Performance Indicators

A performance indicator is a type of performance measurement. There are many types of performance indicator but one of the more basic performance indicator that is frequently used to measure performance in surgical specialties is mortality. For the 2014 Consultant Outcome Publication Project, NHS England mandated the Society of British Neurological Surgeons (SBNS) to publish activity and mortality rates for all consultant neurosurgeons practicing within the English NHS. For the purpose of this activity, 30 day elective procedural mortality was used as a performance indicator at consultant level, and 30 day whole practice mortality was used as a performance indicator at unit level.

Things to note:

Neurosurgeons undertake a wide range of planned operations that include simple procedures lasting less than one hour, where the risk of death is close to zero, and complex procedures lasting more than twelve hours, where the risk of death may be over 10% (1 in 10). Thus the risk of death from a planned neurosurgical operation may differ by more than a 100-fold.

There is no typical operation undertaken by all neurosurgeons in sufficient numbers that it may be used as a sole indicator of outcome. By reporting the outcome of all planned operations undertaken by neurosurgeons, this audit provides an overview of planned neurosurgical activity in England.

The risk of surgery depends not only on the operation but also on the age and medical condition of the patient. It is now common for patients over the age of 70 to undergo major neurosurgical procedures when the benefits to the patient outweigh the increased risks.

The outcome of modern operations does not depend solely on the skill or judgment of individual surgeons. In many of the operations assessed in this audit neurosurgeons have operated jointly in teams with surgeons from other specialties and occasionally the procedure has been undertaken by other specialists.

Interpretation of results:

In order to adjust for the inherent risk of an operation and the condition of the patient, statistical methods may be used to calculate a standardised mortality rate (SMR). The SMR reported in this audit has been developed specifically to reflect the clinical practice of neurosurgeons.

However, these statistical methods cannot fully account for variations in the sort of patients that some neurosurgeons treat. Neurosurgeons who, for example, routinely operate on patients with malignant tumours involving the brain and spine or complex disorders of blood vessels will have higher SMRs. Neurosurgeons who undertake low risk spinal procedures on high risk elderly patients may appear to have higher SMRs.

This audit confirms that the average risk of death from a planned neurosurgical operation in 2012/13 was 0.4 %. The absolute number of deaths recorded for neurosurgeons in 2012/13
ranged between 0 and 5. With such small numbers of deaths, the elective mortality rate of an individual surgeon is heavily dependent on chance variation.

This audit considers patients who have undergone an elective operation. The classification of an operation as elective (planned) or non-elective (emergency or urgent) depends on the procedures adopted by each neurosurgical unit. Some units may see patients requiring urgent surgery in an assessment clinic before admission. Under NHS information rules these patients are considered as elective cases. This will add to the risk level of patients under the care of patients undergoing surgery at those hospitals.