

EXECUTIVE SUMMARY

Third PICANet National Report January 2004 – December 2005

- 1 PICANet is an audit of paediatric intensive care activity in England, Wales and Scotland providing information on delivery of care to critically ill children and an evidence base for clinical governance. Since 2002, PICANet has moved forward in close collaboration with the paediatric intensive care 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 A new version of the bespoke PICANet software was distributed in May 2005 to collect demographic and clinical information. Data are transmitted to a secure central PICANet server via NHSnet or emailing highly encrypted files. The majority of units (67%) now submit data via NHSnet.
- 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 mortality risk adjustment tool. For each unit, bed activity and staffing levels are collected.
- 5 The PICANet data set is of extremely high quality with respect to accuracy and completeness as a result of implementing rigorous data quality procedures.
- 6 Data are presented on 28,425 paediatric intensive care admissions to 25 NHS trusts in England and Wales over the two year period 1 January 2004 to 31 December 2005. The Royal Hospital for Sick Children, Edinburgh joined PICANet in December 2004.
- 7 For the first time, the PICANet national report identifies individual NHS trusts.
- 8 Children under one year comprise 48% of admissions with an excess of boys (60%) compared to girls (40%). 30% of these admissions are for respiratory conditions, with bronchiolitis accounting for the winter peak in activity.
- 9 Of specific interest to commissioners of paediatric intensive care services is the presentation of the geographical distribution of the volume of patients receiving paediatric intensive care by Strategic Health Authority (SHA) or Health Board (HB) (Scotland, Northern Ireland). This is made possible by linkage of individual

postcodes of residential addresses to national census data. Age and sex adjusted prevalence of paediatric intensive care unit (PICU) admissions varies considerably by SHA.

- 10 Paediatric intensive care services are available for planned and unplanned admissions but resource allocation can be difficult with 60% of admissions being unplanned.
- 11 Three quarters of patient retrievals are undertaken by specialist paediatric intensive care teams.
- 12 Overall, invasive ventilation procedures are recorded for 66% of paediatric intensive care admissions. This proportion varies considerably by NHS trust and by SHA.
- 13 A total of 163,388 bed days were provided for children in PICUs, with more than 50% accounted for by patients under one year.
- 14 Despite the severity of their illness, extremely few children die in PICUs, with 95% being discharged alive. For 2004 and 2005 combined, no individual units showed any excess risk adjusted (PIM) mortality. Risk adjusted mortality differs between SHA populations.
- 15 Approximately half of the children admitted for paediatric intensive care have information available about their status at 30 days post discharge. However, the completeness of the data collection varies widely between trusts, with six trusts not collecting any 30-day status data and eight trusts collecting 30-day status for over 95% of children.
- 16 In collaboration with clinical colleagues, a chapter has been written describing paediatric intensive care activity for unplanned admissions of infants under one year with acute respiratory failure (ARF). Children admitted in this category live in more deprived areas than their counterparts with other critical illnesses. These conditions place winter pressures on beds and retrieval services but the outcome for these children is good.
- 17 Difficulties were experienced in obtaining national data on children receiving intensive care in adult units. Based on data from 2004 alone, 746 children were recorded as receiving intensive care in adult units, representing 5% of all admissions of children receiving intensive care in England and Wales.
- 18 All trusts responded to the nurse staffing survey in October 2005 except trust G, although trust P only provided general establishment figures. Medical staffing

data were collected from 80% of trusts surveyed. As in previous years, the majority of nurses employed in PICUs are grade D or E. 46% of trusts met the Paediatric Intensive Care Society (PICS) guidelines on nurse staffing with 6.4 whole time equivalent (WTE) or more qualified nurses per intensive care bed. The majority of medical staff working on PICUs are employed at middle grades.

- 19 Data presented for individual children in the report indicate that 3.3% of children admitted for paediatric intensive care are involved in multiple re-admissions with over 1% of these children having five or more admission to paediatric intensive care during the two years reported.
- 20 Eleven recommendations arising from this report are outlined in section 17.