6	(3-2)	2	(1-2)	3	(2-7)
E	2587	703	520	531	0	3	(2-6)	2	(1-4)	5	(3-9)	6	(3-2)	2	(2-3)	4	(2-8)
F	1745	200	147	397	0	1	(0-2)		(-)	3	(2-5)	6	(5-2)	2	(2-3)	3	(2-5)
G	92	15	10	26	0	2	(1.5-6)	1	(1-1)	3	(2-7)	6	(3-2)	2	(1-2)	2	(2-6)
H	311	23	14	92	93	2	(1-5)	1	(1-2)	3	(2-7)	6	(2-2)	2	(1-3)	3	(2-5)
I	1158	102	75	466	118	3	(1-6)	2	(1-4)	4	(2-7)	8	(5-2)	2	(2-2)	3	(2-6)
J	34	9	2	113	4	1	(1-1)	1	(1-1)	1	(1-2)	2	(1-2)	2	(1-2)	2	(1-2)
K	1050	120	78	633	12	3	(1-5)	2	(1-4)	4	(2-8)	6	(3-2)	2	(2-3)	3	(2-6)
L	286	105	42	115	0	3	(2-4)	2	(2-4)	3	(2-6)	4	(2-2)	2	(1-2)	3	(2-5)
M	420	83	56	333	1	2	(1-5)	2	(1-4)	4	(2-7)	7	(4-2)	2	(2-2)	3	(2-5)
N	505	96	66	141	0	2	(1-5)	1	(1-2)	3	(2-7)	5	(3-2)	2	(1-2)	3	(2-5)
O	727	51	40	277	0	1	(1-3)	2	(1-4)	4	(2-7)	7	(5-2)	2	(2-3)	3	(2-6)
P	1659	21	11	334	16	3	(2-6)	3	(2-4)	4	(2-8)	5	(4-2)	2	(1-2)	3	(2-7)
Q	474	161	88	541	1	4	(2-7)	2	(1-4)	5	(3-9)	6	(3-2)	2	(2-3)	3	(2-6)
R	974	156	129	227	1	2	(1-4)	1	(1-2)	3	(2-5)	5	(3-2)	2	(1-2)	2	(2-5)
S	130	63	32	171	0	4	(2-6)	2	(1-3)	5	(3-8)	5	(3-2)	2	(2-3)	3	(2-5)
T	203	81	38	369	0	3	(1-7)	3	(1-5)	5	(3-9)	7	(4-2)	2	(2-3)	3	(2-5)
U	407	168	120	147	136	3	(2-6)	2	(1-4)	5	(3-10)	8	(4-2)	2	(1-3)	4	(2-7)
V	1914	340	338	83	15	2	(1-5)	2	(1-3)	3	(2-6)	8	(5-2)	2	(1-2)	3	(2-6)
W	1100	137	112	262	1	2	(1-5)	2	(1-3)	4	(3-7)	8	(4-2)	2	(2-3)	3	(2-6)
X	989	335	266	840	57	2	(1-6)	2	(1-3)	3	(2-7)	3	(2-1)	1	(1-2)	2	(1-4)

K.4 Bed Activity Data

K.4.1 Total number of bed days delivered by age

NHS trust		Age (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	Total n	%
2003	A	639	(37)	403	(23)	470	(27)	213	(12)	**1725**	**(2.3)**
	B	252	(55)	105	(23)	45	(10)	58	(13)	**460**	**(0.6)**
	C	591	(42)	287	(21)	144	(10)	370	(27)	**1392**	**(1.9)**
	D	1680	(45)	1089	(29)	316	(8)	640	(17)	**3725**	**(5.0)**
	E	6920	(64)	2097	(19)	1076	(10)	792	(7)	**10885**	**(14.5)**
	F	2614	(63)	885	(21)	359	(9)	311	(7)	**4169**	**(5.6)**
	G	118	(35)	130	(38)	60	(18)	32	(9)	**340**	**(0.5)**
	H	640	(55)	145	(13)	186	(16)	187	(16)	**1158**	**(1.5)**
	I	2548	(51)	1512	(30)	615	(12)	344	(7)	**5019**	**(6.7)**
	J	84	(58)	38	(26)	13	(9)	9	(6)	**144**	**(0.2)**
	K	2789	(59)	1007	(21)	526	(11)	372	(8)	**4694**	**(6.3)**
	L	305	(25)	474	(38)	240	(19)	224	(18)	**1243**	**(1.7)**
	M	576	(31)	470	(25)	342	(18)	482	(26)	**1870**	**(2.5)**
	N	896	(50)	418	(23)	233	(13)	232	(13)	**1779**	**(2.4)**
	O	2067	(72)	421	(15)	277	(10)	122	(4)	**2887**	**(3.8)**
	P	4072	(55)	1473	(20)	1174	(16)	694	(9)	**7413**	**(9.9)**
	Q	2530	(57)	568	(13)	420	(9)	953	(21)	**4471**	**(6.0)**
	R	1879	(57)	379	(12)	206	(6)	816	(25)	**3280**	**(4.4)**
	S	341	(50)	133	(20)	151	(22)	54	(8)	**679**	**(0.9)**
	T	507	(41)	371	(30)	132	(11)	228	(18)	**1238**	**(1.6)**
	U	1132	(53)	502	(23)	367	(17)	142	(7)	**2143**	**(2.9)**
	V	3385	(59)	1266	(22)	694	(12)	380	(7)	**5725**	**(7.6)**
	W	2558	(56)	930	(20)	499	(11)	578	(13)	**4565**	**(6.1)**
	X	2355	(58)	934	(23)	423	(10)	348	(9)	**4060**	**(5.4)**
2003 Total		**41478**	**(55.3)**	**16037**	**(21.4)**	**8968**	**(11.9)**	**8581**	**(11.4)**	**75064**	

