COMHAIRLE NA N-OSPIDEAL

DRAFT REPORT ON

NEUROSURGICAL SERVICES IN DUBLIN

October 1989
DRAFT REPORT ON
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Section 1 - Introduction

1.1. Following an announcement by the Minister for Health in Dáil Éireann on the 19th May, 1987, a major review of acute hospital services in the country commenced. This review, which is ongoing, is being undertaken by the Hospital Services Division of the Department of Health assisted by Comhairle na n-Ospideál. It began with a series of discussions involving the management authorities of all the health boards and the public voluntary hospitals in the country. Arising out of these discussions a number of specific areas were identified for further in-depth study. Comhairle na n-Ospideál was requested to undertake the examination of a number of specific areas of hospital activity. One of them - neurosurgical services - is the subject of this particular study.

1.2. At the request of, and following consultation with the Department of Health, the Comhairle, in January, 1988, established a small internal committee comprised of two of its members and the Chief Officer, with the following terms of reference:

"Having due regard to the overall allocation of specialist units within the major general hospitals, to examine the existing arrangements for neuro-surgical services in the Dublin area and, following consultation with the interests concerned, to make recommendations to the Comhairle on the future organisation and development of neuro-surgery in the context of the neuro-sciences group of specialties. The study should take into account the national/regional character of the neurosurgical services in Dublin, and the necessity for an effective and efficient service within the overall financial constraints which are likely to continue to apply to the health services in general".

Mr. T. Martin, a member of the staff of Comhairle na n-Ospideál, acted as Secretary to the Committee.

1.3. In pursuance of its task, the committee wrote to Beaumont Hospital and St. Vincent's Hospital where the two existing neurosurgical units in Dublin
are located, informing them of the establishment of the committee, its terms of reference and membership. A comprehensive dossier of information relating to the latest year available was sought from each hospital in relation to neurosurgery and the neurosciences covering, in particular, the following aspects of the services:

- **Workload** - in-patients, out-patients (new and return), day cases, list of operations performed, source of referral and geographic distribution of patients.

- **Human Resources** - details of the number and type of medical, nursing, paramedical and other staff assigned to the department of neuro-surgery or shared with other departments. Serious deficiencies in existing staffing were to be indicated.

- **Accommodation** - number of beds available, out-patient consulting rooms, theatres and theatre-time allocated, intensive care facilities etc. Details of any proposed alteration in accommodation and the estimated cost thereof.

- **Equipment** - a list of major equipment available for neuro-surgery sub-divided into (a) equipment exclusively devoted to neuro-surgery and (b) equipment shared with other specialties. An indication of the current cost of purchasing each major item and whether replacement is required now or in the near future. An indication of any additional equipment envisaged as being necessary and the estimated cost thereof.

- **Neuro-sciences** - a brief description, covering both staff and equipment, of the extent to which the neuro-sciences group of specialties have been developed within the hospital with particular reference to neurology, radiology, pathology and anaesthesia. Also a description of any plans (including an estimate of costs) for further development of the neuro-sciences.

- **Organisation** - a brief outline of how the department of neuro-surgery is organised from the viewpoint of both emergency and elective work; how it relates to other departments within the hospital; arrangements regarding the provision of neuro-surgical opinion and physical in-put to other major Dublin hospitals participating in the A/E rota; linkage arrangements with other special services e.g. National Medical Rehabilitation Centre; and relationships with acute hospitals outside the Dublin area including arrangements for the transfer of patients.
The foregoing is an indicator of the range of information sought and each hospital was asked to include any other relevant information it considered appropriate. Beaumont and St. Vincent's Hospitals responded in a positive manner to the request for information and each made written submissions to the Committee. The submission from Beaumont is attached at Appendix A.

1.4. Following consideration of the submissions, the committee visited St. Vincent's and Beaumont Hospitals and had discussions with the authorities of both hospitals at management and consultant level including all the neurosurgeons and neurologists plus representatives of the various neuroscience specialties. As a result of the discussion with St. Vincent's Hospital, a revised submission was made which is included as Appendix B (i).

1.5. Personal written submissions were received from Mr. C. Pidgeon, Neurosurgeon, St. Vincent's Hospital and also from Drs. Hutchinson and Martin, Neurologists, St. Vincent's/Adelaide Hospitals. Informal discussions were held with Mr. Pidgeon and Dr. Hutchinson.

1.6. The committee visited Cork Regional Hospital where the third neurosurgical unit in Ireland is located and had a discussion with representatives of the hospital including the two neurosurgeons and representatives of the various neurosciences. A list of neurosurgical procedures carried out in Cork Regional Hospital in 1987 is at Appendix C.

1.7. In addition to the above visits, a joint discussion was held in Corrigan House with those general hospitals in Dublin on the then A/E roster which do not have a neurosurgery unit on site. Representatives from the Eastern Health Board in respect of James Connolly Memorial and St. Columcille's Hospitals; the Mater Hospital; St. James's Hospital and the F.D.V.H./Meath Hospital attended the meeting.

1.8. During the foregoing discussions, the committee was urged by several participants to visit and to investigate the organisation of neurosurgical services in areas of Great Britain broadly similar in population size and demography to Ireland. The committee visited three neurosurgical centres in Great Britain - i.e. the unit based at the Southern General Hospital, Glasgow covering the west of Scotland region; the unit based at Walton Hospital, Liverpool covering the Mersey Region;
and the unit based at Frenchay Hospital, Bristol covering part of the south west England region. Detailed discussions were held in each hospital with representatives of the various neuroscience disciplines and conducted tours of the neurosurgery/neuroscience facilities in Walton and Frenchay Hospitals took place.

1.9. Following the visits and consultations in Ireland and Great Britain outlined above, the committee had further meetings with Beaumont and St. Vincent's Hospitals. At the request of the committee, St. Vincent's Hospital undertook to submit a document outlining the reasons for not moving neurosurgery from St. Vincent's. This is attached as Appendix B(ii).

1.10. The information-gathering and consultation programme described above was highly successful. The requests for both information and views were met with full co-operation by all the agencies who were approached. Sincere appreciation must be recorded to the many individuals and agencies who went to considerable trouble to assist in the task by providing information/views either in writing or through discussion. A special word of gratitude must be extended to those who facilitated and participated in the discussions during the visits to the neurosurgical/neuroscience centres in Cork, Glasgow, Liverpool and Bristol. The information and advice received during the visits have been particularly helpful in reaching the conclusions set out in this document.

1.11. The result of the foregoing has been the compilation of a considerable amount of data and professional opinion based on experience in the care of patients requiring neurosurgical services. This constitutes the basis on which the report furnished by the committee to the Comhairle is founded.

1.12. The committee was appointed by the Fifth Comhairle whose term of office expired in September 1988. At that stage, the task of the committee had not been completed. They were authorised to continue with their work - which they completed in January 1989 - and to submit their report to the incoming Sixth Comhairle whose term of office commenced in July 1989. This draft report which is largely similar to the committee's report, incorporates some amendments which emerged from its preliminary consideration by the Sixth Comhairle. It has been decided to circulate the draft report to the relevant health agencies throughout the country and to invite comments thereon by the end of November 1989. In finalising the draft report the Comhairle intends to consider any comments which may be received.
SECTION 2 - Description of existing Neurosurgical and related neuroscience services in Ireland and in three regions in Great Britain.

2.1. As indicated in Section 1, extensive information has been gathered by means of the submissions received and the discussions held with six neurosurgical centres. This section describes how neurosurgical and related neuroscience services are organised and staffed in Ireland and in the three regions visited in Great Britain. This section also gives an indication to the thrust of the submissions received from Beaumont and St. Vincent's Hospitals, the subsequent discussions thereon and the more salient points as seen from the perspective of the Comhairle.

