

CARDIAC SERVICES

BACKGROUND

Every year approximately 31,000 patients are admitted to hospital with chest pain, unstable angina or acute myocardial infarction. 26,000 angiograms, 9,700 angioplasties and/or stent insertions and 5,800 coronary artery by-pass grafts are performed annually. Rates of interventional angiographic procedures have climbed steadily over the past few years whilst the number of open-heart surgical procedures has plateaued.

The distribution of public cardiac services across Greater Metropolitan Sydney needs to be extended. Three Area Health Services (Illawarra, Central Coast and Wentworth) do not have public hospital cardiac surgical services nor do they have access to locally based interventional angiography.

A working party of the GMSIG was established to examine a range of issues in relation to cardiology services. The group was chaired by Mr Michael Hollands, Chairman, Committee of Chairmen of NSW Medical Colleges, Chairman of the Royal Australasian College of Surgeons in New South Wales and an Upper Gastrointestinal Surgeon. It comprised cardiologists, cardiac surgeons, emergency physicians, The Ambulance Service and nurses. As with many other working parties, an open forum was held involving cardiologists and cardiac surgeons. Consultants Peter Brennan and Bernie McKay were also engaged by The NSW Department of Health to advise on several aspects of cardiac services. The working party consulted widely and reviewed data and the literature and presented their report to the GMSIG on 23 February 2001.

DISCUSSION

Over the last decade new and effective treatment modalities for the management of ischaemic heart disease have been developed. The working group considered a range of issues in relation to the effectiveness of some of these treatments and the distribution of access to these across greater metropolitan Sydney. Particular issues examined included the use of fibrinolysis versus intervention and where intervention was the preferred modality, whether it should be restricted to a small number of facilities with a range of backup services or available for wider distribution. In relation to the latter a key issue identified, was whether angioplasty should be performed in centres without on-site cardiac surgical support. In the final analysis the group advised that interventional angiography could be provided without onsite surgical support provided that such support was available within a reasonable travel time. Other issues discussed included the networking of cardiology services and the role of the private sector.

RECOMMENDATIONS

1. That all Area Health Services employ appropriate numbers of well-trained clinicians to provide cardiac services. Inherent in this recommendation is the need to also provide appropriate support services eg. rehabilitation, geriatrics, ICU beds, screening facilities for cardiac catheterisation, etc. Clinicians consulted in this process wish to express their support for initiatives taken in the ambulant management of cardiac failure and secondary preventative services. Areas of special need include Illawarra, Central Coast and Wentworth, all of which have populations of over 300,000 and high projected growth rates, but have limited public hospital access to angiography and no public cardiac surgical services.
2. That paediatric and quaternary services not change over the next three years, but at that time, possible need for a second cardiac transplant facility be considered, perhaps in conjunction with a paediatric facility.
3. That electro-physiological adult congenital heart surgery be based at Westmead Hospital because of its close proximity and shared staff with The Children's Hospital at Westmead.
4. That interventional angiography services provided at Concord Hospital continue. Additional interventional angiography services should be established at Nepean, Gosford, Wollongong and perhaps Bankstown. Establishment of a facility at Campbelltown should be included in forward planning by South Western Sydney Area Health Service in accordance with the Australian Health Ministers Advisory Council (1995) recommendations. A minimum of 900 cases per annum (inc.150 angioplasty) and 75 cases/individual should be maintained.
5. That acute cardiac emergencies be managed by a physician with a declared cardiology interest, especially in view of the increasing use of new drugs and interventions.

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6. That networking arrangements be expanded and include acute cardiac and surgical services. A system of incentives for effective networking should be considered and perhaps quarantined funding could be considered for the establishment of satellite services. Networking with adjacent private facilities should also be encouraged especially as it provides joint experience, may assist with shared equipment and may provide surgical backup for stand-alone angiography facilities. The arrangement between Royal Prince Alfred Hospital and Liverpool Hospital was acknowledged as being well developed. The development of the network arrangement between Westmead and Nepean was to be advanced and more effort be made to develop a similar arrangement between Gosford and Royal North Shore Hospitals. Negotiations between Wollongong and either St George or Prince of Wales Hospital should be given added thrust as there appears a major need to service the population of the Illawarra (population 340,000) with improved services. Consideration should be given by South Eastern Area Health Service to developing an interventional angiography unit and perhaps satellite surgical facility at Wollongong along the lines of the successful model set up between Royal Prince Alfred Hospital and Liverpool Hospitals or provide specific beds/access for patients from the Illawarra Area Health Service. If the former option is adopted it is essential that access to emergency cardiac surgical facilities be provided at a specific South Eastern Area Health Service hospital. This recommendation is supported by the slightly greater growth rate of the population in Illawarra as compared with South Eastern Sydney (0.66% cf 0.88% annual growth).
7. That Area Health Services also investigate the development of formal links to rural areas.
8. That electro-physiological studies be available in every Area Health Service.
9. That the development of a statewide database be considered essential. If evidence subsequently demonstrates distinct advantage for emergency intervention in acute myocardial ischaemia planning of facilities including ambulance, nursing care, ICU beds will be impossible without accurate data collected prospectively.
10. That South Eastern Sydney Area Health Service establish a single cardiac surgical service for their population of 750,000.

BRAIN INJURY REHABILITATION

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BACKGROUND

Acquired Brain Injury (ABI) is defined as “injury to the brain, which results in deterioration in cognitive, physical, emotional or independent functioning. ABI can occur as a result of trauma, hypoxia, infection, substance abuse, degenerative neurological disease or stroke. These impairments to cognitive abilities or physical functioning may be either temporary or permanent and cause partial or total disability or psychosocial maladjustment” (Department of Human Services and Health 1994). Traumatic Brain Injury (TBI) is a subset of ABI. TBI is brain injury caused by some form of traumatic event leading to behavioural, cognitive and psychosocial dysfunction.

