Neurosurgical National Audit Programme Outcomes Publication Manual

Contents

Summary

This manual describes methodological aspects of the HES-based data analysis and presentation that will be employed in the 2014 NNAP Outcomes Publication. It covers the use of specialty coding; FCEs as the principal denominator of clinical activity; neurosurgical case-mix categorization, including subspecialty activity and key procedures; and case-mix adjustment. The paper clarifies apparent discrepancies between NNAP data and data collected through personal, departmental or hospital audits using other data sources.

Audit Year

The 2014 Outcomes Publication will be based on all neurosurgical FCEs with a discharge date that took place between 1st April 2012 and 31st March 2013.

Specialty Coding

The NNAP assesses the quality of care provided by neurosurgical units and neurosurgical consultants. All activity is captured using the neurosurgical specialty-specific code 150. Activity that has not been attributed to a consultant neurosurgeon in the HES return is not included in this audit programme.

Please be aware that:

- If a neurosurgeon operates jointly on a patient admitted under a colleague from another specialty, the activity will not be recorded in this audit.
- If a colleague treats a patient admitted under the care of a neurosurgeon (e.g. a neuroradiologist undertakes an interventional procedure) the activity and the patient outcome will be attributed to the neurosurgeon.

Adult and Paediatric Neurosurgical Services

The 2014 Outcomes Publication will provide separate reports for the adult and paediatric services provided by Trusts. Patients will be defined as an adult if on the day of admission of the FCE they have attained their 17th birthday.

Please note that:

- The allocation of a patient's FCE to the paediatric or adult audits is dependent on their age and not the hospital setting in which the FCE took place.
- A patient admitted on more than one occasion before and after their 17th birthday in the audit year will be recorded as having FCEs in both the paediatric and adult audits.

Finished Consultant Episodes (FCEs)

The analysis of hospital activity is traditionally based on FCEs. Activity may also be assessed using spells of care (admissions) or absolute numbers of patients treated. Each method has advantages and disadvantages. The NNAP uses FCEs to provide the most sensitive indicator of the involvement of all consultants and their teams in a patient's management and outcome. The use of FCEs ensures that the maximum number of dominant procedures is included in the audit (see Dominant Procedures).

Please note that:

- Every admission and transfer of care between consultants during an admission and every re-admission will generate a new FCE for each patient.
- A neurosurgical unit will typically have 10-20% more FCEs than absolute number of patients treated over an audit cycle due to re-admissions and transfers of care.
- When a patient is admitted under the care of a duty consultant and transferred to the care of a colleague for specialist surgery two FCEs will be generated: a non-procedural FCE for the first consultant and a procedural FCE for the second consultant.

Day Case FCEs

The total number of day case FCEs undertaken by each neurosurgical unit is recorded, but no further analysis of day care activity has been performed in the 2014 audit

Data and Report Hierarchy

The NNAP employs a data and reporting hierarchy ranging from the total annual number of FCEs to specific key procedures and procedural groups. The hierarchy provides a comprehensive overview of the clinical activity and outcomes of neurosurgical units, specialist MDTs and consultants as follows:

- Total FCEs
- Elective vs non-elective FCEs
- Procedural vs non-procedural FCEs
- Cranial vs spinal procedural FCEs
- Sub-specialty activity
- Key procedures

Procedural and Non-procedural FCEs

The NNAP recognises two basic types of FCE: procedural and non-procedural FCEs. A procedural FCE is recorded when one or more invasive neurosurgical or neuro-diagnostic procedures are performed under the care of a consultant neurosurgeon during the FCE. Non-procedural FCEs are recorded for patients admitted for observation, re-assessment, non – invasive imaging or pending transfer of care (see above).
The procedural FCE rate for a neurosurgical unit is typically between 70-80% and is heavily influenced by local management policies and resources in addition to local case-mix.