2.2. There are three neurosurgical units in Ireland - two in Dublin located in Beaumont and St. Vincent's Hospitals and one in Cork located in Cork Regional Hospital. The Beaumont Hospital unit is the largest with a complement of four permanent consultant neurosurgeon posts, two of which are currently vacant. The units in St. Vincent's and Cork Regional Hospitals each have an establishment of two posts of consultant neurosurgeon and in each, one of the permanent posts is vacant.

2.3. The three units visited in Great Britain served populations similar to Ireland. In the West of Scotland there were 6 neurosurgeons in one centre in Glasgow serving a population of about 2.7 million; in the Mersey Region there were 5 neurosurgeons in one centre in Liverpool serving a population of about 3 million; in the South Western Region there were 4 neurosurgeons in one centre in Bristol serving a population of about 2 million with a smaller unit in Plymouth staffed by 2 neurosurgeons serving about 1 million people. It is understood that in the U.K., as a general rule, there are two types of neurosurgical units (a) the centralised one with about 5 consultant neurosurgeons and (b) the smaller one with about 3 consultant neurosurgeons.

2.4. Neurosurgical and Neuroscience facilities in Beaumont Hospital.

As indicated in paragraph 1.3., a detailed submission was received from Beaumont Hospital (see Appendix A.). It describes Beaumont Hospital's neurosurgical and related services and how Beaumont Hospital envisages the future organisation of these services. The importance of a multidisciplinary team approach to the provision of a neurosurgical service is stressed. This is formalised through the Richmond Institute of Neurology and Neurosurgery which
comprises about 14 consultants working in neuroscience disciplines. Neurosurgery is dependent on support specialties such as neuro-radiology, neuro-pathology, neuro-anaesthesia, neuro-physiology and neuro-ophthalmology all of which are well developed in Beaumont Hospital. Patients are admitted to the neurosurgical unit from all over the country including a small number of patients transferred from the neurosurgical unit in Cork for highly specialised treatment available only at Beaumont. There is no defined catchment area. Beaumont Hospital is in favour of centralisation. It has been contended that, in practice, it has become the national centre for major neurosurgery and is providing an excellent service to patients from all over Ireland. Beaumont Hospital argues that there is a need for a more precise definition of its role and that additional human resources should be provided in order to overcome various staffing deficits thereby utilising more efficiently the major investment in equipment and accommodation already made in the neurosurgical unit vis:-

**NEUROSURGERY**

Medical Staff:— At consultant level, there is an establishment of four neurosurgeons including one with a special interest in paediatric neurosurgery whose services are shared with The Children's Hospital, Temple Street and Our Lady's Hospital for Sick Children, Crumlin. The non-consultant medical staff comprises one senior registrar; one registrar, two S.H.O's and four interns.

Facilities and Workload:— There are two operating theatres devoted mainly to neurosurgery. 824 neurosurgical operations were carried out in 1987 (see details in Appendix A). There are two neurosurgical wards for adults totalling 68 beds. Included in this number is a purpose built neurosurgical high dependency care unit of 9 beds. In addition there is a 25 bed purpose built paediatric neurosurgical unit of which 10 beds are currently in use. A complement of 95 adult neurosurgical beds out of a total complement of 730 beds was envisaged when the hospital was built. However, only 600 of the 730 beds have so far been opened.

**OTHER NEUROSCIENCE DISCIPLINES**

Neurology:— There are two consultants who also have a commitment of two sessions each at the Mater Hospital. The N.C.H.D. staff comprises one registrar and three S.H.O's. The neurologists have 30 beds.
in Beaumont Hospital plus beds in the Mater Hospital. The need for a third neurologist at Beaumont was stressed. Two paediatric neurologists who are based in the children's hospitals, have two sessions each in Beaumont Hospital mainly for access to the specialised facilities located there.

Neuro-radiology: The medical staff comprises two consultants and two S.H.O's. There are five specialist radiographers and three nurses with special training. There is one C.T. Scanner and it is argued that a second machine, devoted exclusively to the neurosciences, is desirable. Beaumont Hospital is seeking a Magnetic Resonance Imaging facility from the Department of Health - this will cost in the region of £2m.

Neuro-pathology: The staff includes one whole-time consultant neuropathologist, one part-time consultant (1 session per week), one S.H.O. and one technician.

Neuro-physiology: There is one consultant based at Beaumont Hospital with a commitment of four sessions per week to the Mater Hospital. There are four technicians.

Neuro-ophthalmology: There are two consultants with 5 neuro-ophthalmology sessions per week between them and they are supported by one S.H.O.

Neuro-anaesthesia: Three of the consultant anaesthetists based at Beaumont Hospital have significant sessional commitments to neuro-anaesthesia.

2.5. Neurosurgical and Neuroscience facilities in St. Vincent's Hospital.

A detailed submission was also received from St. Vincent's Hospital which describes its neurosurgical and related services and how the Hospital envisages the future organisation of these services [see Appendix B(i)]. In its submission St. Vincent's Hospital envisages the continuation of its existing neurosurgical unit (with a complement of two consultant neurosurgeons) but its consultants would have access to Beaumont Hospital for special procedures/expertise. Possible duplication of expensive equipment could be reduced by transferring patients from St. Vincent's Hospital to Beaumont Hospital and vice-versa depending on where specific expensive items of equipment and neurosurgical expertise were located. Ultimately a third post of Neurosurgeon with a lesser commitment to St.
Vincent's is envisaged. It emerged from the discussions with St. Vincent's Hospital that there were two points of view among their representatives regarding the current state of the existing neurosurgical services and the potential for the future development of the neurosurgical unit at the Hospital. Certain consultants (in neurosurgery and neurology) were critical of the existing neuroscience services in particular neuro-pathology, neuro-radiology and neuro-physiology. The following is a factual summary of the services at St. Vincent's Hospital:

**NEUROSURGERY**

**Medical Staffing:** There are two consultant neurosurgeons one of whom reached retirement age in 1984 and continues to undertake his own locum. Despite advertisement it has not proved possible to fill the vacant consultant post on a permanent basis. The N.C.H.D. staff comprises one registrar, one S.H.O. and one intern.

**Facilities and Workload:** Two theatres are used for neurosurgery on a shared basis with orthopaedic and E.N.T. surgery - there are four half-day sessions per week available for neurosurgery. 415 neurosurgical procedures were carried out in 1987 [see details in Appendix B(i)]. Half of one ward - 17 beds - are currently allocated to neurosurgery. The ward includes a 6 bedded intensive care unit. Owing to cutbacks over the past two years, the number of neurosurgery beds has been reduced from 25 to 17, and theatre time has decreased from eight to four sessions per week.

**OTHER NEUROSCIENCE DISCIPLINES**

**Neurology:** There are two consultant neurologists whose services are shared with the Adelaide Hospital - one of whom is due to retire in 1989. The N.C.H.D. staffing comprises one-half of a registrar, one S.H.O. and one intern. The two neurologists share 14 beds in St. Vincent's Hospital and 16 beds in the Adelaide Hospital. One of the neurosurgeons manages the E.E.G. Department in St. Vincent's Hospital. The E.E.G. Department in the Adelaide is managed by the neurologists. The neurologists were of the view that all neurologists must have access to a neurosurgical centre, as it was not feasible to practice neurology in isolation from neurosurgery.

**Neuro-radiology:** There is no post of consultant neuro-radiologist at St. Vincent's Hospital. Neuro-radiology is undertaken on a shared basis by the
complement of six general radiologists. One radiologist stated that he was trained in neuroradiology and would be keen to have his post formally restructured to that of neuro-radiologist. He stated that a new post of neuro-radiologist would not be required as he would be able to cope adequately in conjunction with his radiologist colleagues. The absence of a consultant neuroradiologist was regarded by the neurosurgeons and neurologists as a serious deficiency. C.T. scanning facilities are available in both the public and private hospitals.