In 1990 The NSW Department of Health and the Motor Accident Authority established the Brain Injury Rehabilitation Program (BIRP). In 1995 a Policy Framework was also established describing the minimum rehabilitation (including brain injury) service levels which need to be provided by Area Health Services.

Current brain injury rehabilitation services are comprised of three major metropolitan adult BIRP services, including inpatient units (Royal Rehabilitation Centre, Liverpool, Westmead), two paediatric inpatient units at The Children’s Hospital at Westmead and Sydney Children’s Hospital, a paediatric brain injury service at John Hunter Hospital and a range of other non-inpatient and transitional living services across the state. There are a total of fifty-two adult inpatient beds designated to the NSW BIRP. The three Sydney units provide adult inpatient rehabilitation and non-inpatient care, each having a purpose built sixteen bed inpatient facility staffed by medical nursing and allied health staff.

The GMSIG established a working party to examine the issue of brain injury rehabilitation and invited Dr Sue Hodgkinson, a neurologist from Liverpool Hospital, to chair the group. The group worked closely with The NSW Department of Health and *Breust and Associates*, consultants appointed to draft a Brain Injury Rehabilitation Services Plan in New South Wales. There was broad consultation with stakeholders from existing BIRP units, other Brain Injury Rehabilitation Services, and a number of Government Departments and the Motor Accidents Authority. Interim recommendations from the group were report was discussed and endorsed at the GMSIG meeting of 30 March 2001. However the final report is still under development.

DISCUSSION

It has been difficult to obtain accurate data on the number of separations for traumatic brain injury as the coding system does not allow the identification of brain injury in a simple way. Individual

BRAIN INJURY REHABILITATION

BIRP Units also have variable data sets and resources for data collection. However it seems apparent that despite predictions of significant rises in head injury, particularly as a result of road traffic accidents, this in fact has not occurred. The reasons for this include improved road and car engineering, the use of seat belts and air bags and improved trauma and neurosurgery services. Without an increase in incidence of brain injury it would not be appropriate to consider the establishment of additional inpatient services and it is recommended that the existing inpatient services remain and continue to be funded on a statewide basis.

The Committee also discussed the issue of treatment of non TBI patients in BIRP Units and it was agreed that this should occur for certain conditions and within a certain age range. Networking, particularly with rural brain injury rehabilitation services, was also discussed and it was agreed that there needed to be tighter arrangements than those which currently exist.

In relation to paediatric services it was determined that the two current paediatric TBI services continue and that the needs of longer term BIRP clients be given more attention.

Again, data was clearly identified as an issue of concern and a minimum data set needs to be established and complied with.

The Committee also considered the issue of clients with challenging behaviours and recommended that ongoing work be undertaken on this issue.

RECOMMENDATIONS

- 1 That NSW BIRP units maintain their role of meeting the behavioural, cognitive and psychosocial needs of people with TBI.
- 2 That a regional brain injury rehabilitation service have reasonable access to all of the following components:
 - specialised medical inpatient care
 - community rehabilitation programs
 - transitional living programs

RECOMMENDATIONS

- services dedicated for children and adolescents
- community development approach with family and carer support
- quality improvement programs
- education program, research and professional development
- appropriate data collection.

3. Inpatient BIRP Units

- That BIRP inpatient bed capacity of 52 beds throughout the NSW hospital system, be maintained, including dedicated BIRP beds for brain injury rehabilitation up to 2005
- the current number of adult inpatient BIRP Units should be maintained
- the number of BIRP inpatient beds required should be reviewed by 2005/2006 as part of revision of the BIRP Strategic Service Plan.

4. Non-TBI

That selected individuals with non-TBI be treated by BIRP Units. These admissions should be subject to the availability of resources and lack of alternative appropriate services, where these individuals' rehabilitation needs are consistent with the expertise offered by BIRP staff.

At the discretion of unit Directors, those individuals with non-TBI should generally be drawn from age range 15 to 35 years and with conditions resulting from cerebral haemorrhage, anoxia and post infection brain injury.

5. Networking

That tighter linking through preferred referral networks between metropolitan and rural units be required to ensure rural and city residents are provided with good access and best practice services.

Guidelines for operation of designated referral patterns should be formally considered and adopted by BIRP Directors and Area Health Services.

BRAIN INJURY REHABILITATION

RECOMMENDATIONS

6. Paediatric Services

That the two paediatric TBI services be continued. A paediatric brain injury services coordinator should be appointed in all Brain Injury Rehabilitation Programs.

The NSW BIRP should adopt a best practice model of rehabilitation of children and adolescents who have sustained ABI across all NSW units. This model should be developed and implemented by the BIRP Directors.

Representatives of the Commonwealth Rehabilitation Service and other job network providers and BIRP Unit Directors should develop a close network and work towards meeting the needs of longer-term BIRP clients. Attention should also be paid to transitional support for young people leaving paediatric rehabilitation.

7. Data Collection and Research

That BIRP Unit Directors, in conjunction with the NSW Department of Health, develop a comprehensive data strategy for BIRP. The BIRP Unit Directors should appoint a chair from within their group to lead this process, perhaps on a rotating basis. Consideration should be given to funding a data coordinating support person managed through one of the BIRP Units with responsibility for supporting this service.

The NSW Department of Health implements a minimum data set commencing financial year 2000/2001.

The UAR and hospital costs data collection will be used in future years to collect financial data on the costs of BIRP units.

8. Other Recommendations

That a working party be convened to assess and cost options for the provision of specialist services for clients with challenging behaviours and make recommendations to the NSW Department of Health. Adult and adolescent problem clients should be targeted and there should be a link to adult and child/adolescent psychiatry.

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Multiple representations were made to the chair about the plight of the non-TBI young patient. This is particularly a problem once the patient is in the community where there can be difficulty accessing services provided by the health system for these vulnerable and usually non-compensational patients. It is recommended that a group be urgently convened to advise further on the specific needs of this group of patients.

