PICANet National Report January 2003 - December 2004: 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 out of the 9 units in the Pan-Thames region began data collection in March 2003). Information is available nationally and by trust. Data are anonymised but individual NHS 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 NHS trust, 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   PIC 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).