**Neuro-pathology:** There is one consultant neuropathologist with a 3 session per week commitment to St. Vincent's Hospital - the remainder of his post is based mainly at St. James's Hospital with a minor commitment to Beaumont Hospital. St. Vincent's Hospital indicated it would be desirable to increase the commitment to 5 sessions. There is no dedicated neuro-pathological laboratory in St. Vincent's Hospital and no plans to provide one. The absence of a neuro-pathology laboratory was regarded by the neurologists and neurosurgeons as a serious deficiency. Complicated specimens had to be brought to St. James's Hospital for analysis.

**Neuro-physiology:** There is no neuro-physiologist in St. Vincent's Hospital.

**Neuro-ophthalmology:** There is no neuro-ophthalmologist at St. Vincent's Hospital.

**Neuro-anaesthesia:** There are two consultant anaesthetists with significant sessional commitments to neuro-anaesthesia.

2.6. Neurosurgery and neuroscience facilities in Cork Regional Hospital.

While the neuroscience specialties in Cork are reasonably staffed the appointment of a third neurosurgeon in Cork is seen as a necessary further development at consultant level because of difficulties in providing continuous cover in a neurosurgical unit with only two neurosurgeons. When one is on holiday or on sick leave, etc., the other is required to be on call 24 hours a day every day. A three-consultant neurosurgical team would also facilitate the development of a certain amount of sub-specialisation. Most neurosurgical units in Great Britain have at least three neurosurgeons. Of more immediate concern to the neurosurgeons is that the neurosurgical unit should be appropriately equipped - due to cutbacks in recent years the equipment requirements
of the neurosurgical unit were not being met. It was claimed that certain procedures could no longer be performed due to lack of appropriate equipment. Since the meeting, which was held in May 1988 one of the two neurosurgeons has resigned. The following is a factual summary of the services at Cork Regional Hospital:

**NEUROSURGERY**

**Medical Staffing:** There are two consultant posts, one of which has recently been vacated. The N.C.H.D. staff comprises two registrars, two S.H.O's and two interns.

**Facilities and Workload:** There are 18 beds allocated to neurosurgery - prior to September 1987, there were 25 beds. The number of neurosurgical procedures carried out in 1987 was 533 (see list attached at Appendix C).

**OTHER NEUROSCIENCE DISCIPLINES**

**Neurology:** There are three consultants who also have commitments to the Mercy Hospital. The N.C.H.D. staffing comprises one registrar, two S.H.O's and 2 interns.

**Neuro-radiology:** There are two consultants with wholetime commitments to neuro-radiology.

**Neuro-pathology:** There is one histopathologist with a part-time special interest in neuro-pathology.

**Neuro-physiology:** There is no neuro-physiologist at Cork Regional Hospital.

**Neuro-anaesthesia:** There are two consultant anaesthetists with significant sessional commitments to neuro-anaesthesia.

2.7. **Organisation of neurosurgical and related services in the West of Scotland.**

Neurosurgical and related services for the West of Scotland are centralised in the Institute of Neurological Sciences which is based on the site of the Southern General Hospital, Glasgow. It has separate clinical staffing although its administration and budget comes from the Southern General Hospital. The institute has a catchment population of 2.7 million covering all of the west of Scotland from Oban to Dumfries including Glasgow.
There are four area health boards within the catchment area. The Institute provides a regional service for this area. It is the only unit in the west of Scotland. Elsewhere in Scotland there is a similar but somewhat smaller unit based in Edinburgh and two small units each staffed by two neurosurgeons in Dundee and Aberdeen. The Institute of Neurological Sciences was formed in 1966 and moved to its present purpose built unit in 1971. There was never more than one neurosurgical unit in the west of Scotland. As neurosurgery and neurology services for a large geographical area are centralised in Glasgow, the provision of a high quality transport system is necessary to offset the distances people have to travel. An air ambulance service is available in the west of Scotland. Moreover, the catchment area has been divided between the six neurosurgeons whereby each covers part of Glasgow and a part of the rest of the catchment area outside Glasgow. Each hospital in the catchment area is related to a named neurosurgeon and patients are referred from the relevant geographical area to the named neurosurgeon.

The unit comprises the following:

**NEUROSURGERY**

**Medical Staffing:** There are six neurosurgeons consisting of four wholetime service neurosurgeons plus two neurosurgeons with academic commitments. The N.C.H.D. staffing comprises three senior registrars, three registrars, four S.H.O's and one overseas registrar.

**Facilities and Workload:** An average of 1,450 - 1,550 neurosurgical operations are carried out each year. There are three dedicated theatres and 100 neurosurgical beds including 10 for paediatric neurosurgery.

**OTHER NEUROSCIENCE DISCIPLINES**

**Neurology:** There are six neurologists with 50 neurology beds.

**Neuro-physiology:** There are two neuro-physiologists plus one clinical assistant.

**Neuro-radiology:** There are four wholetime neuro-radiologists. There are no junior staff. There are two C.T. Scanners plus one M.R.I. machine. Telephonic transmission of C.T. scans was not in use and was not envisaged for the foreseeable future.

**Neuro-pathology:** There are three neuro-pathologists comprising one wholetime service post plus two academic/service posts. There are no junior staff.
Neuro-anaesthesia: There are five w.t.e neuro-anaesthetists comprising three wholetime neuro-anaesthetists, two general anaesthetists with part-time commitments to neuro-anaesthesia and two part-time anaesthetists whose commitments are solely to neuro-anaesthesia.

Other Specialties: In addition, a neuro-ophthalmologist, two neuro-otologists and a radiotherapist/oncologist have sessional commitments in the Institute.

2.8. Organisation of neurosurgical and related services in the Mersey Region.

The Mersey Regional Department of Neurology and Neurosurgery has a catchment population of about 3 million comprising (i) most of the Mersey Region plus part of Lancashire; (ii) counties Clywd and Gwynned in North Wales c. 700,000 population; and (iii) the Isle of Man c. 30,000 population. The present neuroscience building, which was opened in 1972, is a purpose-built unit within the grounds of Walton Hospital which is one of the District General Hospitals in the Mersey Region. The neuroscience services in Liverpool have developed as a single entity. The Unit is funded by the Regional Health Authority but is managed at district level. As part of a D.H.S.S. pilot scheme, the Unit has been given a separate budget of about 5.5 million pounds sterling per annum for a three year period. The Unit is responsible for its own budget and use of resources. The wards, outpatient clinics, theatres, x-ray department, neuro-physiology department, neuro-pathology department, occupational therapy and physiotherapy departments are all contained within the one building. There are currently 133 beds being used in the Unit. They are allocated as follows:-

<table>
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<th>Department</th>
<th>Beds</th>
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<tr>
<td>Neuro-surgery</td>
<td>59</td>
</tr>
<tr>
<td>Neurology</td>
<td>45</td>
</tr>
<tr>
<td>Children's Ward</td>
<td>11</td>
</tr>
<tr>
<td>Programmed Investigation Unit</td>
<td>8</td>
</tr>
<tr>
<td>Intensive Therapy Unit</td>
<td>6</td>
</tr>
<tr>
<td>Pain</td>
<td>4</td>
</tr>
</tbody>
</table>

The unit is staffed as follows:-

Medical Staffing - There are five consultant neurosurgeons. The N.C.H.D. staff comprises two senior registrars, two registrars, four S.H.O's and one intern.
Workload - There are 1,000 - 1,100 surgical procedures carried out per annum in two dedicated theatres.

Neurology - There are six consultants. The N.C.H.D. staff comprises one senior registrar, one registrar and 3 S.H.O's.

Neuro-radiology - The neuro-radiology department has CT Scanning facilities but does not have M.R.I. There are three wholetime neuro-radiologists plus a senior registrar on rotation through the neuro-radiology department. There are CT scanners located in four district general hospitals in the region. Telephonic transmission by fax of CT Scans from these hospitals to Walton was indicated to be of major benefit especially in relation to head injuries.