BONE MARROW TRANSPLANTATION

BACKGROUND

Bone Marrow Transplantation has been increasingly used since the late 1960's as a treatment for primary bone marrow disorders such as leukaemia or immune deficiency diseases and also in the treatment of malignancies where transplantation enables the use of large doses of chemotherapy. Transplantation can be either autologous where the patient has previously donated their own bone marrow, or allogeneic where the donor is a tissue matched related or unrelated donor. Allogeneic transplantations are more complex than autologous transplantations and risk is further increased where the allogeneic donor is unrelated.

The following table details bone marrow transplants carried out in New South Wales hospitals by type of transplant for the five years from July 1, 1995 to June 30, 2000.

BONE MARROW TRANSPLANTS IN NSW July 1995 - June 2000				
Hospital	Autologous	Allogeneic (related)	Allogeneic (unrelated)	Total
Liverpool	55	0	0	55
Westmead	66	143	38	247
Children's Hospital	61	35	20	116
Sydney Children's	39	55	38	132
Prince of Wales	33	1	1	35
St Vincent's	175	89	24	288
St George	38	0	0	38
RPAH	125	40	5	170
RNSH	119	33	0	152
Sydney Adventist	19	0	0	19
Gosford	4	0	0	4
Newcastle	113	0	0	113
TOTAL	847	396	126	1,369

Professor Carol Pollock, a Renal Physician, was asked to convene a working party of the GMSIG to examine issues in relation to bone marrow transplantation. Three meetings were held with representatives from tertiary haematology units and a range of documents were reviewed and correspondence exchanged. Additional discussions were held with other key stakeholders including nursing representatives. The working party reported back to the GMSIG meeting of Friday, 2 February 2001 and their recommendations were supported without amendment.

DISCUSSION

The working group examined a range of issues including equity of access to bone marrow transplantation, levels of demand, and whether there was a "centre effect" in relation to bone marrow transplantation which would potentially reduce the number of sites where allogeneic transplantation was performed.

BONE MARROW TRANSPLANTATION

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Based on the evidence, recommendations arising include the need for a broader distribution of autologous bone marrow transplantation, while allogeneic transplantation should be performed at fewer sites.

Another major issue discussed was the proposal that a central laboratory facility be established and this too form part of the recommendations of the working group.

Nursing issues considered included the need for postgraduate training for nurses involved in oncology units and the needs for good medical support and a team approach to transplantation.

Other issues identified in the report involve junior medical staff and registrar training and cord blood banking.

As stated above the recommendations described below are supported without amendment by the GMSIG.

RECOMMENDATIONS

1. Establishment of a Central Laboratory

That a central laboratory be established in NSW for the purpose of ex-vivo manipulation of blood products and data management. This is considered necessary because of the increasing complexity of technology, legislative requirements and data management required in bone marrow transplantation.

It is recommended that this type of laboratory be run by an independent organisation such as the Australian Red Cross Blood Bank. The laboratory should be equally accessible to all tertiary haematological units.

To facilitate the establishment of the central laboratory it is recommended that a working party be formed with representation from:

- NSW haematologists (adult and paediatric allografting and non-allografting units)
- a haematologist from outside NSW
- Australian Red Cross Blood Bank

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- Australian Bone Marrow Donor Registry
- Therapeutic Goods Administration
- NSW Department of Health.

The Working Party should advise on:

- location of the Central Laboratory
- governance and management
- funding
- logistics for the provision of service.

2. Standardisation of patient selection protocols

That standard patient selection protocols be adopted across NSW that allow equal and uniform access to blood and bone marrow transplantation. Patient data should be collected as part of mandatory reporting to the Australian Bone Marrow Transplant Recipient Registry (see 11 below).

3. Autologous bone marrow transplantation

That autologous bone marrow transplantation be considered an integral component of the treatment of acute leukaemia and be provided by all tertiary haematology units. These services are currently provided at all major sites except Nepean, Wollongong, Concord and Gosford Hospitals. Autologous transplantation at these sites is unlikely to incur significant additional costs if supported by a central laboratory facility.

4. Related allogeneic bone marrow transplantation

- That related allogeneic blood and bone marrow transplantation only be undertaken in units consistently performing at least 10 allogeneic grafts per year. Units performing less than 10 allogeneic grafts per year should not be reaccredited to undertake these procedures. Accreditation could be undertaken by the Australian Bone Marrow Transplant Recipient Registry or the Australian Bone Marrow Donor Registry. Services would be

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concentrated at Westmead and St Vincent's Hospitals with meaningful cross-appointments from present units.

- That cross-appointment of staff and sharing of clinical duties should occur in Area Health Services with more than one major haematology unit.

5. Matched unrelated donor allogeneic and non-HLA identical transplants

That matched unrelated blood and bone marrow transplantation (including cord blood transplantation) and related allogeneic transplants with a less than 6/6 HLA match be undertaken only in units accredited by the Australian Bone Marrow Donor Registry to undertake these procedures. Because of the agreed difficulty in managing these patients, a maximum of 2 adult units (Westmead and St Vincent's) in NSW should undertake these forms of blood and bone marrow transplantation.

6. Novel procedures in blood and bone marrow transplantation

That novel procedures in blood and bone marrow transplantation (eg 'mini-transplants') be undertaken only as research activities in units accredited for allogeneic bone marrow transplantation and with appropriate institutional ethical approval. Such activity should be publicised to all haematology units in NSW.

7. Research protocols in blood and bone marrow transplantation

That collaborative national and international research protocols only be undertaken with appropriate institutional ethical approval.

8. Cord blood banking and transplant

That a single cord-blood banking facility be available in NSW providing equal access to patients from all haematology units. Cord blood transplantation should occur only in

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units accredited for matched unrelated donor transplantation.

