

DISCUSSION DOCUMENT  
SAFE AND SUSTAINABLE PAEDIATRIC NEUROSURGICAL SERVICES IN ENGLAND

Dear Colleagues

The BPNA has been involved in the proposals to restructure paediatric neurosurgical services in England. This now has a strong impetus with major involvement by the Department of Health and National Commissioners but there is still a lot of debate about the assumptions on which the review is based. The outcome could have major knock-on effects on our own specialty as well as on oncology, trauma and intensive care. A small group of us are trying to represent the BPNA and we are keen that you send us your comments to help us in this.

**BACKGROUND**

To remind you of the background, the neurosurgery review was triggered by a group of mainly neurosurgical colleagues who suggested that all children requiring neurosurgery should only be looked after by paediatric trained neurosurgeons who should provide 24 hour cover 7 days a week, and perform at least 80 operations a year on children. This implies a minimum of 5 consultants per centre with specific training in paediatric neurosurgery. For those still in neurosurgical training, this would require 12 months paediatric neurosurgical training experience.

There are said to be approximately 4500 paediatric neurosurgical procedures operations a year in England and if a minimum number of paediatric procedures, with no 'credit' for non-paediatric procedures were combined with specifically paediatric out-of-hours neurosurgical rotas, a reduction in the number of centres from the present number would logically follow. 'A wide range of views is expressed by those working on this on behalf of specialised commissioning varying from a predetermined model - based on 'common sense' (rather than 'evidence') and simple arithmetic applied to the number of surgeons and number of procedures - of around half a dozen centres to a less radical change based on requiring centres currently providing paediatric neurosurgery to demonstrate compliance with suggested standards if they wish to continue to practice, thus raising standards overall.

At present there are 15 centres, staffed by 48 surgeons (6 full time paediatric neurosurgeons; 26 with completed paediatric fellowships), although all have additional input from subspecialist adult neurosurgeons where appropriate (eg vascular, spinal, skull base, epilepsy surgery). With fewer centres obviously many children and their families would have to travel further for care. For further details please visit the 'Safe and Sustainable' section at [www.specialisedcommissioning.nhs.uk](http://www.specialisedcommissioning.nhs.uk). (This is the same government body that has just recommended a reduction from the current 11 to 6 or 7 paediatric cardiac surgery centres in England).

Scotland went through a similar exercise in 2006 which concluded by keeping the four units performing paediatric neurosurgery, but amalgamating them into a single managed network, with a single centre for epilepsy surgery. The importance of linkages including paediatric neurology, neuro-oncology, cranio facial, spinal and vascular services was highlighted. For more details see

<http://www.scotland.gov.uk/News/Releases/2008/02/25095229>  
and <http://www.scotland.gov.uk/Resource/Doc/924/0056773.pdf>

A recent audit of current practice throughout England has now been completed: <http://www.specialisedservices.nhs.uk/doc/report-unit-visits-james-steers-sharon-stower>. It identified four key determinants of quality, five subsidiary components and an overall lack of long term rehabilitation services. Between centres it describes a wide variation in staffing, numbers of operations and organisation of services, but no gross discrepancies in certain specified outcomes.

Part of the motivation comes from data in adults correlating the outcome for certain operations with the annual number performed in a centre or by an individual surgeon. For example in New York State in the 1990s hospitals performing more than 30 craniotomies per year for cerebral aneurysm had a 8.8% mortality rate, compared to 15.5% in those that performed less than 30/year. However the literature review of the very limited data for paediatric neurosurgery by the Safe and Sustainable group could not confirm any similar correlations between numbers of operations and outcome over the range of numbers of procedures that applies in the UK.

Most paediatric data relates to shunt surgery which comprises about half the total operative workload. The rest of the neurosurgical workload is very varied. Some is highly specialised such as cranio-facial work which has already been rationalised to a few units. For some fields such as vascular surgery and perhaps epilepsy surgery there are often close links with adult super-specialists in the field who operate on children as well. The review has made it clear that some super-specialist work is likely to be best undertaken by adult neurosurgeons with advice from paediatric neurosurgeons. Is it preferable that a surgeon should perform, say, at least 80 operations of all types a year on children, or that for some procedures the surgeon should be performing a minimum number of operations a year both in adults and children?