NHS trust		Age (years) <1 n	%	1-4 n	%	5-10 n	%	11-15 n	%	Total n	%
2004	A	976	(40)	539	(22)	595	(25)	304	(13)	**2414**	**(2.8)**
	B	905	(75)	153	(13)	80	(7)	72	(6)	**1210**	**(1.4)**
	C	1125	(63)	308	(17)	166	(9)	201	(11)	**1800**	**(2.1)**
	D	2153	(57)	781	(21)	356	(9)	507	(13)	**3797**	**(4.5)**
	E	7859	(62)	2276	(18)	965	(8)	1479	(12)	**12579**	**(14.8)**
	F	3355	(67)	945	(19)	424	(8)	308	(6)	**5032**	**(5.9)**
	G	43	(25)	53	(31)	44	(26)	32	(19)	**172**	**(0.2)**
	H	442	(27)	589	(36)	317	(20)	272	(17)	**1620**	**(1.9)**
	I	2818	(57)	1080	(22)	552	(11)	478	(10)	**4928**	**(5.8)**
	J	99	(53)	47	(25)	24	(13)	18	(10)	**188**	**(0.2)**
	K	3698	(62)	746	(13)	630	(11)	845	(14)	**5919**	**(7.0)**
	L	574	(43)	441	(33)	145	(11)	164	(12)	**1324**	**(1.6)**
	M	678	(34)	769	(38)	284	(14)	272	(14)	**2003**	**(2.4)**
	N	1080	(57)	472	(25)	104	(5)	253	(13)	**1909**	**(2.2)**
	O	2225	(60)	959	(26)	343	(9)	177	(5)	**3704**	**(4.4)**
	P	3912	(52)	1975	(26)	801	(11)	827	(11)	**7515**	**(8.8)**
	Q	2965	(66)	900	(20)	286	(6)	344	(8)	**4495**	**(5.3)**
	R	1777	(47)	619	(16)	285	(8)	1072	(29)	**3753**	**(4.4)**
	S	287	(38)	155	(20)	90	(12)	227	(30)	**759**	**(0.9)**
	T	648	(38)	539	(31)	200	(12)	327	(19)	**1714**	**(2.0)**
	U	1461	(50)	841	(29)	442	(15)	206	(7)	**2950**	**(3.5)**
	V	3420	(57)	1370	(23)	668	(11)	577	(10)	**6035**	**(7.1)**
	W	3106	(67)	680	(15)	536	(12)	292	(6)	**4614**	**(5.4)**
	X	2643	(59)	925	(21)	394	(9)	522	(12)	**4484**	**(5.3)**
2004 Total		**48249**	**(56.8)**	**18162**	**(21.4)**	**8731**	**(10.3)**	**9776**	**(11.5)**	**84918**	

K.4.2 Bed activity

NHS trust	Bed activity (days)			
	2003		2004	
	Median	(IQR)	Median	(IQR)
A	5	(3-7)	7	(6-8)
B	1	(0-2)	3	(3-4)
C	4	(3-5)	5	(4-6)
D	11	(8-13)	10	(9-13)
E	35	(30-39)	35	(32-38)
F	11	(9-14)	14	(12-17)
G	1	(0-1)	0	(0-1)
H	3	(2-5)	5	(3-6)
I	14	(12-16)	14	(12-15)
J	0	(0-1)	0	(0-1)
K	13	(11-15)	16	(15-18)
L	3	(2-5)	4	(3-5)
M	5	(4-6)	6	(4-7)
N	5	(4-6)	5	(4-6)
O	9	(7-11)	10	(9-12)
P	21	(18-23)	21	(19-23)
Q	9	(8-11)	10	(8-11)
R	9	(8-10)	11	(9-12)
S	2	(1-3)	2	(1-3)
T	4	(2-5)	5	(4-6)
U	7	(4-8)	8	(6-10)
V	16	(14-17)	16	(14-17)
W	13	(11-14)	13	(12-15)
X	11	(10-13)	12	(11-14)

K.4.3 Length of stay by age

NHS trust	Age group (years)							
	< 1 year		1-4 years		5-10 years		11-15 years	
	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)
A	3	(2-6)	3	(2-5)	2	(2-4.5)	2	(2-3)
B	2	(1-2)	2	(1-3)	2	(1-2)	2	(1-3)
C	4	(2-6)	3	(2-6)	2	(2-4)	2	(2-4)
D	4	(2-7)	3	(2-6)	2.5	(2-5)	3	(2-6.5)
E	5	(3-9)	3	(2-6)	3	(2-5)	2	(2-5)
F	3	(2-5)	2	(2-4)	3	(2-4)	2	(2-3)
G	3	(1-7)	2	(2-6)	2	(1-3)	3	(2-4)
H	3	(2-7)	3	(2-5)	2.5	(2-5)	3	(2-5)
I	4	(2-7)	2	(2-5)	2	(2-4)	2	(2-4)
J	2	(1-3)	2	(1-2)	2	(1-2)	1	(1-2)
K	4	(2-7)	2	(2-4)	2	(2-3)	2	(2-5)
L	4	(2-6)	3	(2-5)	2	(2-3.5)	2	(2-3)
M	3	(2-6)	3	(2-4)	2	(2-4)	2	(2-4)
N	3	(2-7)	2	(2-5)	2	(2-3)	2	(2-6)
O	5	(2-8)	3	(2-5)	2	(2-4)	2	(2-3)
P	4	(2-8)	2	(2-5)	2	(2-4)	2	(2-4)
Q	4	(2-6)	3	(2-6)	2	(2-4)	2	(2-4)
R	3	(2-5)	2	(2-3)	2	(1-3)	2	(2-5)
S	3	(2-6)	2	(2-3)	3	(2-3)	2	(2-4)
T	3	(2-5)	2.5	(2-5)	2	(2-4)	3	(2-5)
U	5	(3-8)	3	(2-6)	2	(2-5)	3	(2-6)
V	4	(2-7)	2	(2-4)	2	(2-5)	2	(2-5)
W	4	(3-8)	3	(2-5)	3	(2-4)	3	(2-5)
X	3	(1-6)	2	(1-3)	2	(1-2)	2	(1-3)