Procedural Coding

The NNAP employs OPCS4 procedural coding as its primary source of data management and analysis. Preparatory work for the 2014 Outcomes Publication has included a review of all OPCS4 codes used in the 2012-13 national dataset. OPCS4-coded procedures have been allocated to a sub-specialty activity groupings as follows:

Cranial activity	Spinal Activity	Other
General and Trauma	Lumbar Spine	Peripheral surgery
Neuro-oncology	Cervical Spine	Diagnostic (invasive)
Functional	Complex Spine	Not Classified
Vascular	Intradural Spine	
Skull base	Dysraphism	
CSF disorders	Other	

The OPCS4 coding allocations are set out in the NNAP OPCS4 Coding Spread-sheet. This may be downloaded from the SBNS website – www.sbns.org.uk.

Dominant Procedure

NNAP case categorisation, data analysis and data presentation are based on the dominant procedure of each FCE. The dominant procedure is selected using the NHS 2013/14 HRG Local Payment Grouper software. Trusts may note small differences in data if other grouper software is used.

The dominant procedure is the procedure in an FCE most likely to have the greatest impact on patient outcome; to be associated with adverse events and require most resources.

Please note that:

- Only the dominant procedure of each FCE will be reported in the 2014 Primary Outcomes. For example, if a patient undergoes resection of a posterior fossa tumour and subsequently develops obstructive hydrocephalus requiring external ventricular drainage and the ventriculo-peritoneal shunting, only the posterior fossa surgery procedure will be reported.
- As a consequence the NNAP reported procedural activity in this audit will be less than total theatre logged activity. Total procedure reports will be made available to units for secondary analysis in subsequent audits.

Mortality Rates

The NNAP will publish case-mix adjusted 30 day mortality rates for the total activity of units and consultants. The case-mix adjustment algorithm takes into account the following factors:

- Sex
- Age
- High risk ICD10 diagnostic category
- High risk disease severity OPCS4 coded procedure
- Elective vs non-elective admission
- Procedural vs non- procedural admission
- Co-morbidity score adjusted for potential procedural morbidity

Please be aware that:

- The 30-day mortality rate is calculated from the date of admission. Deaths occurring in other hospitals or discharge locations will be included.
- Deaths are attributed to the HES-registered consultant responsible for the care of the patient during their terminal FCE.
- Neurosurgical units and individual consultant neurosurgeons may be concerned that deaths have been wrongly attributed due to coding errors. The NNAP will undertake validation and when appropriate re-attribution of deaths. Please see the NNAP Briefing No 1 for details of the validation procedures.
- Please note that where attribution of death follows a Trust's standard practice e.g. registration of multiple trauma patients with head injury to a consultant neurosurgeon or reflects prevailing national practice e.g. registration of aneurysmal SAH patients to consultant neurosurgeons, re-attribution will not be possible.

Full details of the neurosurgical case-mix adjustment may be downloaded from the SBNS website – www.sbns.org.uk .

Consultants Working in Multiple Trusts

The activity of consultants who work at multiple Trusts is captured and recorded against their GMC number within the HES dataset. The Outcome Reports of these surgeons will be accessible on the SBNS NNAP website under the Unit Profile of all of the hospitals that they work at. Their activity in each hospital will be included in the appropriate Unit Report.

Retired Consultants

The unit activity of consultants who have retired since 2012/13 will be included in the 2014 Outcome Publication. The publication of the individual data of retired consultants is at the discretion of the consultant. Retired consultants not wishing to have individual data made public should put this request in writing to Anna Jenkins: NNAPenquiries@sbns.org.uk

Newly Appointed and Absent Consultants

Newly appointed consultants and consultants who may have been absent due to sickness or other change in circumstances, may have performed relatively few procedures within the audit year. The SBNS NNAP website will allow for a commentary explaining the reasons for low activity. The NNAP will adopt the Office for National Statistics small numbers policy and will not publish specific outcome indicators on any procedure undertaken less than 5 times by a consultant during the audit year.

Management of Outlying Performance

The SBNS-NNAP policy for the Management of Outlying Performance recognises three levels of outlying performance: potential concern; confirmed concern; and serious concern. The identification of potential outliers will be based on case-mix adjusted indicators. In the 2014 Outcome Publication only potential and serious concerns related to case-mix adjusted mortality will be identified since confirmed concerns require two years of audit data. The Outlier Policy is published on the SBNS website and has been circulated with this manual.