9. Establishment of additional clinical services

That the establishment of any new allogeneic bone marrow transplant services in NSW only be considered after the establishment of the central laboratory service. It should only be considered if it can be demonstrated that current case-loads warrant an additional unit. Any new unit should be established with initial staffing support from an established unit for up to 2 years.

10. Registrar and nursing training

That registrar and nursing staff be rotated between hospitals which have mutually agreed to provide a balance in general haematology (laboratory and clinical) and bone marrow transplantation.

11. Collaborative data collection

That all units must provide data to the relevant national blood and bone marrow transplant databases on a collaborative basis.

BACKGROUND

Neurosciences incorporate the disciplines of Neurology, Neurosurgery, Neurophysiology and Neuropsychology. For the purposes of the GMSIG planning process, it was determined that the focus would be on Neurology and Neurosurgery.

Neurosurgery includes the management of complex trauma, cerebral and spinal tumours, degenerative spinal conditions and a range of other disorders. Neurosurgical treatment encompasses craniotomies, stereotactic surgical procedures, shunt procedures and, increasingly, endovascular procedures. Neurosurgery is becoming increasingly sub-specialised and diagnosis and management requires a range of highly specialised medical and surgical expertise as well as technological support and other clinical support.

Specialised Neurology services provide services for patients with neurological disorders including stroke, epilepsy, headache and movement disorders, for example, Parkinson's disease. Much of the Neurology service is provided on an outpatient and ambulatory basis, with the majority of inpatient work centred on stroke and seizures.

Level 6 adult Neurosurgery and Neurology services are provided at Concord, John Hunter, Prince of Wales, Royal North Shore, Royal Prince Alfred, St George, St Vincent's and Westmead Hospitals in the Metropolitan Area. Services are also provided at Liverpool, Nepean and Illawarra Hospitals for both Neurosurgical and Neurology services, whilst Gosford provides a Level 5 Neurology service only. Paediatric services are provided at the Children's Hospital at Westmead, Sydney Children's Hospital and John Hunter Children's Hospital.

A selected specialty services planning paper on Neurosciences was completed in November 1998. Whilst the document received reasonable support, a number of concerns were raised in relation to inaccuracies in the reported data and the issue of networking of services. Nevertheless the document was used as the basis of the review process.

Dr Simon Roger, a Visiting Medical Officer and renal physician, was asked to develop a Neurosciences paper on behalf of the GMSIG. Dr Roger consulted widely with both neurosurgeons and neurologists and held a number of meetings with these specialty groups. Dr Roger presented his report to GMSIG on 2 February 2001 and it received unqualified support.

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DISCUSSION

For the purpose of this report we have segmented the discussion and recommendations into Neurology and Neurosurgery.

Neurosurgery

Consultations with Neurosurgeons highlighted a number of areas for consideration in relation to the future of Neurosurgical services in New South Wales. In common with other specialties the accuracy of activity data was again questioned and levels of staffing raised as a major issue. Currently there are seven vacant Neurosurgeon positions within Australia and of the 27 advanced trainee positions available, 10 are vacant. Neurosurgeons cited relatively low remuneration and high indemnity costs as reasons for this shortage. It was also reported that there were severe difficulties in recruiting Specialist Neuroscience Nurses.

Radiological support for Neurosurgery was also raised as an issue focussing on the need for tele-radiology and adequate access to CT and MRI scanners for public patients.

Networking of Neurosurgical services both within and across Areas was identified as less than optimal with the exception of the development of an Area neurosurgical service in South Eastern Sydney. Networking configurations were discussed and agreed to.

Finally, the Heads of Department of Neurosurgical Units expressed an interest in ongoing meetings which would review the changing patterns of service delivery in New South Wales and have an ongoing input into the planning process. These meetings would be supported by The NSW Department of Health which would provide data projections and flow data. Amongst other issues the meetings would also identify quality and outcome measures for Neurosurgical services across the State.

RECOMMENDATIONS**RECOMMENDATIONS**

1. That there be **four integrated services** as follows.

Southern - Prince of Wales, St Vincent's, St George and the Illawarra Hospitals

Northern - Royal North Shore, Gosford and John Hunter Hospitals

Central – RPAH and Concord Hospitals

Western - Westmead, Nepean and Liverpool Hospitals

These service groupings would be revised in two years time and serve as networks as outlined earlier.

2. That super-specialised neurosurgery, such as epilepsy, interventional, functional and radiosurgery be concentrated in one or two units within greater metropolitan Sydney.
3. That levels of staffing including medical, nursing and paramedical staff be reviewed, with a view to addressing the issues of recruitment, training and retention.
4. That an MRI scanner with 24 hr access for public patients be required for greater metropolitan Neurosurgical Units; that any hospital that accepts a patient with neurosurgical trauma have access to a CT scanner, again on a 24 hr basis.
5. That Heads of Department of Neurosurgery meet on a regular basis to review changing patterns of service provision, plan for the future and develop quality and outcome measures for Neurosurgery.

Neurology

Similar issues were raised in relation to Neurology as were raised with respect to Neurosurgery. Again the data was challenged and access to adequate medical imaging services was identified. However, the major focus of the Neurologists consulted was the issue of stroke management, as 70% of acute admissions through the public hospital system for Neurology are related to transient ischaemic attacks or cerebral vascular accidents. A paper prepared by Dr Leo Davis, Senior Staff

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Neurologist at RPAH, which described the role and function of major stroke units and other stroke units was presented to the group and largely endorsed by it.

Networking was again discussed and it was agreed that neurological networks should follow the configuration of the neurosurgical networks.

RECOMMENDATIONS

1. That there be four integrated services with the same boundaries and networking arrangements as for neurosurgery. The grouping of services should be revised in two years time.

Southern - Prince of Wales, St Vincent's, St George and Illawarra Hospitals

Northern - Royal North Shore, Gosford and John Hunter Hospitals

Central – Royal Prince Alfred and Concord Hospitals

Western - Westmead, Nepean and Liverpool Hospitals

Each of the above four integrated services should have at least one major stroke unit.