If about 50% of procedures are shunt related, emergency attendances for suspected shunt obstruction must be a major part of the workload, although that has not been quantified. The review proposes that acute immediately life-threatening problems, particularly shunt obstruction and some extradural collections after head injury, will need to be managed by local adult neurosurgeons if it would take too long to transfer to a specialist paediatric centre. Evidence suggests that such 'true emergencies' are rare but it is possible that there may be a paradoxical increase in operations on children by non-paediatric surgeons. This would conflict with one of the major reason for reducing the number of paediatric centres, namely to provide 24 hour paediatric neurosurgical care out of hours.

### **IMPLICATIONS FOR PAEDIATRIC NEUROLOGY**

Paediatric neurology services would almost certainly need to re-organise and specialise because, for example, epilepsy surgery (but probably not all aspects of the pre-surgical evaluation), surgical aspects of neuro-oncology and spinal surgery would be restricted to the paediatric neurosurgical centres. Relate to this is the question of the preferred model for paediatric neurology services, which we are also trying to address. The National Commissioners have also been asking us which paediatric neurology services should be nationally commissioned, with the implication that they will be provided in specified centres only.

There is a move to rationalise specialist paediatric services in London which has similar themes to the neurosurgical review. The document (<http://www.csl.nhs.uk/Publications/Documents/London%20specialised%20childrens%2>

0services%20review%20summary%20AMENDED%2018012011.pdf) suggests London's 8 million population would be best served by two networks rather than three. At present there are 6 paediatric neurology centres in London (appendix). If this was applied to all of England, population about 50 million, this would mean 11-14 networks, two in London and the remainder based on the 13 current centres outside London.

The possible effect on epilepsy services is difficult to work out. There is a related proposal that epilepsy surgery should become even more specialised, with perhaps 4 or 5 centres in England. Epilepsy is approximately a third of most paediatric neurologist's workload. A considerable number of the patients seen will have more complex epilepsy. If current NICE guidelines are being followed surgery should be considered earlier rather than later in the natural history. Careful consideration would need to be given as to how children will be referred and assessed by an epilepsy surgery team. One solution might be the development of supra-regional networks with important components of the pre-surgical evaluation being undertaken in regional Neurology centres, linked to the supra-regional neuroscience centres.

We would like you to provide us with your views [*on a number of issues.*]

1. *Is it your experience that children sometimes receive a substandard level of neurosurgical care as it is currently provided?*
2. *Do you agree that in centres offering neurosurgery, there should be a specific paediatric neurosurgical on-call rota, manned 24/7 by consultants whose training and/ or experience have rendered them suitable to supervise the neurosurgical care of children?*
3. *If your centre currently has a paediatric neurosurgery service which was discontinued, what effect would it have on your practice and on the care received by children with neurological disorders?*
7. *If epilepsy surgery was limited to a substantially reduced number of centres, and these were distant from your centre, what effect would this have on the care received by patients with complex epilepsy in your locality?*
8. *What measures might reduce any adverse impact on care of a reduction of the number of centres offering paediatric neurosurgery and the number of centres offering paediatric epilepsy surgery.*]

The BPNA's overriding priority must be the best interest of children and their families with neurological disorders. This clearly includes children with neurosurgical problems, both acute and chronic. What might be in the best interests of one group of children may not be for another. Planning of services always involves balancing competing interests. If outcome is better in higher volume centres, or if the services in some centres are below standard, the neurosurgical review should have our full support and we must work with any effects it might have on our specialty. If not, it is less easy to decide the correct response.

## **Appendix: current provision**

### **14 centres with both paediatric neurology and neurosurgery:**

Birmingham\*\*

Bristol\*\*

Cambridge

Leeds\*

London: GOSH\*\*

Kings

St Georges

Liverpool\*\*

Manchester

Newcastle\*\*

Nottingham

Oxford

Sheffield

Southampton\*

### **5 centres with paediatric neurology but without neurosurgery:**

Leicester\*

London: Guys\*\*

Royal London

St Marys London

Preston

### **1 centre with paediatric neurosurgery but without full time neurology:**

Hull

\*\* indicates centres appearing on at least 3 of the 4 cardiac surgery options

\* indicates centres appearing on 1 of the 4 cardiac surgery options