Neuro-pathology - The neuro-pathology department includes a biochemistry and histopathology laboratory as well as electron microscope facilities and is staffed by two consultants with wholetime commitments to neuro-pathology. There are no junior staff. It is separately staffed/equipped and is administered independently from the pathology laboratory in Walton Hospital. The two laboratories carry out a small number of specialist tests for each other. The existence of two separate laboratories was admitted to have resulted in some duplication of equipment.

Neuro-anaesthesia - There are about three w.t.e.'s comprising one consultant with a virtually wholetime commitment; three with half-time commitments, and four with minor commitments to neuro-anaesthesia.

Organisation of neurosurgical and related services in the South West England Region.

There are two neurosurgical units in the region, the main one, staffed by four neurosurgeons, is based at Frenchay Hospital, Bristol with a catchment population of about 2 million people of which 1 million are in the Bristol city area. A smaller unit with two consultant neurosurgeons also exists in Plymouth, and it has a catchment population of about one million, (about 150 miles from Bristol). The geographical nature of the area and the distance between the two centres of population are the main reasons for having a second unit in the region. The following is a brief summary of the staff, facilities and workload of the Frenchay unit:-
Medical Staffing: There are four consultant neurosurgeons. The N.C.H.D. staff comprises one senior registrar, two registrars and four S.H.O's.

Workload: About 1450 neurosurgical procedures are carried out per annum (see detailed workload statistics attached at Appendix D). There are two theatres plus 52 adult and 10 children's beds.

Neurology: There are three consultants including one paediatric neurologist based in hospitals elsewhere in the catchment area but with sessional commitments (amounting to 1.3 w.t.e.) at Frenchay Hospital.

Neuro-pathology: There are two consultants each with a minor commitment to general pathology.

Neuro-radiology: There are two consultants each with a two session commitment to general radiology. C.T. scanners with image transmission facilities are in use in Frenchay and in A/E hospitals throughout the region. The image transmission facilities were stated to be of major benefit (see paragraph 6.7).

Neuro-anaesthesia: There are two w.t.e.'s comprising five consultant anaesthetists, each with about a four session commitment to neuro-anaesthesia.

SUMMARY

2.10. A comparative summary of the staff, facilities, population served and neurosurgical workload of the six centres visited is set out in Table 1 as follows:-
### TABLE 1

<table>
<thead>
<tr>
<th>GLASGOW</th>
<th>LIVERPOOL</th>
<th>FRENCHAY</th>
<th>BEAUMONT</th>
<th>ST. VINCENT'S</th>
<th>CORK</th>
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<tr>
<td>Neurosurgeons: 6</td>
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<td>S.H.O.'s: 4</td>
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<td>Theatres: 3</td>
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<td>Adult Beds: 90</td>
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<td>Paediatric/Children Beds: 10</td>
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<td>10</td>
<td>10</td>
<td>-</td>
<td>-</td>
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<td>*Operations: 1450-1550</td>
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<td>1425-1460</td>
<td>824</td>
<td>415</td>
<td>533</td>
</tr>
<tr>
<td>Ops. per Consultant: c.250</td>
<td>c.210</td>
<td>c.360</td>
<td>c.200</td>
<td>c.200</td>
<td>c.260</td>
</tr>
<tr>
<td>Population catchment (millions): 2.7</td>
<td>3.0</td>
<td>2</td>
<td>(no defined catchment area)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Comparisons between units on basis of number of operations should be treated with caution because of a number of variables e.g. detailed lists of operations are not available in all cases. Where they are available, certain basic procedures are listed in some instances but not in others.
SECTION 3 - General principles relating to the organisation of neurosurgical services.

3.1. To an overwhelming extent, the thrust of the information gathered and of the advice received has pointed in the direction of the centralisation of neurosurgical activity and related back-up disciplines into large neurosurgical/neurosciences units, with five or six consultant neurosurgeons catering for 2 - 3 million people, as opposed to having two or more smaller units for the same catchment population.

3.2. It was indicated that such a unit should be part of a large general teaching hospital. Neurosurgery is dependent on support specialties such as neuro-radiology, neuro-pathology, neuro-anaesthesia, and neuro-physiology all of which should be located in the same hospital preferably in close proximity to the neurosurgical unit. The range of equipment and expertise required is expensive, but is essential in order to provide an effective and efficient top-class service. There were diverse views on whether or not neurology in-patient services should also be centralised. However, there was general agreement that all neurologists in the catchment area should have sessions in the neurosurgical/neuroscience unit.

3.3. The advantages emanating from a centralised neurosurgical/neuroscience unit were identified as including the following:

(i) a higher standard of neurosurgery and consequently patient care arising from the fact that, in comparison with two or more small units for a similar population, there would be a larger throughput of patients resulting in a greater variety of clinical material. This would facilitate wider clinical experience and more regular practice of the various neurosurgical skills thereby improving patient care.

(ii) the development of sub-specialisation would be facilitated (e.g. paediatric neurosurgery, spinal neurosurgery and stereotactic neurosurgery) leading to a better service for patients and better job satisfaction for the neurosurgeons.

(iii) essential specialised back-up expertise in neuro-radiology, neuro-pathology and neuro-anaesthesia could be developed to a much higher level of sophistication. Teams of at least two consultants in neuro-radiology
and neuro-pathology would be justified rather than the alternative of a sole consultant or part-time consultants in each of these sub-specialties.

(iv) a centralised unit would be more cost-efficient as duplication of essential and expensive equipment, staff and facilities particularly for neuro-radiology, neuro-pathology and neurosurgery, would be avoided.

(v) a greater volume and variety of clinical material would be available - consequently the opportunities for high quality teaching and research would be much greater than in a decentralised service.

(vi) a centralised unit, as described above, would be more likely to attract the highest calibre consultant and non-consultant medical staff.

3.4. However there are a number of potential disadvantages to centralisation i.e.

(i) patients would have to travel greater distances as the catchment area would be much larger than if there were two or more units.

(ii) there are dangers involved in having all eggs in one basket in certain circumstances e.g. industrial action and outbreak of infection.

(iii) risks associated with a monopoly situation e.g. lack of competition leading to possible lowering of standards.

The Comhairle has concluded that the clear advantages in centralising neurosurgical services far outweigh the potential disadvantages.

3.5. While centralisation of neurosurgical activity into units of 5 or 6 neurosurgeons as described in earlier paragraphs is the ideal, there are various circumstances whereby the demography and topography of areas would not lend themselves easily to centralisation, e.g. where a significant section of the population would have to travel a large distance to a centralised unit. Where such circumstances apply the general advice received was that a smaller unit linked to a major unit is necessary. The Comhairle is in general agreement with this advice.
3.6. From the information and advice received, the Comhairle has come to the conclusion that in order to be viable, a minimum scale neurosurgical/neuroscience unit must have a team of three consultant neurosurgeons, at least one neuro-radiologist, a neuro-pathologist, a neuro-physiologist, anaesthetists with an interest in neuro-anaesthesia, neurologists, as well as a significant level of neurosurgical, neuro-radiological and neuro-pathological facilities.

3.7. Ireland with a population of 3.5 million has 8 posts of consultant neurosurgeon which gives a ratio of 1 per 450,000 people. The consultant population ratio of the three regions visited in the U.K. was on average about 1 per 500,000 people. It is understood that the ratio in the U.K. as a whole is also about one consultant neurosurgeon per 500,000 people. None of the consultant neurosurgeons in Ireland has advocated an increase in the overall number of neurosurgeons nor has there been any claims in relation to excessive workload. The Comhairle is of the opinion that a consultant population ratio of the order of 1 consultant neurosurgeon per 500,000 population is reasonable. Taking into account the low density of the population over a large geographical area, the Comhairle is of the opinion that the current establishment in Ireland of 8 posts of consultant neurosurgeon is appropriate.
SECTION 4 - Recommendations regarding the future organisation and development of neurosurgical services in Ireland.