K.4.4 Length of stay by primary diagnostic group

NHS trust	Diagnostic group																							
	Blood / lymphatic		Body wall and cavities		Cardiovascular		Endocrine / metabolic		Gastrointestinal		Infection		Multisystem		Musculoskeletal		Neurological		Oncology		Respiratory		Trauma		Other	
	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)	Median	(IQR)
A	4.5	(2-8)	2	(2-3.5)	3	(2-9)	2	(2-3.5)	3	(2-3)	5	(2-8)	2	(2-3)	2	(2-2)	2	(2-4)	3	(2-5)	4	(2-8)	3	(1-6)	2	(1-4)
B	2	(1-3)	1	(1-2)	1	(1-1)	2	(1-3)	2	(1-2)	2	(2-2)	-	(—)	2	(2-2)	2	(1-2)	1	(1-1)	2	(1-3)	1	(1-2)	2	(1-2)
C	3	(1-7)	2.5	(2-5.5)	3	(2-6)	4	(2-8)	3	(2-4)	5.5	(3-7)	2	(2-2)	2	(2-3)	2	(2-4)	2	(2-3)	4	(2-7)	2	(2-4)	2	(2-3)
D	3	(2-5)	2	(1-3)	3	(2-6.5)	4.5	(2-7.5)	2	(2-4)	4	(2-6)	4	(2-57)	2	(2-4)	2	(2-4)	2	(2-3)	5	(3-9)	3	(2-5)	2	(2-3.5)
E	3	(2-8)	6	(3-11)	4	(2-7)	3	(2-7)	5	(2-9.5)	4	(2-7)	5.5	(5-8)	2	(2-2)	3	(2-5)	3	(2-6)	5	(3-9)	3	(2-6)	4	(2-8)
F	3	(3-3)	2	(1-3)	3	(2-5)	3	(2-3)	2	(1-2)	3	(2-6)	10	(4-16)	2	(2-2)	2	(2-3)	2	(2-4)	4	(2-6)	3	(2-5)	2	(2-4)
G	-	(—)	-	(—)	2	(1-2)	1	(1-2)	2	(1-4)	3	(1-5)	-	(—)	-	(—)	3	(2-7)	1.5	(1-2)	3	(1-8)	4	(3-7)	2	(2-3)
H	2	(2-5)	5	(4-7)	3	(2-6)	3	(1.5-6)	3	(2-7.5)	5	(2-8)	-	(—)	2	(2-2)	3	(2-5)	2.5	(2-3)	4	(2-9)	3	(2-5)	3	(2-4)
I	2	(2-5)	2	(2-26)	3	(2-5)	3	(2-5)	3	(2-4)	4	(2-6)	-	(—)	2	(2-2)	2	(2-3)	2	(2-2)	5	(2-8)	2	(2-4)	3	(2-5)
J	1	(1-2)	2	(2-3)	1.5	(1-2)	2	(1-3)	2	(2-3)	2	(2-2)	1.5	(1-2)	2	(2-2)	1	(1-2)	-	(—)	2	(1-2)	2	(1.5-2)	2	(1-3)
K	5	(1-6)	6	(2-13)	3.5	(2-6)	3	(2-6)	3	(2-6)	2.5	(2-5)	9	(9-9)	2	(2-2)	2	(2-3)	2	(2-2)	4	(2-8)	2.5	(2-4)	3	(2-5)
L	1.5	(1-2)	-	(—)	2.5	(2-5)	4	(2-6)	2	(2-2)	4	(2-5)	-	(—)	2	(2-3)	2	(2-4)	2	(2-2)	3	(2-6)	2.5	(1-4)	2	(1-3)
M	6.5	(4-9)	3.5	(2-4)	2	(1-4)	2	(2-2)	2.5	(2-4)	3.5	(2-7)	-	(—)	2	(2-3)	3	(2-4)	2	(2-3)	4	(2-6)	3	(2-7)	2	(2-4)
N	-	(—)	3	(2-7)	3	(2-5)	3	(2-8)	2	(2-5)	5	(2-8)	4	(4-4)	2	(2-2)	2.5	(2-5)	2	(2-3)	4	(2-7.5)	3	(2-5)	2	(2-4)
O	-	(—)	3	(2-6)	3	(2-6)	-	(—)	3	(2-3)	2	(2-4)	-	(—)	2	(2-9)	5	(2-7)	2	(2-3)	3	(2-6.5)	2	(2-2)	2.5	(1-3)
P	1.5	(1-6)	5	(2-11)	3	(2-6)	2.5	(2-5)	3	(2-6)	3	(2-6)	4	(3-6)	2	(2-3)	3	(2-6)	2	(2-6)	5	(3-9)	3	(2-6)	2	(2-4)
Q	2	(1-3)	4	(2-6)	2	(2-5)	3	(2-6.5)	3	(2-5)	3	(2-6)	4	(1.5-7.5)	2	(2-2)	3	(2-5)	2	(2-3)	4	(2-7)	4	(2-8)	2	(2-3.5)
R	1	(1-1)	2	(2-4)	2	(2-4)	2	(1-3)	2	(2-4)	4	(2-8)	-	(—)	2	(2-2)	2	(1-3)	2	(1-3)	4	(2-7)	3	(2-7)	2	(1-3)
S	-	(—)	-	(—)	3	(2-9)	2	(2-3)	2	(1.5-2.5)	3	(2-3)	-	(—)	2	(2-3.5)	2	(2-3)	2	(2-2)	3	(2-6)	3	(2-8)	2.5	(2-4)
T	2	(1-3)	2	(2-3)	2	(2-3)	2	(2-3)	2	(2-3.5)	3	(2-6)	3	(3-3)	3	(2-4)	2	(2-5)	2	(2-4)	3.5	(2-9)	3	(1-6)	2	(2-3)
U	2.5	(2-5)	3	(3-8)	4	(1-6)	3	(2-8)	3	(2-4)	5	(3-9)	-	(—)	-	(—)	2.5	(2-4)	1	(1-1)	4	(2-9)	2	(2-2)	3	(2-5)
V	2	(1-6)	5	(3-6)	2	(2-5)	3	(2-5)	3	(2-6)	3	(2-6)	3	(2-3)	2	(2-2)	2	(2-3)	2	(2-4)	4	(2-8)	2	(2-7)	2	(2-4)
W	2.5	(2-6)	4	(2-6)	3	(2-5)	2	(2-5)	3	(2-6)	3.5	(2-6)	3.5	(3-4)	2	(2-6)	3	(2-7)	3	(2-4)	4	(2-8)	4	(2-5)	2	(2-4)
X	1	(1-3)	4	(2-7)	2	(1-3)	2	(2-3)	3	(2-5)	3	(2-6)	3	(1-8)	2	(1-3)	2	(1-3)	3	(2-4)	6	(2-9)	2	(1-2)	2	(1-3)