2. That **Major Stroke Units** require:
 - a full-time neurologist director, or director recognised to have the appropriate experience and training, plus administrative support
 - a minimum of 4 associated full-time neurologists (to enable 24 hr on-call service)
 - dedicated nursing unit
 - dedicated monitored high dependency beds and dedicated intermediate beds
 - an associated neurosurgical unit
 - neuroradiology services for interventional neuroradiology (minimum of 4 interventional radiologists to enable 24 hour on-call service)
 - CT, Angiography and MRI services on a 24 hr basis
 - associated Geriatric and Rehabilitation Services
 - neuropathological services (not necessarily co-located)
 - allied health services (social work, physiotherapy and occupational therapy)

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- associated outreach services (community support)
 - a catchment population of greater than one million.
3. That **all Stroke** units require:
 - a neurologist director or director recognised to have the appropriate experience and training
 - a minimum of 4 associated neurologists or general physicians for 24 hour on-call service
 - 24 hour CT capability
 - dedicated beds and associated nursing unit
 - allied health services
 - associated aged care, rehabilitation and outreach services
 - an associated major stroke unit
 - a catchment population of greater than 250,000.
 4. That patients in the younger age group (less than 45 yrs) suffering stroke be cared for, where possible, in major stroke units.
 5. That the Royal Australasian College of Physicians be requested to review the rotation of advanced trainees in Neurology and ensure placement at the peripheral centres of Gosford, Wollongong, Nepean and Liverpool.
 6. That dedicated nursing and allied health staff be an essential component of neurological services and that recruitment, training and retention of these staff be reviewed.
 7. That comprehensive epilepsy services be limited to Westmead, The Children's Hospital at Westmead, RPAH, and POW and The Sydney Children's Hospital.

RENAL SERVICES

BACKGROUND

The Greater Metropolitan Services Implementation Group established a Renal Services Working Party to examine the issues of service delivery for patients with renal failure in New South Wales and to advise on strategic directions for these services over the next five years.

Dr Paul Stalley, Head of Orthopaedics at RPAH, was asked by the GMSIG to establish a working party to examine the issues surrounding renal services. The working party considered a number of reports provided by The NSW Department of Health, and reviewed outcome studies relating to larger transplant units²²⁻²⁶. The Working Party also sent out a questionnaire to all members of the New South Wales and Australian Capital Territory Renal Physicians Association and to all Transplanting Surgeons at New South Wales Metropolitan Hospitals. The Working Party also received and considered a number of letters and written submissions and held a half-day meeting in November 2000 to discuss Renal Services.

DISCUSSION

The Working Party was asked to examine the current delivery of both Dialysis and Renal Transplantation and make recommendations in relation to both of these services. Their findings were presented to the GMSIG and discussed in some detail at two meetings.

Dialysis

In relation to dialysis, the Working Party was asked to consider a range of issues including indications for haemodialysis, projections on future levels of demand, the models of provision of dialysis services, adequacy of capital equipment, location of renal dialysis centres in metropolitan New South Wales and funding.

In summary, in relation to dialysis the working party found that there would be significant growth in the number of people requiring dialysis in New South Wales, that home dialysis should be provided wherever possible, that there needed to be a Renal Dialysis Centre established at Nepean Hospital; and that other issues relating to capital equipment and funding needed to be addressed. None of these issues were contentious and the recommendations are described in more detail below.

Transplantation

In relation to transplantation, the Working Party was asked to look at guidelines for transplantation, the level of both cadaveric and living-related donations, location of transplant services and funding.

Transplants are currently performed at eight centres and the table below identifies these and the number of transplants performed between April 1999 and March 2000.

Whilst there was consensus on guidelines to be applied for kidney transplantation and the need to increase the levels of organ donation, issues relating to the number and location of transplant centres were far more contentious. In essence, the working party recommended a reduction in the number of transplant centres in

New South Wales on the basis that a concentration of transplant services would lead to greater levels of expertise amongst clinicians, better support services, both for clinicians and for patients, greater levels of proficiency and ultimately a better service with quality outcomes for the consumer. Alternative views were put, both directly to the Working Party and to the GMSIG

Co-Chairs and others, and a range of documentation was presented to the GMSIG, when it considered Renal services for the second time at its meeting on 2 February 2001. Ultimately, the majority of the members of the GMSIG supported the recommendations of the Working Party with some amendments and these are also presented below.

TRANSPLANTS PERFORMED APRIL 1999 – MARCH 2000			
HOSPITAL	CADAVERIC	LIVING	TOTAL
Royal Prince Alfred	37	17	54
Westmead Adult	25	6	31
Children's Hospital at Westmead	1	8	9
Prince of Wales/Sydney Children's	13	4	17
John Hunter	8	5	13
Royal North Shore	9	4	13
St George	5	2	7
St Vincent's	4	1	5
NSW	102	47	149

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RECOMMENDATIONS

Dialysis

- 1 That the guidelines for the appropriateness of dialysis, drawn up by the Australian Kidney Foundation and approved by the NH&MRC be followed.
- 2 That provision for a global increase in the number of people requiring dialysis of 7% per annum be adopted.
- 3 That home dialysis be the preferred option for adults. However for children and for specific indications, the provision of adequate peritoneal dialysis be available for utilisation in the appropriate clinical setting. Any plan for global dialysis services must look at a relative increase in the number of satellite positions available.
- 5 That whilst there are adequate numbers of machines for home dialysis, haemodialysis and peritoneal dialysis at the present time, a continual process of upgrading and renewal must be followed. It is also recommended that there be an increased number of hospital and satellite machines provided.
- 6 That a centre for renal dialysis be resourced for Nepean Hospital
- 7 The working party seeks to have input into any proposal which deals with the funding of renal dialysis, and which may arise out of the current consultancy.

