Admissions to adult, general critical care units in the Case Mix Programme (CMP) stratified by quartiles of ICNARC physiology score, between 1 January 2001 and 31 December 2011

Question

What was the annual number of admissions and associated mortality rates and lengths of stay, to adult, general critical care units in England, Wales and Northern Ireland participating in the Case Mix Programme (CMP), stratified by quartiles of ICNARC physiology score between 1 January 2001 and 31 December 2011.

Background to the ICNARC Case Mix Programme

The Intensive Care National Audit & Research Centre (ICNARC) was established in 1994 on a two-year (1994-1995), pump-priming grant from the Department of Health (England) and Welsh Health Common Services Authority (Wales), ICNARC became an independent Registered Charity in July, 1994 (Registered Charity Number: 1039417).

ICNARC’s aim is to foster improvements in the organisation and practice of adult critical care (intensive and high dependency care) to improve patient care and outcomes. Towards achieving part of this aim, ICNARC coordinates a national, comparative audit of patient outcomes from adult, critical care units in England, Wales and Northern Ireland known as the Case Mix Programme (CMP). Currently, 95% of adult, general critical care units in England, Wales and Northern Ireland are participating in the CMP.

The CMP is a voluntary, performance assessment programme using high quality clinical data to facilitate local quality improvement through routine feedback of comparative outcomes and key quality indicators to clinicians/managers in adult critical care units.

The CMP recruits predominantly adult, general critical care units. Adult, general critical care units are defined as either standalone intensive care units (ICUs) or combined intensive care/high dependency units (ICU/HDUs). Participation in the CMP is entirely voluntary.

CMP specified data are recorded prospectively and abstracted retrospectively by trained data collectors according to precise rules and definitions - set out in the ICNARC Case Mix Programme Dataset Specification. Data collectors from each unit are trained prior to commencing data collection with retraining of existing staff, or training of new staff, also available. CMP training courses are held at least four times per year.
CMP specified data are collected on consecutive admissions to each participating critical care unit and are submitted to ICNARC quarterly. Data are validated locally, on data entry, and then undergo extensive central validation, for completeness, illogicalities and inconsistencies, with data validation reports returned to units for correction and/or confirmation. The validation process is repeated until all queries have been resolved and then the data are incorporated into the CMP Database (CMPD).

Participating units receive comparative data analysis reports on outcomes and key quality indicators, in which they can identify their own unit data and compare with all units participating in the CMP. In addition, staff at units can interrogate the CMPD by submitting analysis requests which are provided free-of-charge.

Data collected for the CMP include alphanumeric unit/admission identifiers, demographics (e.g. age, sex, ethnicity), case mix (e.g. acute severity, comorbidity, surgical status, reason for admission), outcome (e.g. unit/acute hospital survival) and activity (e.g. unit/acute hospital length of stay) for each admission to each critical care unit.

Available data for report

920,047 admissions to 227 adult, general critical care units
1 January 2001 – 31 December 2011

Selection of cases

All adult, general critical care unit admissions in England, Wales and Northern Ireland participating in the Case Mix Programme (CMP) between 1 January 2001 and 31 December 2011.

Definitions of variables included

The ICNARC physiology score\(^1\) is based on weightings for deviations from normal in the twelve physiological parameters during the first 24 hours following admission to the critical care unit. It was derived from raw physiology data using standardised computer algorithms.

The critical care unit length of stay was the duration in days from the date and time of admission to the critical care unit to the date and time of discharge from the critical care unit or the date and time of death.

Critical care unit mortality was defined as the status at discharge from the critical care unit.

Number of beds was defined as the number of beds reported to the CMP by the unit.
Results

The attached spreadsheet displays the annual number of admissions to adult, general critical care units in the CMP between 1 January 2001 and 31 December 2011. The number of units and reported critical care beds that were included in each year are also displayed.

Admissions are stratified by quartiles of ICNARC physiology score and calendar year. Associated critical care mortality rates and lengths of stay are displayed.

References


Acknowledgement

Please acknowledge the source of these data in all future presentations (oral and/or written), as follows:

“These data derive from the Case Mix Programme Database. The Case Mix Programme is the national, comparative audit of patient outcomes from adult critical care coordinated by the Intensive Care National Audit & Research Centre (ICNARC). These analyses are based on data for 920,047 admissions to 227 adult, general critical care units based in NHS hospitals geographically spread across England, Wales and Northern Ireland. For more information on the representativeness and quality of these data, please contact ICNARC.”