K.5 Outcome Data

K.5.1 Outcome at PICU discharge

NHS trust		Outcome: Alive n	Alive %	Dead n	Dead %	Unknown n	Unknown %	Missing n	Missing %	Total n	Total %
2003	**A**	308	(97)	10	(3)	0	(0)	0	(0)	**318**	**(2.4)**
	B	193	(99)	1	(1)	0	(0)	0	(0)	**194**	**(1.5)**
	C	260	(93)	19	(7)	0	(0)	0	(0)	**279**	**(2.1)**
	D	465	(88)	65	(12)	0	(0)	0	(0)	**530**	**(4.0)**
	E	1400	(92)	120	(8)	0	(0)	0	(0)	**1520**	**(11.5)**
	F	995	(96)	42	(4)	0	(0)	0	(0)	**1037**	**(7.9)**
	G	76	(96)	3	(4)	0	(0)	0	(0)	**79**	**(0.6)**
	H	195	(92)	17	(8)	0	(0)	0	(0)	**212**	**(1.6)**
	I	854	(94)	56	(6)	0	(0)	0	(0)	**910**	**(6.9)**
	J	76	(100)	0	(0)	0	(0)	0	(0)	**76**	**(0.6)**
	K	819	(95)	40	(5)	0	(0)	0	(0)	**859**	**(6.5)**
	L	226	(95)	12	(5)	0	(0)	0	(0)	**238**	**(1.8)**
	M	385	(95)	22	(5)	0	(0)	0	(0)	**407**	**(3.1)**
	N	317	(94)	22	(6)	0	(0)	0	(0)	**339**	**(2.6)**
	O	430	(94)	27	(6)	0	(0)	0	(0)	**457**	**(3.5)**
	P	978	(94)	60	(6)	0	(0)	0	(0)	**1038**	**(7.9)**
	Q	507	(94)	33	(6)	0	(0)	0	(0)	**540**	**(4.1)**
	R	624	(97)	20	(3)	0	(0)	0	(0)	**644**	**(4.9)**
	S	162	(98)	4	(2)	0	(0)	0	(0)	**166**	**(1.3)**
	T	243	(98)	6	(2)	0	(0)	0	(0)	**249**	**(1.9)**
	U	323	(93)	23	(7)	0	(0)	0	(0)	**346**	**(2.6)**
	V	964	(94)	66	(6)	0	(0)	1	(0)	**1031**	**(7.8)**
	W	702	(95)	38	(5)	0	(0)	0	(0)	**740**	**(5.6)**
	X	958	(97)	33	(3)	0	(0)	0	(0)	**991**	**(7.5)**
2003 Total		**12460**	**(94.4)**	**739**	**(5.6)**	**0**	**(0.0)**	**1**	**(0.0)**	**13200**	

NHS trust		Outcome: Alive n	Alive %	Dead n	Dead %	Unknown n	Unknown %	Missing n	Missing %	Total n	Total %
2004	**A**	415	(96)	19	(4)	0	(0)	0	(0)	**434**	**(3.1)**
	B	284	(99)	2	(1)	0	(0)	0	(0)	**286**	**(2.1)**
	C	251	(94)	15	(6)	0	(0)	0	(0)	**266**	**(1.9)**
	D	547	(94)	36	(6)	0	(0)	1	(0)	**584**	**(4.2)**
	E	1655	(93)	126	(7)	0	(0)	0	(0)	**1781**	**(12.9)**
	F	1102	(95)	56	(5)	0	(0)	0	(0)	**1158**	**(8.4)**
	G	40	(91)	4	(9)	0	(0)	0	(0)	**44**	**(0.3)**
	H	268	(91)	24	(8)	0	(0)	1	(0)	**293**	**(2.1)**
	I	806	(94)	51	(6)	0	(0)	2	(0)	**859**	**(6.2)**
	J	82	(100)	0	(0)	0	(0)	0	(0)	**82**	**(0.6)**
	K	834	(95)	44	(5)	0	(0)	0	(0)	**878**	**(6.4)**
	L	216	(96)	10	(4)	0	(0)	0	(0)	**226**	**(1.6)**
	M	353	(94)	21	(6)	0	(0)	0	(0)	**374**	**(2.7)**
	N	325	(96)	12	(4)	0	(0)	0	(0)	**337**	**(2.4)**
	O	537	(96)	19	(3)	2	(0)	0	(0)	**558**	**(4.0)**
	P	930	(95)	51	(5)	0	(0)	0	(0)	**981**	**(7.1)**
	Q	534	(97)	15	(3)	0	(0)	0	(0)	**549**	**(4.0)**
	R	567	(97)	17	(3)	0	(0)	1	(0)	**585**	**(4.2)**
	S	163	(98)	3	(2)	0	(0)	0	(0)	**166**	**(1.2)**
	T	355	(97)	11	(3)	0	(0)	0	(0)	**366**	**(2.7)**
	U	372	(95)	20	(5)	0	(0)	0	(0)	**392**	**(2.8)**
	V	901	(92)	78	(8)	0	(0)	4	(0)	**983**	**(7.1)**
	W	616	(95)	32	(5)	0	(0)	0	(0)	**648**	**(4.7)**
	X	928	(96)	36	(4)	0	(0)	0	(0)	**964**	**(7.0)**
2004 Total		**13081**	**(94.8)**	**702**	**(5.1)**	**2**	**(0.0)**	**9**	**(0.1)**	**13794**	