Transplantation

- 1 That the guidelines for the selection for transplantation as formulated by the Australian Kidney Foundation and currently being assessed by the NH&MRC form the basis for selection of patients to receive transplantation.
- 2 That all efforts to increase cadaveric donations be supported and consideration given to the appointment of funded directorships at each major teaching hospital.
- 3 That laparoscopic surgical services for renal transplantation be properly accredited and with adequate training in laparoscopic techniques evidenced.

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- 4 That transplant services be consolidated at Westmead, Prince of Wales, Royal Prince Alfred and John Hunter Hospitals, and The Children's Hospital at Westmead, and that clinicians from Royal North Shore, St George and St Vincent's Hospitals be offered full appointments to these services.
- 5 That in the event that levels of renal transplantation in New South Wales approach 220 per year, Liverpool Hospital be considered as the next centre for transplantation, if another centre is required.
- 6 That a model be developed for return of patients in the immediate post-transplant period to their referring renal treatment units, either in the metropolitan or country areas.
- 7 That Registrar training involve a rotational program with all trainees passing through large units doing renal transplantation as well as structured pathways through those units not undertaking renal transplantation.
- 8 That all transplant units be required by the NSW Department of Health to report statistical outcomes to the levels required to the ANZDATA collection base.

RADIOLOGY

BACKGROUND

Imaging services in NSW, both in the public and private sector have shown a significant growth in volume and complexity during the last two decades. Expensive technology such as MRI, spiral CT and digital radiography, has been introduced during this period. The improved diagnostic capability available to radiography has come at a significant cost to the health system and has increased the disparity in the levels of service across the State.

As a result of the inequity in the provision of radiological services across the Greater Metropolitan area and its impact on various aspects of the Metropolitan Plan (in particular, Cardiology, Neurosurgery, Emergency Departments and Intensive Care and District Hospitals), a meeting was called of the Heads of Radiology Departments of all tertiary referral hospitals in the greater metropolitan Area. Prior to the meeting, the Heads were circulated with background material provided by The NSW Department of Health and a paper prepared by Dr Steven Blome (RNSH). Following the meeting on 27 February 2001, letters and emails were received from many members of the group.

In June 1997 The NSW Department of Health published a Working Party Report on Radiology, CT, Ultrasound and Nuclear Medicine. This Report recommended that each Area Health Service establish a single medical imaging service functioning as an independent business unit and that a Peak Medical Imaging Council be established. It also stated that to redress the substantial shortage of Staff Specialist Radiologists, financial and non-financial rewards needed to be maximised. Similarly, to prevent the loss of highly skilled technical staff to the private sector and facilitate further recruitment, above award salary payments for technicians should be considered in order to realistically compete with the private sector. The Report went on to state that the implementation of Picture Archival and Communication Systems (PACS) and Computer Radiography, should be reviewed by the Equipment and New Technology Committee as these technologies were proving to be cost-effective and should provide significant opportunities for better service provision. The Report also stated that implementation of tele-radiology should be undertaken as soon as feasible and that a review of existing arrangements for provision and procurement of capital equipment was required.

The Report stated that the establishment of Area-wide imaging services would allow more effective deployment of equipment and resources across the Area, and increased bargaining power for equipment procurement. It also concluded that changes were needed to allow those involved in the speciality to become more accountable for their service, to have better control of their destiny, and to enable service providers to compete with their counterparts in private practice on a more equitable playing field. Inequities were identified in the access to and quality of the services across the State, particularly between metropolitan and rural areas. Difficulties of attracting and retaining staff in the metropolitan and particularly in the rural areas were highlighted and inequities in equipment distribution and technology availability were identified. The concluding paragraph of this Report stated that the document was a blueprint for change and needed further discussion and refinement. It went on to say that the success of achieving the goals set by the committee would depend on the level of support from all the stakeholders, including NSW Department of Health, the Area Health Services, the staff involved, and the other providers of similar services in the private sector.

DISCUSSION

At the meeting on 27 February 2001, various problems were identified. Issues discussed included difficulty in attracting and retaining Radiologists and technical staff in the public sector, increasing administrative loads placed on Heads of Radiology Departments, outdated equipment in many hospitals, coupled with inadequately funded or coordinated program for its replacement, and inequitable access to MRI for public patients.

Other issues highlighted included increasing workloads on Staff Radiologists due to the shedding of VMO positions, increasing administrative loads related to the provision of Area Health Services radiological infrastructure and planning for PACS, and inadequate resourcing of time-consuming imaging development projects.

RADIOLOGY

RECOMMENDATIONS

1. That benchmarking be utilised to ensure that District and Tertiary Hospital staffing levels are appropriately adjusted with the changing activity.
2. That the tertiary referral hospital Radiological Director be designated at least 0.2 FTE for administration, with an extra 0.3 FTE for those appointed Area Directors. There should be recognised time for teaching, research, and quality assurance activities, for all teaching staff radiologists.
3. That MRI Scanners be available 24 hours for public access at all principal referral hospitals.
4. That there is a need to explore public/private work arrangements which would allow improved financial incentives whilst retaining excellent people in the public system. Appropriate career structures need to be developed as well.
5. That a statewide strategy for digital imaging and PACS would appear essential both between the metropolitan areas and with country links. Many areas will require supplementary funding to allow the movement toward PACS.
6. That the increasingly computerised nature of Radiology Departments with the various RIS, PACS, and other computing needs mandates the need for Systems Administrators located within Radiology Departments, supernumerary to existing staff.

BACKGROUND

Maternity Services in New South Wales have been the subject of ongoing review for some time. Subsequent to the publication of the Shearman Report in 1989, a number of reviews have been undertaken. Most recently the NSW Maternity Advisory Committee was convened in November 1997 and its report "The New South Wales Framework for Maternity Services" was published in May 2000. This report describes a series of 5-year goals, objectives and strategies for maternity services in New South Wales.