4.1. The almost unanimous advice received has been towards the development of a single neurosurgical unit in Dublin and the continuation/up-grading of the neurosurgical unit in Cork as being the most desirable organisation of neurosurgical services for the country.

4.2. For geographical and population reasons, it was the general view that a unit in Cork must take precedence over a second unit in Dublin. The main arguments in favour of retaining/up-grading the Cork unit are the considerable distance between Cork and Dublin (160 miles) and the significant segment of the population of the country living in the Munster area (c. 1 million people).

4.3. The only dissenting voice in relation to having a single neurosurgical unit in Dublin is St. Vincent's Hospital. The Comhairle has noted that the written (Appendix B) and oral submissions made by St. Vincent's Hospital are concerned mainly at the perceived consequences for the hospital at the possible loss of its neurosurgical unit rather than any adverse consequences for the neurosurgical services in Dublin of having only one centralised unit. The hospital's main concerns are the broader service and teaching implications the loss of neurosurgery would have within the hospital and the effect this would have on the status of the hospital and on staff morale. The Comhairle feels that no cogent arguments were advanced to support the concept of having two neurosurgical units in Dublin within a few miles of each other. On the contrary, it was accepted by St. Vincent's Hospital during discussion that, if a neurosurgery service was being initiated in Dublin, one centralised unit would be the ideal.

4.4. As indicated in paragraph 1.9, St. Vincent's Hospital submitted a further document after the completion of the consultation process outlining the reasons for not moving neurosurgery from St. Vincent's Hospital [see Appendix B(ii)]. The main reasons put forward were:-
(i) the existence of a long established neurosurgical service in St. Vincent's which included a large workload, substantial resources of trained neurosurgical personnel, established bed complement including intensive care facilities plus well equipped and staffed theatre facilities.

(ii) extensive support facilities in terms of personnel and equipment.

(iii) coming on stream of eye and ear services with considerable potential to expand the existing co-operative work with neurosurgery and plastic surgery.

(iv) absence of neurosurgery would seriously compromise St. Vincent's ability to deal with the multiple injured patient with head injury and with elderly and demented patients.

(v) deleterious effect on level of expertise and training programmes in surgery, anaesthesia, radiology and nursing.

(vi) significant reduction of service to the patient population currently served by St. Vincent's Hospital.

4.5. In relation to (i) and (ii) above, the Comhairle acknowledges the significant contribution to the health services made by the neurosurgical unit in St. Vincent's. However, the existence of a service is not of itself a valid reason for its continuation. Moreover, it is currently understaffed and under-equipped e.g. only one permanent consultant neurosurgeon, no neuroradiologist, only three sessions in neuropathology, no neuropathology laboratory, no neurophysiologist etc. The Comhairle acknowledges the St. Vincent's Hospital argument that it has made requests to the Department of Health on a number of occasions for additional resources for neurosurgery, that the annual allocations to the hospital have been insufficient to meet every discipline's needs and that, in recent years, cutbacks had to be implemented throughout the hospital as a result of reduced allocations. The Comhairle wishes to point out that the current state of development of the neurosurgical unit at St. Vincent's Hospital was only a small factor in the conclusions it has reached regarding the future organisation of neurosurgical services in Dublin as a whole. The other reasons put forward by St. Vincent's Hospital for not moving neurosurgery are dealt with in Section 5.
4.6. The Comhairle has been able to identify only two options in relation to the development of neurosurgery in the country as a whole:

(i) the centralisation of neurosurgical activity in Dublin on to one site at Beaumont Hospital where there is already a well developed neurosurgery/neurosciences department with a multidisciplinary team approach comprising four neurosurgeons, two neurologists, two neuroradiologists, 1.1 neuropathologists, three anaesthetists with an interest in neuroanaesthesia, one neurophysiologist and two ophthalmologists with a special interest in neuro-ophthalmology as well as superb facilities and equipment.

or

(ii) a significant investment of financial and staffing resources in the neurosciences group at St. Vincent's Hospital in order to bring it up to minimum viable standards (see paragraph 3.6).

Both options would involve the continuation of the neurosurgical unit at Cork Regional Hospital though investment in this unit will be necessary for it to be brought to the standards of viability envisaged in paragraph 3.6. above.

4.7. In relation to option (i), while Beaumont Hospital has claimed that there are some deficits mainly in nurse and consultant staffing levels and theatre time, the Comhairle is of the view that these are not of a major nature and can be overcome (see later paragraph 6.2). Despite the thrust of the advice received, the Comhairle gave serious consideration to option (ii) but rejected it for the following reasons:

(a) No argument other than the maintenance of the status quo has been made as to why there should be two neurosurgical units in Dublin within a few miles of each other.
(b) From the national viewpoint, the organisation of neurosurgical services on the basis of one 4-consultant unit at Beaumont Hospital and two 3-consultant units at St. Vincent's and Cork Regional Hospitals would require 10 neurosurgeons. The appointment of 10 neurosurgeons for a population of 3.5 million people is not justified for the reasons outlined in paragraph 3.7.

(c) A significant investment of scarce financial resources and neuroscience expertise would be required to make the St. Vincent's unit viable. Two new consultant neurosurgeons, at least one neuroradiologist, a neuropathologist, a neurophysiologist and supporting N.C.H.D., technician, nursing and secretarial staff would be essential. A large investment in facilities and equipment for these new staff to function properly would also be required.

(d) If the two units at St. Vincent's Hospital and Cork Regional Hospital are to be retained then investment to develop two minimum-scale viable units with at least three neurosurgeons and the wide range of back-up expertise and facilities outlined in paragraph 3.6, will be essential. The larger investment would be needed at St. Vincent's Hospital which is closest to the major unit at Beaumont Hospital.

(e) Assuming that the financial resources could be made available to provide the facilities and expertise required for three units, it would be very difficult to recruit all the consultant expertise required.

4.8. Having considered all of the information and opinion gathered, the Comhairle has come to the conclusion that the continuation of three neurosurgical units in this country is neither viable nor justified. All of the evidence points to two units as representing the maximum required. Because of geographical and population considerations, a unit in Cork must take precedence over a second in Dublin - difficulties which are being experienced in the Cork unit also need to be rectified. (see paragraph 2.6).
4.9. It has been suggested that the unit at St. Vincent's Hospital could be continued if it were linked in some fashion with the major unit at Beaumont Hospital. The Comhairle is not attracted to this suggestion. Irrespective of whatever degree of linkage might be developed between the two units, the continuation of a unit at St. Vincent's which was understaffed and short of equipment is not a realistic option and would not even have the merit of satisfying St. Vincent's Hospital nor its consultant staff in neurosurgery and neurology. It has not been possible to fill the second post of neurosurgeon at St. Vincent's Hospital which has been vacant since 1984 due, we are informed, to the lack of adequate back-up staff and facilities there. In the same period, two vacant posts at Beaumont Hospital have been filled. Three more posts have become vacant since the consultation process was completed i.e. one at Cork Regional and two at Beaumont Hospital. Even if it were possible to fill the vacant post of consultant neurosurgeon and provide the equipment sought by St. Vincent's - see Page 4 of Appendix B(i) - the unit would not be viable in the context of the requirements of a minimum viable unit as set out in paragraph 3.6.

4.10. Having taken into account all the information and advice received, having taken particular cognisance of the views of St. Vincent's Hospital, having carefully considered the options and their repercussions, the Comhairle has decided to make the following recommendations:

"All neurosurgical activity currently taking place in Beaumont and St. Vincent's Hospitals should be centralised at Beaumont Hospital.

The neurosurgical unit at Cork Regional Hospital should be maintained and up-graded to minimum viable size".