K.5.2 Standardised mortality ratios 2003

	Standardised Mortality Ratio					
	Unadjusted			Adjusted		
NHS trust	SMR	Lower	Upper	SMR	Lower	Upper
A	0.72	0.52	0.97	0.56	0.41	0.76
B	0.55	0.34	0.85	0.6	0.37	0.92
C	1.16	0.73	1.73	0.92	0.58	1.37
D	1.03	0.79	1.32	1.23	0.94	1.57
E	1.19	0.76	1.75	1.16	0.74	1.71
F	0.43	0.12	1.08	0.48	0.13	1.21
G	1.22	0.74	1.86	0.82	0.5	1.25
H	1.09	0.76	1.51	1.22	0.85	1.69
I	0.09	0	0.51	0.13	0	0.73
J	0.97	0.61	1.44	0.8	0.51	1.19
K	1.14	0.89	1.44	0.91	0.71	1.15
L	1.43	0.85	2.24	1.38	0.81	2.15
M	0.56	0.27	1.02	0.93	0.45	1.69
N	0.83	0.6	1.12	0.82	0.59	1.11
O	0.92	0.65	1.25	0.84	0.6	1.14
P	0.9	0.47	1.54	0.83	0.43	1.42
Q	0.43	0.16	0.92	0.68	0.25	1.46
R	0.68	0.14	1.91	0.42	0.09	1.19
S	1.06	0.7	1.51	1.84	1.23	2.64
T	1.1	0.84	1.41	1.22	0.93	1.57
U	1.41	1.18	1.67	1.14	0.95	1.36
V	0.59	0.41	0.83	0.81	0.56	1.13
W	0	0	0.85	0	0	1.6
X	2.19	1.71	2.74	1.12	0.88	1.41

K.5.3 Standardised mortality ratios 2004

	Standardised Mortality Ratio					
	Unadjusted			Adjusted		
NHS Trust	SMR	Lower	Upper	SMR	Lower	Upper
A	0.95	0.72	1.22	0.71	0.54	0.91
B	0.57	0.33	0.91	0.52	0.31	0.83
C	0.7	0.36	1.21	0.57	0.3	0.98
D	1.02	0.77	1.33	1.09	0.82	1.43
E	1	0.62	1.53	0.73	0.45	1.11
F	0.36	0.07	1.02	0.52	0.11	1.51
G	1.11	0.63	1.79	0.65	0.37	1.06
H	0.54	0.3	0.88	0.59	0.33	0.97
I	0.14	0.02	0.49	0.21	0.03	0.77
J	1.1	0.69	1.66	0.97	0.6	1.46
K	1.56	1.24	1.93	0.89	0.71	1.1
L	1.61	1.05	2.35	1.33	0.87	1.95
M	0.86	0.52	1.33	1.25	0.76	1.93
N	0.98	0.72	1.31	0.92	0.67	1.22
O	0.97	0.67	1.36	0.84	0.58	1.17
P	0.87	0.42	1.57	0.7	0.34	1.26
Q	0.59	0.3	1.04	0.7	0.35	1.24
R	1.79	0.5	4.26	0.95	0.26	2.26
S	0.67	0.41	1.03	0.97	0.59	1.5
T	1.17	0.87	1.52	1.18	0.88	1.53
U	1.39	1.16	1.64	1.09	0.91	1.29
V	0.73	0.52	1.01	1.1	0.77	1.51
W	0	0	0.87	0	0	1.19
X	1.21	0.86	1.66	0.8	0.56	1.09

K.5.4 Standardised mortality ratios 2003 - 2004 combined

	Standardised Mortality Ratio					
	Unadjusted (95% CI)			Adjusted (95% CI)		
NHS trust	SMR	Lower	Upper	SMR	Lower	Upper
A	0.84	0.68	1.01	0.64	0.52	0.77
B	0.56	0.4	0.77	0.56	0.4	0.77
C	0.94	0.66	1.3	0.76	0.53	1.04
D	1.03	0.85	1.23	1.16	0.96	1.39
E	1.09	0.8	1.46	0.91	0.66	1.21
F	0.4	0.16	0.8	0.5	0.2	1.02
G	1.17	0.82	1.61	0.74	0.51	1.02
H	0.83	0.61	1.09	0.92	0.68	1.21
I	0.12	0.02	0.34	0.18	0.04	0.52
J	1.03	0.75	1.38	0.87	0.64	1.16
K	1.34	1.14	1.57	0.9	0.76	1.05
L	1.52	1.1	2.03	1.35	0.98	1.81
M	0.72	0.49	1.03	1.12	0.75	1.59
N	0.91	0.73	1.12	0.87	0.7	1.07
O	0.94	0.74	1.19	0.84	0.66	1.05
P	0.89	0.56	1.33	0.76	0.48	1.14
Q	0.52	0.3	0.82	0.7	0.41	1.11
R	1.07	0.43	2.13	0.62	0.25	1.23
S	0.85	0.63	1.12	1.34	0.99	1.78
T	1.13	0.93	1.36	1.2	0.99	1.44
U	1.4	1.23	1.57	1.11	0.98	1.26
V	0.66	0.52	0.83	0.94	0.73	1.18
W	0	0	0.43	0	0	0.69
X	1.7	1.39	2.04	0.98	0.81	1.18

Note: In tables K.5.2, K.5.3 and K.5.4 the NHS trust identifiers have been scrambled and do not match those used in the remainder of the report.