The GMSIG recognised the importance of maternity services and their linkages to a range of other clinical and support services when examining the roles of Metropolitan hospitals and a working party was therefore established under the Chairmanship of Associate Professor Jerry Koutts, a haematologist from Westmead. The group was convened, comprising representation from a broad spectrum of professional groups and maternity units. In keeping with the other Areas considered by the GMSIG, the working party concentrated on the acute aspects of maternity services whilst acknowledging the importance of both antenatal and postnatal care.

The findings of the working party were presented to the GMSIG meeting of 30 March 2001 and its recommendations were largely endorsed.

DISCUSSION

As indicated above, the deliberations of the working party focussed largely on issues of acute care. As for other clinical specialty areas, the level and range of distribution of maternity services has developed over the years based on a mixture of clinical need, clinical leadership, population demand and a range of workforce issues, including the practice patterns of clinicians. As a result, the distribution of maternity services does not necessarily meet the needs of the current distribution of the population in Sydney and there is a need to review the distribution and networking of services.

The working party also acknowledged that wherever acute inpatient services were provided, good quality antenatal and postnatal care should be delivered locally, frequently in locations other than hospitals. Inherent in this is the need to ensure that primary care and community-based providers are networked closely into the overall maternity network.

MATERNITY

The working party described in some detail the standards of resources and professional support required by Level 6 Maternity Services. These included:

- 24 hour, on-site presence of Obstetric registrars at all times
- presence of senior Obstetric registrars within the staff structure
- sufficient staff specialists to maintain "super specialty" services
- 24 hour presence of dedicated cover by consultant (VMO) obstetricians
- 24 hour on-site Anaesthetic registrars
- staff/VMO Anaesthetist panel with a demonstrable on-going involvement in obstetric anaesthesia
- 24 hour presence of neonatal registrar or neonatologist
- 24 hour immediate access to operating theatres and theatre staff
- specialty neonatal nurses, including CNC and Nurse Educators in that specialty
- 24 hour staffing of birthing centres by qualified midwives
- specialty midwife staff including CNC & Nurse Educators in that specialty
- Level 3 Neonatal Intensive Care Unit
- Level 6 Adult Intensive Care Unit
- 24 hour availability of specialised services including transfusion, pathology, radiology
- presence of specialty medical units within the precinct with 24 hour availability of consultants.

The recommendations for components of an appropriate standard of care for delivery units for Level 4 and 5 units in the Sydney Metropolitan Area are:

- Adequate levels of trained/experienced midwives in birthing areas 24 hours per day. It is recommended that, as a minimum standard, two trained midwives should be on-site at all times. Adequate levels of training include:
 - full midwife qualifications
 - competence in adult resuscitation and CPR

- competence in neonatal resuscitation
 - skill maintenance in common obstetric emergencies
- Competencies should be reviewed/maintained on a minimum annual basis and an appropriate review process to ensure maintenance of these standards must be demonstrable.
- Presence 24 hours per day in the Hospital precinct of trained obstetric medical staff of a competence able to review patients and perform urgent obstetric procedures (including Caesarean Section) in a critical situation.
 - Availability of appropriate anaesthetic staff and theatre staff on-site able to provide decision delivery times of 30 minutes for Obstetric emergencies (ie the hospital must have 24 hour operating theatres).
 - Availability on site, 24 hours per day of skilled staff able to undertake neonatal resuscitation.
 - in the first instance, midwives accredited and able to demonstrate annual updating of neonatal resuscitation skills.
 - advanced resuscitation including neonatal intubation.
 - Availability on site, 24 hours per day of an anaesthetist of appropriate skills, and of a competence to intubate an obstetric patient in a critical situation. Appropriate skills would require the demonstration of current, regular and ongoing involvement in Obstetric anaesthesia. Anaesthetic trainees would be expected to have had at least 12 months of accredited anaesthetic training.
 - An appropriate on-call roster for consultant (VMO) specialists should represent a commitment to one precinct only.
 - Established and reviewed procedures and guidelines for transfer of sick neonate via NETS
 - External, formally structured Audit process - at least annually.

MATERNITY

Metropolitan Suburban Units should be specifically networked with major centres. Clear lines of responsibility, supervision, monitoring of, and maintenance of skill and competency need to be set out by the major centre. Clear role delineation and appropriate referral standards need to be established and enunciated for the suburban units.

Smaller, Suburban Metropolitan Units are seen by the community as important local facilities: close to home and family; midwife driven and low in intervention; more personable and acceptable places to give birth than major teaching hospitals. Such units, many with less than 1500 deliveries per year, are popular, and, for the overwhelming majority, safe.

RECOMMENDATIONS

Other issues identified by the working party included the falling birth rates across Metropolitan New South Wales, a range of issues identified by clinicians including job satisfaction rewards (both professional and financial), and the personal lifestyle disruptions associated with maternity practice. Some of these issues have clearly impacted on the falling recruitment of obstetricians and midwives and the report also raises questions about the ability to maintain quality services across the board, given these recruitment difficulties.

1. That the recommendations of "The NSW Framework for Maternity Services" be implemented as a priority.
2. That the distribution of, and allocation of resources to Level 6 Maternity units be reviewed and adjusted according to the changing demographic of maternity services in the Sydney Metropolitan Area.
3. That the issue of recommended standards of maternity services in Metropolitan Suburban hospitals be reviewed by another body, ie: Maternity Services Review Committee.
4. That the recommended standards of maternity services and resources, as outlined above, be implemented.
5. That Metropolitan Suburban Hospitals and Community based or outreach style maternity services be networked on a formal basis with Area Health Service Maternity operations.

RECOMMENDATIONS

Clear lines of responsibility, authority and role delineation be established across the maternity services overall. The networks should have the aim of enhancing a collaborative, integrated model of maternity care which offers continuity of care and clear protocols for risk assessment, appropriate patient referral or transfers, equitable resourcing of Suburban Metropolitan maternity services and community services and a skills maintenance program.