4.11. It is the opinion of the Comhairle that the above organisation of neurosurgical services (subject to various matters outlined in later paragraphs being implemented) will result in the best possible service for patients. It will have all the advantages of centralisation and the potential disadvantages will be minimised. It will facilitate the pooling of scarce resources and expertise to provide a better service than currently exists.
4.12. These recommendations, if implemented, should have the following effects which should result in a better service for patients:— a larger throughput of neurosurgical patients should be achieved; there will be a greater variety of clinical and teaching material in the centralised unit; more regular practice of the various neurosurgical skills will result; the further development of sub-specialisation will be facilitated; the highest calibre consultant and non-consultant medical staff will continue to be attracted; overall, the neurosurgical service will be more cost efficient as duplication of expensive equipment, facilities and staff will be avoided; in addition, the expertise of various members of the St. Vincent's staff as well as some neurosurgical equipment will enhance the effectiveness of the Beaumont unit (subject to negotiation — see Sections 5 and 7).

4.13. The potential disadvantages of a totally centralised service will be minimised by the continuation/upgrading of the Cork unit. In general, patients will not have to travel greater distances as there will continue to be neurosurgical units in both Dublin and Cork. Only that segment of the population who live south and east of St. Vincent's Hospital will have slightly further to travel i.e. about 8 miles. The potential risks (e.g. strike, cross-infection) inherent in having only one large unit in the country will be minimised by the continued existence of the Cork unit. In extreme circumstances, the Cork unit would be in a position to provide an emergency service for the whole country. The existence of two units, though of different sizes, means that a total monopoly will not prevail and will ensure that a degree of healthy competition will exist.


During the discussions with Beaumont and Cork Regional Hospitals, there was general agreement on the desirability of defined catchment areas for each unit which would be reasonably flexible. The Comhairle concurs with this view and recommends
that the catchment area for the Cork neurosurgical unit should be the province of Munster (population c.1 million) and the catchment area for the Beaumont neurosurgical unit should be the rest of the country (population c. 2.5 million). It is envisaged that cross referral between the areas will continue mainly in relation to sub-specialisation. It is expected that the bulk of the more specialised work for the whole country will be carried out in Beaumont. A smaller proportion could be undertaken in Cork depending on the specialised skills of the neurosurgeons in Cork. It is recommended that a protocol be worked out between the Beaumont and Cork neurosurgical units in this respect and that representatives of the two units should liaise with each other on a regular basis to discuss matters of mutual interest to the betterment of the overall neurosurgical service.
Section 5 - Implications for St. Vincent's Hospital of centralisation of neurosurgical activity in Dublin at Beaumont Hospital.

5.1. The view has been strongly expressed by St. Vincent's Hospital that the cessation of neurosurgical activity at that hospital will have a detrimental effect on the hospital as a whole in respect of the overall quality of its service, especially head injuries, and in respect of various disciplines, in particular surgery, anaesthesia, neurology, radiology and pathology. It has also been claimed that it would be difficult to sustain a credible teaching programme in the absence of neurosurgery. St. Vincent's Hospital have also indicated that the loss of neurosurgery would also have broader implications i.e. in relation to staff morale and the status of the hospital.

5.2. The Comhairle understands the fears of St. Vincent's Hospital but feels they are somewhat exaggerated. All the major hospitals in the country other than Beaumont, Cork Regional and St. Vincent's Hospitals do not have a neurosurgical unit, yet they provide first class medical and surgical services across a wide spectrum of specialties. Moreover, the raison d'être of anaesthesia and the diagnostic specialties such as radiology and pathology is to provide the required support to the clinical specialties and not the reverse. The possible effects of the loss of neurosurgery on neurology are dealt with in Section 7. However, the Comhairle accepts that the removal of neurosurgical activity, if undertaken in isolation without the recommendations in Sections 5 and 6 being implemented and without the overall future role of St. Vincent's being clarified, could have adverse implications for St. Vincent's Hospital.

5.3. It must be stressed that the review of neurosurgery undertaken by the Comhairle is part of a wider ongoing review of acute hospital services being undertaken by the Minister and the Department of Health with the assistance of the Comhairle. The Comhairle is aware that, as part of this wider review, discussions are taking place regarding the re-organisation of acute hospital services in the
South-East Dublin/East Wicklow area and that St. Vincent's as the major hospital in that area has and will continue to have a very significant role therein and within the country as a whole. The Comhairle would like to stress that its recommendations in respect of neurosurgery constitute only one input to the overall review of hospital services. It therefore suggests that its recommendations in respect of neurosurgery should be implemented in the context of an overall plan for the future development of St. Vincent's Hospital.

5.4. The Comhairle is of the view that the recommendations in relation to neurosurgery, if accepted by the Minister, will remove the uncertainty regarding St. Vincent's future role in neurosurgery and will allow it to concentrate on defining its future role and development in the context of the review of acute hospital services in the South-East Dublin/East Wicklow area. St. Vincent's Hospital will not have to devote significant funding to up-grading and developing neurosurgery and related specialties. Moreover, the cessation of neurosurgical activity will make available resources and facilities in St. Vincent's which can be used to develop/reorganise other specialties in the hospital in the context of its future role.

5.5. St. Vincent's Hospital has claimed that "the absence of neurosurgery would seriously compromise its ability to deal with the multiple injured patient with head injury and with elderly and demented patients". The question of trauma and head injuries is dealt with in detail in paragraphs 6.3 - 6.12. inclusive. In essence, the Comhairle's opinion is that if the neurosurgical unit no longer existed in St. Vincent's, the hospital's position would be no different to other major A/E hospitals in Dublin such as St. James's or the Mater. In relation to elderly and demented patients, the Comhairle feels that similar arguments could be made by other major hospitals. St. Vincent's argument that "it is developing into a major trauma centre and its ability to deal with the neurosurgical consequences of trauma is crucial to the development of this service at this hospital" could also be made with equal validity by the two other major hospitals in south Dublin as the three share the accident/emergency workload.
5.6. St. Vincent's has claimed that the loss of neurosurgery will cause a significant reduction of service to the patient population currently served by it. It is obvious that the population in the immediate catchment area of St. Vincent's will lose the advantages of proximity should the neurosurgical unit move to Beaumont Hospital. However, the added distance is only 8 miles and for a service which is national/regional in character this does not represent a significant hardship. It has been stressed by the major A/E hospitals in Dublin that the overall neurosurgical service which they receive leaves room for improvement, in particular, in respect of elective cases and consultations with consultants rather than N.C.H.D.'s. The Comhairle accepts that unless the service improves as a result of the reorganisation envisaged in Section 6, there will be some validity in St. Vincent's arguments. The Comhairle is confident that the reorganisation proposed by it will lead to an improved service for all A/E hospitals in Dublin.

5.7. The Comhairle acknowledges the argument that the teaching of undergraduates and N.C.H.D.'s at St. Vincent's Hospital will be affected by the centralisation of neurosurgical activity in Beaumont. However, a reorganisation of the existing arrangements should overcome the difficulties. Beaumont Hospital is linked to the R.C.S.I. medical school and St. Vincent's to the U.C.D. medical school. It is recognised that it will be necessary that formal arrangements be made between Beaumont and the medical schools in its catchment area in respect of the teaching of neurosurgery. No major problem in achieving this is anticipated. The close links that already exist between the R.C.S.I. and U.C.D. in respect of a common medical qualification augur well for co-operation in the teaching of neurosurgery. Medical school representation on the proposed "Users Committee" should provide a useful forum for resolving any problems that may arise (see paragraph 6.13).