K.5.5 Status at 30 days post discharge from PICU

NHS trust		Status: Alive n	Alive %	Dead n	Dead %	Unknown n	Unknown %	Missing n	Missing %	Total n	Total %
2003	A	0	(0)	0	(0)	308	(100)	0	(0)	**308**	**(2.5)**
	B	181	(94)	1	(1)	0	(0)	11	(6)	**193**	**(1.5)**
	C	256	(98)	2	(1)	0	(0)	2	(1)	**260**	**(2.1)**
	D	441	(95)	11	(2)	3	(1)	10	(2)	**465**	**(3.7)**
	E	0	(0)	0	(0)	1395	(100)	5	(0)	**1400**	**(11.2)**
	F	0	(0)	0	(0)	995	(100)	0	(0)	**995**	**(8.0)**
	G	70	(92)	6	(8)	0	(0)	0	(0)	**76**	**(0.6)**
	H	10	(5)	0	(0)	185	(95)	0	(0)	**195**	**(1.6)**
	I	825	(97)	28	(3)	1	(0)	0	(0)	**854**	**(6.9)**
	J	64	(84)	3	(4)	0	(0)	9	(12)	**76**	**(0.6)**
	K	224	(27)	11	(1)	314	(38)	270	(33)	**819**	**(6.6)**
	L	195	(86)	1	(0)	0	(0)	30	(13)	**226**	**(1.8)**
	M	368	(96)	2	(1)	4	(1)	11	(3)	**385**	**(3.1)**
	N	13	(4)	2	(1)	299	(94)	3	(1)	**317**	**(2.5)**
	O	414	(96)	6	(1)	10	(2)	0	(0)	**430**	**(3.5)**
	P	950	(97)	17	(2)	2	(0)	9	(1)	**978**	**(7.8)**
	Q	446	(88)	11	(2)	32	(6)	18	(4)	**507**	**(4.1)**
	R	521	(83)	7	(1)	87	(14)	9	(1)	**624**	**(5.0)**
	S	133	(82)	5	(3)	0	(0)	24	(15)	**162**	**(1.3)**
	T	0	(0)	0	(0)	243	(100)	0	(0)	**243**	**(2.0)**
	U	0	(0)	0	(0)	197	(61)	126	(39)	**323**	**(2.6)**
	V	942	(98)	22	(2)	0	(0)	0	(0)	**964**	**(7.7)**
	W	0	(0)	0	(0)	702	(100)	0	(0)	**702**	**(5.6)**
	X	601	(63)	22	(2)	329	(34)	6	(1)	**958**	**(7.7)**
2003 Total		**6654**	**(53.4)**	**157**	**(1.3)**	**5106**	**(41.0)**	**543**	**(4.4)**	**12460**	

NHS trust		Status: Alive n	Alive %	Dead n	Dead %	Unknown n	Unknown %	Missing n	Missing %	Total n	Total %
2004	A	18	(4)	0	(0)	387	(93)	10	(2)	**415**	**(3.2)**
	B	250	(88)	7	(2)	0	(0)	27	(10)	**284**	**(2.2)**
	C	230	(92)	3	(1)	2	(1)	16	(6)	**251**	**(1.9)**
	D	482	(88)	18	(3)	39	(7)	8	(1)	**547**	**(4.2)**
	E	0	(0)	0	(0)	1653	(100)	2	(0)	**1655**	**(12.7)**
	F	0	(0)	0	(0)	1102	(100)	0	(0)	**1102**	**(8.4)**
	G	37	(93)	2	(5)	0	(0)	1	(3)	**40**	**(0.3)**
	H	15	(6)	0	(0)	252	(94)	1	(0)	**268**	**(2.0)**
	I	785	(97)	19	(2)	1	(0)	1	(0)	**806**	**(6.2)**
	J	70	(85)	1	(1)	2	(2)	9	(11)	**82**	**(0.6)**
	K	187	(22)	6	(1)	543	(65)	98	(12)	**834**	**(6.4)**
	L	176	(81)	6	(3)	0	(0)	34	(16)	**216**	**(1.7)**
	M	306	(87)	10	(3)	18	(5)	19	(5)	**353**	**(2.7)**
	N	8	(2)	2	(1)	314	(97)	1	(0)	**325**	**(2.5)**
	O	480	(89)	2	(0)	55	(10)	0	(0)	**537**	**(4.1)**
	P	912	(98)	7	(1)	1	(0)	10	(1)	**930**	**(7.1)**
	Q	445	(83)	22	(4)	39	(7)	28	(5)	**534**	**(4.1)**
	R	444	(78)	7	(1)	112	(20)	4	(1)	**567**	**(4.3)**
	S	145	(89)	5	(3)	0	(0)	13	(8)	**163**	**(1.2)**
	T	0	(0)	0	(0)	355	(100)	0	(0)	**355**	**(2.7)**
	U	0	(0)	0	(0)	372	(100)	0	(0)	**372**	**(2.8)**
	V	885	(98)	16	(2)	0	(0)	0	(0)	**901**	**(6.9)**
	W	0	(0)	0	(0)	616	(100)	0	(0)	**616**	**(4.7)**
	X	464	(50)	17	(2)	434	(47)	13	(1)	**928**	**(7.1)**
2004 Total		**6339**	**(48.5)**	**150**	**(1.1)**	**6297**	**(48.1)**	**295**	**(2.3)**	**13081**	

APPENDIX L STAFFING SURVEY FORMS

L.1 Doctors' survey form

Hospital:…… *Unit / Ward name or number:……*

PICANet staff survey
October 2004

Grade of medical staff	1) Sessions per week for PICU	2) Total WTE in post	3) Staff in post (head count)	4) How many hours per week are PICU specific?	5) Is a shift pattern worked?	6) Number with PALS courses	7) EU directive compliant?	8) Other responsibilities when on call for PICU
SHO General Paediatrics								
SHO Anaesthetics								
SPR General Paediatrics								
SPR Anaesthetics								
SPR PICU training								
Fellows								
Trust Doctors								
Consultant General Paediatrics								
Consultant Anaesthetics								
Consultant Paediatric Intensivist								
Consultant Paediatric Specialist, please specify								
Other, please specifiy								

L.2 Nurses' survey form

Hospital:…… *Unit / Ward name or number:……*

PICANet staff survey
October 2004

Grade of nursing staff	1) Funded unit establishment (as WTE)	2) Total WTE in post	3) Staff in post (head count)	4) Current vacancies (as WTE)	5) Number long term sick	6) Number on maternity	7) Number with PALS courses	8) Number with further PIC training	9) Other ICU qualification please specify
A									
B									
C									
D									
E									
F clinical									
F non - clinical									
G clinical									
G non - clinical									
H clinical									
H non - clinical									
I									
Other, please specify									
Other, please specify									