5.8. The arguments put forward by St. Vincent's Hospital for retaining neurosurgery because of links with plastic surgery and the coming on stream of E.N.T. and ophthalmic surgery at St. Vincent's are viewed as unconvincing in the light of existing policy on the development of the latter specialties within
Dublin hospitals. Ministerial policy as indicated in the 1980 allocation of specialist services is that the regional unit for plastic/maxillo-facial surgery in Dublin should be at St. James's Hospital, where it has recently transferred from Dr. Steevens' Hospital. Moreover, the Comhairle in its 1983 report on E.N.T. Services recommended that the regional E.N.T. unit for south Dublin be in St. James's Hospital, because of the close association between plastic/maxillo-facial and E.N.T. surgery. While Comhairle, in its 1981 report on Ophthalmic Services, recommended that the regional Ophthalmic unit for south Dublin be in St. Vincent's, it also recommended that neuro-ophthalmology and possibly orbital surgery, be developed at Beaumont Hospital.

5.9. In relation to St. Vincent's claim of proximity to, and liaison with, the National Medical Rehabilitation Centre, the Comhairle wishes to point out that the future role of the National Medical Rehabilitation Centre is currently under consideration by the Department of Health and it is also affected by the review of services for spinal injuries being undertaken by the Comhairle at the request of the Department. Consequently, no recommendations in respect of rehabilitation of neurosurgical patients can be formulated at this point in time.

5.10. The Comhairle has not approved of any post of neuro-anaesthetist or anaesthetist with a special interest in neuro-anaesthesia. On the advice of the Faculty of Anaesthetists, it has refused to attach such sub-specialist titles to posts of Anaesthetist including two recently approved for Beaumont Hospital. Consequently, while there are Anaesthetists in St. Vincent's, Beaumont and Cork Regional Hospitals who have experience and training in neuro-anaesthesia and who, in some cases, devote a major portion of their time to neuro-anaesthesia, they do not hold posts of Neuro-anaesthetist but rather that of Consultant Anaesthetist without a specified special interest.

5.11. The Comhairle is satisfied that the centralisation of neurosurgical activity at Beaumont Hospital will not necessitate a major relocation of staff or facilities from St. Vincent's Hospital.
5.12. It is recommended that the Consultant Neurosurgeon at St. Vincent's Hospital should transfer to Beaumont Hospital where his special interest in stereotactic neurosurgery will complement the skills of the existing neurosurgeons at Beaumont. It is envisaged that equipment devoted exclusively to neurosurgery at St. Vincent's, in particular stereotaxis facilities, should also transfer to Beaumont Hospital.

5.13. The position of one of the existing Consultant Neurologists, who holds a joint appointment between St. Vincent's and the Adelaide Hospitals, is dealt with in paragraph 7.3.

5.14. The Consultant Neuropathologist holds a joint appointment between the F.D.V.H. (4 sessions) St. Vincent's (3 sessions) and Beaumont (1 session). The Comhairle recommends that should he wish to maintain his involvement in neuro-pathology, then his 3 session commitment at St. Vincent's Hospital should be transferred to Beaumont Hospital subject to the agreement of all the parties concerned. His commitment to the F.D.V.H. might also be reviewed in the context of centralising all neurosurgical activity in Dublin at Beaumont Hospital.

5.15. Specific recommendations in respect of N.C.H.D., nursing and other back-up staff and equipment are outside the remit of the Comhairle. In the event of the Comhairle's recommendations being accepted by the Minister for Health, decisions on the precise number and type of staff, equipment and other resources to be transferred will be a matter for negotiation between the Department of Health, St. Vincent's Hospital and Beaumont Hospital. As already indicated, the Comhairle does not envisage that a major disruption will be necessary.
Section 6 - Implications for Beaumont Hospital in providing a centralised neurosurgical service.

6.1. In its submission, Beaumont Hospital has stated that while the facilities at Beaumont are superb, there are still significant deficits in staffing. It further states that a pooling of scarce national resources would ensure that the unit would operate more efficiently and be better able to deliver an optimum service to the country in general.

6.2. Beaumont Hospital's immediate requirements at consultant level can be met from the transfer of personnel from St. Vincent's Hospital as recommended in paragraph 5.12. In addition, Beaumont Hospital is seeking more neurosurgical nurses, a third neurologist, a sixth neurosurgeon, a fourth anaesthetist with an interest in neuro-anaesthesia; more neurosurgical beds and access to a third theatre as well as various pieces of equipment. These are matters for negotiation between the Hospital and the Department of Health and St. Vincent's Hospital in so far as the transfer of resources is involved. With regard to the question of the sixth neurosurgeon, it has been indicated to Beaumont Hospital that it is not the Comhairle's intention that the centralisation process should involve any reduction in the current number of posts of Consultant Neurosurgeon based in Dublin which is six.

6.3. At the meeting with representatives of the A/E hospitals in Dublin which do not have neurosurgical units, all the hospitals stated that they had no formal links with either of the neurosurgical centres in Dublin and they expressed dissatisfaction with the level of neurosurgical input they were currently receiving. While there was no great problem in having emergency head injuries requiring neurosurgical attention admitted to the neurosurgical units, they indicated that there were considerable and undesirable delays from their point of view in having elective cases admitted and in having consultations with the consultant neurosurgeons rather than with N.C.H.D.'s. In order to remedy these deficiencies, each of the A/E hospitals was firmly of the view that it should have formal links with a neurosurgical unit involving a named neurosurgeon being responsible for providing a service to it. All these hospitals stated that their objective was to have access to
adequate and continuous consultant expertise in neurosurgery - the issue of whether there was one or two neurosurgical units in Dublin was not of major importance to them.

6.4. The main neurosurgical input to the Accident and Emergency services is in respect of head injuries. The general view of neurosurgeons is that the key to proper care of head injuries is early diagnosis followed by treatment in the appropriate location. It has not been possible to ascertain the percentage of head injuries which require neurosurgical intervention. The general impression the Comhairle has received is that about 1 - 2% would require intracranial operation and about 10% would require neurosurgical care. St. Vincent's Hospital, in its submission, [see Appendix B (ii)] has claimed that the transfer of head injury patients requiring neurosurgical intervention carries with it a very considerable risk of increased morbidity and mortality. However, the general advice the Comhairle has received from neurosurgeons is that it is sound medical practice to move the vast majority of head injured patients requiring neurosurgical intervention provided they had been adequately resuscitated and stabilised before transfer. Where multiple injuries are so severe that immediate transfer would be dangerous, other injuries should be treated initially and the patient transferred to the neurosurgical unit as soon as it is safe to do so.

6.5. All but one of the Dublin hospitals providing A/E services have sought a two session commitment from a named neurosurgeon for accident/emergency consultations, ward consultations, and out-patient clinics. The neurosurgeons at Beaumont Hospital have expressed a willingness to provide a two session commitment to each of the Dublin A/E hospitals. The general advice received from the neurosurgical centres outside of Dublin is that for each neurosurgeon to spend two sessions per week off site in another hospital for ward consultation and out-patient clinics would not be the best way of utilising the consultants' time and expertise.

6.6. One Dublin hospital wanted a four session commitment to include trauma operative work. The unanimous view of all neurosurgeons consulted was that
neurosurgeons should not operate other than in the neurosurgical unit because the back-up staff in other hospitals have limited training/experience in neurosurgery. In addition, the full range of specialised facilities/equipment would not be available.

6.7. All major A/E hospitals require anaesthetists capable of resuscitation and stabilisation; surgeons and N.C.H.D.'s trained and experienced in dealing with head injuries; a good I.C.U.; and a C.T. scanner. They also require expert advice from a neurosurgical centre on whether or not specific patients should be transferred to such centre for care and treatment. Technological advances have reached the point where diagnosis and advice can now be supplied irrespective of distance by means of telephone communication and the transmission of C.T. and other scans by fax machine. The image transfer technology required is currently in use in some hospitals in Great Britain and is relatively inexpensive. The Comhairle Committee was impressed with the system which it saw in use in Frenchay Hospital in Bristol - it was also in use in Walton Hospital in Liverpool but not in Glasgow. Since the introduction five years ago of the image transfer technology in the South-West England Region, the overall number of transfers of head injuries to the neurosurgical unit in Frenchay Hospital has been reduced. As the neurosurgical team can now see the C.T. scan while the patient is in the local hospital, inappropriate transfers have been significantly reduced with a consequent reduction in the number of neurosurgical trauma beds required. Image transfer terminals have been installed in the consultants' homes in Bristol thus ensuring constant access to neurosurgical opinion to all A/E hospitals in the region.