L.3 Snapshot Survey Form

Hospital:…… *Unit / Ward name or number:……*

PICANet staff survey
Please complete for Wednesday 6th October 2004 at 12 Noon

Nursing Grade	1) Number on duty at 12 Noon	Number with ICU qualification
A		
B		
C		
D		
E		
F		
F non - clinical		
G clinical		
G non - clinical		
H clinical		
H non - clinical		
I		
Other		
Agency / Bank (include Grade)		
Agency / Bank (include Grade)		
Agency / Bank (include Grade)		

Number of beds on your unit	2) Total number funded	3) Open at 12 Noon	4) Closed - staff shortage	5) Closed - financial	6) Closed - infection
ICU designated					
HDU designated					

Medical Grade	1) On duty at 12 Noon	1) On call at 12 Noon
SHO General Paediatrics		
SHO Anaesthetics		
SPR General Paediatrics		
SPR Anaesthetics		
SPR PICU training		
Fellows		
Trust Doctors		
Consultant General Paedatrics		
Consultant Anaesthetics		
Consultant Paediatric Intensivist		
Consultant Paediatric Specialist		
Other, please specify		

Note: When survey forms were sent out units received 4 copies of this page to be completed at 12 midday and 12 midnight on both Wednesday 6th and Sunday 10th October 2004.

APPENDIX M POLICY FOR UNITS FALLING OUTSIDE THE CONTROL LIMITS

Proposed PICANet policy on units lying outside the control limits of the mortality ratio funnel plots (dated February 5th 2005)

PICANet is required by the Department of Health to report on the mortality outcomes of all children admitted for paediatric intensive care. The PICANet Clinical Advisory Group and Steering Group recommended that the mortality outcomes from each unit be adjusted for the illness severity of the child at admission using Paediatric Index of Mortality (PIM). PICANet reports the unadjusted mortality outcome from all units and a mortality ratio based on the ratio of the mortality observed in each unit to that expected using PIM. The 2004 Annual report used the published algorithm to assign a probability of mortality to each value of PIM, for the current report the algorithm derived from the recently completed United Kingdom Paediatric Intensive Care Outcome Study will be applied.

Earlier work published by members of PICANet team[1] has highlighted the problems of attempting to rank units on their annual mortality, whether unadjusted or adjusted. However, PICANet has also recognised the need to attempt to identify units which appear to have outcomes very different to other units. Consequently, in the 2004 report PICANet published a funnel plot of the observed to expected mortality ratio of individual paediatric intensive care units. The funnel plots are constructed in such a way that there is an approximately 5% chance of a unit falling outside the control limits if the distribution of the mortality ratios is random.

The mortality ratio is calculated for each PICU by dividing the expected number of deaths calculated using the published PIM algorithm by the observed number of deaths for each unit. The mortality ratio is then plotted on the y-axis against the number of admissions to the PICU on the x-axis. In order to satisfy the condition that if the overall distribution of the mortality ratios is random there exists an approximately 5% chance of a unit falling outside the control limits, then the upper and lower control limits constructed at an individual unit level must represent not 95% confidence intervals, but 99.9% confidence intervals around a mortality ratio of 1 by number of admissions.[2] This is analogous to increasing the confidence interval (or significance level) when correcting for multiple comparisons in data containing numerous groups.

A unit whose mortality ratio lies outside of these control limits will be identified as having returned data that is markedly different to the other units. It is important to note that a unit lying outside the control limits is not sufficient evidence to suggest a PICU

has either markedly higher or markedly lower mortality than the other units, it merely indicates that the data they have returned is different to that of other units. For those units that do lie outside the control limits it is the unit's responsibility to contact PICANet. PICANet will work with the units, following the plan below until the issue is resolved.

1 Review the data to investigate whether there are data driven reasons for a unit lying outside of the control limits. (It is known that risk-adjustment tools can be unreliable when a unit has a particularly high proportion of patients at either end of the bounds of the tool.)

2 Review the data quality of the unit. The quality of the data is the units' responsibility. PICANet will provide feedback from unit visits and central validation procedures. Units will be expected to check the quality of individual data items.

3 Plot the data quality indicators over time to identify whether the anomaly can be traced to a certain data collection period.

4 Plot the mortality ratio over time to identify whether the anomaly can be traced to a certain data collection period.

5 Plot the observed mortality over time to identify whether the anomaly can be traced to a certain data collection period.

6 Plot the expected mortality over time to identify whether the anomaly can be traced to a certain data collection period.

7 Investigate the primary reason for admission to the unit. If the PICU has a markedly different diagnostic case mix compared with other units this may suggest further refinements to the risk-adjustment method are required.

8 Produce a brief summary report of the above to be forwarded to the Lead clinician at the PICU concerned together with an invitation to meet in person to review the data with the PICANet team.

References:

1 Parry GJ, Gould CR, McCabe CJ, Tarnow-Mordi WO. Annual league tables of hospital mortality in neonatal intensive care: A longitudinal study. *BMJ* 1998; 316:1931-1935.

2 D Spiegelhalter Funnel plots for institutional comparison. Qual. Saf. Health Care, Dec 2002; 11: 390-a - 391.

APPENDIX N DATA / INFORMATION REQUESTS RECEIVED TO DATE

Date request received	Name	Position and place of work	Information required	Status
24.09.04	Dr Mark Darowski	Clinical Director Leeds Teaching Hospitals Trust	SMR for each of the 3 elements of our service. SMR (with Confidence Intervals) for oncology patients admitted to SJUH as compared to a national aggregate score for oncology patients.	Completed
04.10.04	Dr Charles Stack	Director ICU Sheffield Children's Hospital	Prevalence rate of admissions per 1000 children per year in PICANet recording area for the last full year.	Completed
06.10.04	Dr Simon Nadel and Department of Health	Consultant in Paediatric Intensive Care St. Mary's Hospital	Number of children admitted to UK PICUs with a diagnosis of acute viral bronchiolitis and/ or a diagnosis of RSV infection.	Completed
18.11.04	Dr Andrew Magnay	Consultant in Paediatric Intensive Care University Hospital of North Staffordshire NHS Trust	4 monthly reports on patients admitted to University Hospital of North Staffordshire. Number of admissions by PCT Number of completed episodes by PCT Number of days on PICU associated with these completed episodes by PCT Number of admissions by SHA Number of completed episodes by SHA Number of days on PICU associated with these completed episodes by SHA.	Agreed (to be completed Spring 2005)
30.11.04	Dr Ulf Theilen	Locum Consultant Royal Hospital for Sick Children Edinburgh	Number of admissions to PICUs in 2003 and 2004 with diagnosis of pertussis. Number of deaths of these children; age at time of death, use of inotropes yes/no, level of max mean airway pressure (if available).	Completed
07.12.2004	Mark Campbell	SHO Anaesthetics Derriford Hospital, Plymouth	Epidemiology of critical care in teenagers: a) % and numbers of admissions of 13 to 19 year olds (inclusive) b) diagnostic case-mix by broad category c) male:female ratio d) length of stay and invasive or non-invasive ventilation (mean, median and IQR) e) outcome f) the same figures for those admitted from another hospital or from an intensive care unit	Rejected