6.8. The Comhairle committee had hoped that the provision of constant consultant neurosurgical cover to all major A/E hospitals in Ireland could have been facilitated by each such hospital having a C.T. scanner and image transfer technology (similar to that described in paragraph 6.7.) linked to the neurosurgical unit in Beaumont Hospital. C.T. scanners are already available in a number of major A/E hospitals and it is hoped that they will, in
the foreseeable future, be available in all the major A/E hospitals. The committee had hoped to organise a demonstration of this technology in Ireland but it was informed that British Telecom, the manufacturers of the technology in use in Britain, are no longer making the equipment due to insufficient demand in Great Britain. Further research with a view to improving the product is being carried out by British Telecom. However, it is understood that somewhat similar technology is being marketed by other companies. It is suggested that the Department of Health should investigate the issue of image transfer technology with a view to the introduction of appropriate systems into the hospital services. The linking of C.T. scanners by this means will facilitate the provision of neurosurgical opinion on a country wide basis and reduce the necessity for consultants to be off-site at the neurosurgical unit.

6.9. The Comhairle recommends that each Accident and Emergency hospital throughout the catchment area served by the Beaumont unit should have neurosurgical advice available to it at all times over the telephone including ready access to consultant neurosurgical opinion. In addition, it recommends that the neurosurgeons at Beaumont Hospital should divide the catchment area between them to achieve a situation whereby each A/E hospital would have a named neurosurgeon with whom it can develop a special relationship. Ideally each A/E hospital should have personal contact with a named neurosurgeon who would visit the hospital on a regular basis.

6.10. The Comhairle concurs with the view that each of the major Dublin A/E hospitals (St. James's, St. Vincent's, M.A.N.C.H., the Mater and J.C.M. Hospitals) should have a formal link with the Beaumont neurosurgical unit. It is suggested that this should be in the form of a two session commitment from a named neurosurgeon. It will be necessary for this commitment to be formalised by way of the neurosurgeons posts being re-structured, with the approval of the Comhairle, to incorporate this commitment. However, it would not necessarily mean that the neurosurgeon would spend all of the two sessions on-site at the A/E Hospital but rather that he would be available to meet the consultation needs of the hospital, for both accident/emergency
cases and in-patients, to the extent of two sessions per week. In a small number of multiple injury cases, the consultant neurosurgeon may be needed to carry out simple emergency procedures on site - under the arrangements envisaged this should be possible following consultation with the neurosurgeon. Initially, the physical presence element should be the major component but, the introduction of image transfer technology, recommended above, should minimise this component in due course. The relationship between the Beaumont neurosurgical unit and the major A/E hospitals should also include the possibility of conducting out-patient clinics locally.

6.11. The relationship between the neurosurgical unit and each A/E hospital in its catchment area should include the development by the neurosurgical unit, of an educational programme in relation to the management of head injuries which should include the issuing of guidelines and the delivery of occasional lectures by the neurosurgeons to the relevant staff in the A/E hospitals about head injuries. In this respect a copy of the "Criteria for Consultation about and Guidelines for the Management of Patients with Recent Head Injury" issued by the Glasgow Neurosurgical Department is attached at Appendix E. The report of the Mersey Regional Head Injuries Working Party which includes guidelines for the management of head injuries is attached at Appendix F. It is recommended that the Beaumont and the Cork Regional Neurosurgical units should jointly prepare and issue guidelines of a similar nature to all A/E hospitals in their respective catchment areas.

6.12. It is recognised that particular problems may arise in transferring patients from the West and North West of Ireland to Beaumont Hospital because of distance factors. It is envisaged that most patients will continue to be transported by ambulance. Where necessary and feasible, air ambulance transport should be used. However, it is understood from recent discussions with the Department of Defence/Air Corps on the transport of spinal injury cases that,
6.13. The Comhairle feels that the recommendations in paragraphs 6.9 - 6.11 will go a long way towards eliminating the dissatisfaction expressed by the major hospitals with the neurosurgery services they currently receive. In addition, the Comhairle recommends that a formal "Neurosurgery Users Committee" be established comprising representatives of health boards, major voluntary hospitals and medical schools. Such committees exist in respect of other disciplines which have national/semi-national dimensions but are organised by the hospital providing the service. The Comhairle feels that the Neurosurgery Users Committee should be serviced by an independent agency and have a formal relationship with Beaumont Hospital and the Cork Regional Hospital whereby it can be a forum for the users to give expression to and to have problems resolved. It is suggested that the Department of Health or Comhairle na n-Ospidéal would be appropriate independent agencies to service the users committee.
Section 7 - Implications for neurology directly related to centralisation of neurosurgical activity at Beaumont and the need for a separate study of neurology services.

7.1. During the course of its activities the Comhairle became aware of a number of issues that need to be resolved in relation to the organisation of neurology services in the country. There are eleven neurologists in post in Ireland at the moment: seven in Dublin including three paediatric neurologists; three in Cork, and one in Galway. One of the two neurologists in south Dublin is due to retire soon and there are also two physician posts vacant in south Dublin where the former incumbents contributed to neurology.

7.2. Two different systems of organising neurology services were described during the course of the visits to Great Britain. In both the West of Scotland and the Mersey regions, there are six neurologists with centralised in-patient facilities (45-50 beds) located in the neuroscience units in Glasgow and Liverpool respectively. They provide out-patient clinics throughout their catchment area. In the South-West England region, there are three neurologists who are based in various hospitals in the Frenchay neurosurgical catchment area but who had access to the investigative facilities in the neurosurgical/neuroscience unit at Frenchay Hospital. Each neurologist has beds there as well as in his/her base hospital.

7.3. The organisation of neurology services is outside the scope of this document. However, it has repeatedly been stressed during the discussions with various hospitals that the situation in neurology is in a critical state especially at consultant level. The Comhairle has therefore decided that an overall review of neurology services in Ireland be carried out as quickly as possible and it has set up a committee for this purpose.
7.4. While this document does not extend to an overall review of neurology services per se, the terms of reference indicate that the implications for those aspects of the work of neurologists directly related to the centralisation of neurosurgical activity in Dublin should be examined.

7.5. In North Dublin there are two neurologists based at Beaumont with commitments also to the Mater Hospital. In South Dublin there are two neurologists shared between St. Vincent's and the Adelaide Hospitals one of whom is retiring in 1989 and will not be affected by the proposed centralisation of neurosurgical activity. There is currently no neurologist in St. James's Hospital.

7.6. The remaining Consultant Neurologist at St. Vincent's/Adelaide Hospitals, applied in 1978 for the post he now occupies on the basis that there was a neurosurgical unit in St. Vincent's Hospital. An element of his work is related to the neurosurgical activity carried out there. The proposed cessation of neurosurgical activity at St. Vincent's and its transfer to Beaumont will affect his work practice. The Comhairle recommends that, in implementing the recommendations in this report, the Department of Health should enter into negotiations with Beaumont Hospital, St. Vincent's Hospital and the consultant concerned on the question of the restructuring of his post as a direct consequence of the transfer of neurosurgery from St. Vincent's Hospital to Beaumont Hospital. In making this recommendation, the Comhairle wishes to stress that whatever agreement may be reached in respect of this appointment should be without prejudice to the policy to be adopted in the structuring of posts of consultant neurologist in the future.