Date request received	Name	Position and place of work	Information required	Status
23.12.2004	Roz Jones	Specialised Services Commissioning Manager Specialised Services Commissioning Team Cheshire West PCT	Number and length of stay in days of children with bronchiolitis, RSV positive bronchiolitis and RSV negative infection in children admitted to Royal Liverpool Children's Hospital and Royal Manchester Children's Hospital for the period of March 2003 - February 2004.	Completed
10.01.2005	Peter Davis	Consultant Paediatric Intensivist Bristol Royal Hospital for Children	All children admitted to PICUs in UK with burns. Breakdown of numbers per unit, with identification of units if possible. First portion of postcode to identify geographical location of home address of all PICU burn admissions.	Completed (without unit identification)
17.01.2005 resubmitted 27.01.05	Andrew Gill	Senior Casemix Consultant NHS Information Authority	Full PICANet data set requested to develop robust Healthcare Resource groups for Paediatric Critical Care. This work has been commissioned by the Department of Health to support the Payment by Results (PbR) initiative.	Initially rejected but further discussions in progress
06.07.2004	Tom Blyth	Clinical Research Fellow Department of Paediatric Allergy St Mary's Hospital	The study is entitled 'Risk factors for life-threatening asthma in childhood: a case controlled study'. The aim is to investigate whether various factors are related to life-threatening asthma. Aggregated data (from units where approval has been given) see below: Number of children admitted with asthma (primary reason for admission) Ages of those children admitted with asthma Whether or not the children were ventilated If 'yes' number of days ventilated Length of stay on PICU.	Information provided monthly where unit agreement has been received

APPENDIX O GLOSSARY

The following abbreviations / terms are used within the text of this report:

A&E	Accident and Emergency Department
AFPD	All Fields Postcode Directory
AIC	Adult Intensive Care
AICU	Adult Intensive Care Unit
ANZPICS	Australian and New Zealand Paediatric Intensive Care Registry
AWACIC	All Wales Audit of Critically Ill Children
Bland-Altman plot	Statistical method of comparing 2 measurement techniques
CAG	Clinical Advisory Group
CATS	Children's Acute Transfer Team
CT3	Clinical Terms 3
CCAD	Central Cardiac Audit Database
DoCDat:	Directory of Clinical Databases
ECMO	Extra corporeal membrane oxygenation
ENB	English National Board
GOSH	Great Ormond Street Hospital
HB	Health Board
ICNARC	Intensive Care National Audit & Research Centre
ICP device	Intracranial pressure device
Invasive ventilation	Any method of ventilation delivered via an endotracheal tube, laryngeal mask or tracheostomy tube
IQR	Interquartile Ranges
IV Vasoactive therapy	Intravenous drug therapy to support blood pressure and heart rate
LVAD	Left ventricular assist device to support cardiac function
NHS	National Health Service
NHSIA	National Health Service Information Authority
NHSnet	A secure wide area network connecting NHS organisations managed for the NHS, which enables units to transfer data electronically to PICANet
Non–invasive ventilation	Any method of ventilation NOT given via an endotracheal tube, laryngeal mask or tracheostomy tube
PIAG	Patient Information Advisory Group
PIC	Paediatric Intensive Care
PICANet	Paediatric Intensive Care Audit Network
PICNET	Paediatric Intensive Care Network
PICS	Paediatric Intensive Care Society
PICS SG	Paediatric Intensive Care Society Study Group
PICU	Paediatric Intensive Care Unit
PIM	Paediatric Index of Mortality
PIM 2	Paediatric Index of Mortality version 2
READ Codes	Clinical terminology used to describe clinical conditions, symptoms and observations

RSV	Respiratory syncytial virus
SHO	Senior House Officer
SG	Steering Group
SNOMED	Terminology enabling a consistent way of indexing, storing, retrieving and aggregating clinical data across specialities and sites of care
SMR	Standardised mortality ratio
SHA	Strategic Health Authority
SWACIC	South West Audit of Critically Ill Children
WTE	Whole time equivalent
UK PICOS	United Kingdom Paediatric Intensive Care Outcome Study

www.picanet.org.uk

picanet@sheffield.ac.uk

University of Leeds

Patricia McKinney & Roger Parslow

PICANet
Paediatric Epidemiology Group
Unit of Epidemiology & Health Services Research
University of Leeds
30 Hyde Terrace
Leeds LS2 9LN

r.c.parslow@leeds.ac.uk

0113 343 4856

University of Leicester

Elizabeth Draper & Nicky Davey

PICANet
Department of Health Sciences
University of Leicester
22-28 Princess Road West
Leicester LE1 6TP

nd36@leicester.ac.uk

0116 252 5450

University of Sheffield

Gareth Parry, Sam Jones, Tim Chater & Gill Ryder

PICANet
Health Services Research, ScHARR
University of Sheffield
Regent Court, 30 Regent Street
Sheffield S1 4DA

sam.jones@sheffield.ac.uk

0114 222 0772

Pan Thames Co-ordinator

Krish Thiru

PICANet
Cardiorespiratory and Critical Care Division
Room 8086, Level 8 – Nurses Home
Great Ormond Street Hospital for Children
Great Ormond Street
London WC1 3JH

thiruk1@gosh.nhs.uk

020 7762 6713

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