GYNAECOLOGICAL ONCOLOGY

BACKGROUND

Gynaecological Oncology is the discipline that deals with the management of malignant disease of the female reproductive organs. Approximately 1200 patients with gynaecological malignancy are diagnosed or registered in New South Wales annually. The three largest providers of gynaecological oncology services in New South Wales are Westmead Hospital, Royal Prince Alfred Hospital and the Royal Hospital for Women which, combined, accounted for 34% of all patients managed in New South Wales in 1997/8. Services are also provided at a number of other hospitals, both in the metropolitan area and in rural regions.

Gynaecological Oncology has been recognised as a subspeciality of Obstetrics and Gynaecology in Australia since 1988. The training program comprises three clinical years with at least two years of active participation in a gynaecological oncology unit. A Certificate of Gynaecological Oncology (CGO) is awarded on completion of the program.

A selected specialty services position paper on Gynaecological Oncology was completed in March 2000 and, in essence, proposed the establishment of three Gynaecological Oncology networks for New South Wales based around the three major centres of Royal Prince Alfred Hospital, Royal Hospital for Women and Westmead Hospital.

DISCUSSION

Several meetings were held with the New South Wales Gynaecologists who hold the Certificate of Gynaecological Oncology, together with nursing and allied health representatives from various units. The Selected Specialty Services Planning Paper was used as a basis for discussion with considerable debate as to whether there should be significant rationalisation of Gynaecological Oncology Units or whether service delivery should be widespread as is currently the case. There was also concern that the varying models of care currently in existence had not been subject to comparative evaluation and therefore it was not possible to judge whether one model produced better outcomes for women than another.

In the final analysis a networking approach was supported with the proviso that there be delineation of place of care for specific rarer tumours, and that data collection and analysis should be significantly improved.

RECOMMENDATIONS

1. That there be four networked **Gynaecological Oncology Services for NSW**, centred around:
 - **John Hunter** and Gosford Hospitals (Central Coast and Hunter)
 - **Royal Hospital for Women** and St George Hospital (South East Sydney and Illawarra)
 - **Westmead**, Royal North Shore, Nepean Hospitals (Northern, Western, Wentworth)
 - **King George V** and Liverpool Hospitals (Central and South Western)

Each service would establish a coordinating committee which would be chaired by a clinician. The chair would rotate every 12 months. Each service would strive to centralise specialised gynaecological oncology surgery at the first named hospital within each Service.

2. That the gynaecological oncologists undertake a review of the delineation of place of care for specific rarer tumours, e.g. vulva, vagina, and of the more complex procedures, e.g. evisceration associated with ovarian cancer. This review should also detail those cancers which would not routinely be managed by general gynaecologists. The results of this review should be in place by January 2002.
3. That there be formal discussion with the Rural Health Implementation Group to move towards specific linkages with gynaecological oncology centres and rural gynaecology units.
4. That there be urgent implementation of a statewide data system for gynaecological cancer cases, their management and outcomes.
5. That there be a review of the models of care provided by each Service in 2005. By this

GYNAECOLOGICAL ONCOLOGY

RECOMMENDATIONS

time relevant outcome data should be available. In addition, trends in population growth and disease incidence will become clearer.

6. That enhancements for the statewide Gynaecological Oncology Services be required with priorities for:
 - funding of the data collection
 - expansion of the Hunter/Central Coast service with an additional gynaecological oncologist, with appropriate infrastructure, e.g. psychologist, specialist nursing staff
 - funding of operating and/or outpatient sessions in a number of the current hospitals that provide gynaecological oncology services to ensure that cross appointments within each Gynaecological Oncological Service are achieved.

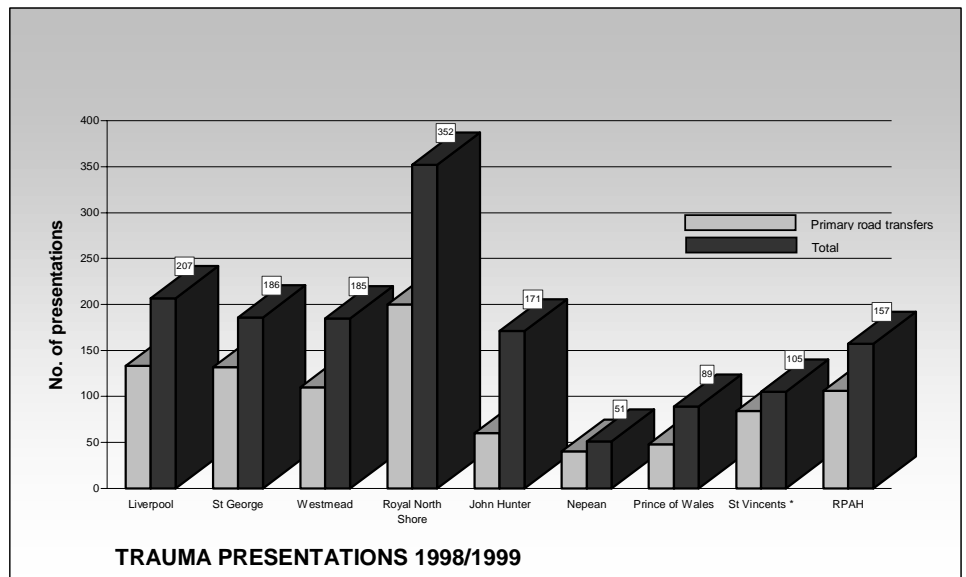
TRAUMA SERVICES

4

BACKGROUND

Trauma services are provided to patients who have been physically injured. "Major" trauma patients are those who have sustained multiple or single system injuries which are potentially life threatening and/or require complex management. There are currently 12 designated major trauma centres in NSW. The 9 adult centres are Royal North Shore, Royal Prince Alfred, St George, Prince of Wales, St Vincent's, Westmead, Liverpool, Nepean and John Hunter Hospitals. There are also 3 specialist paediatric major trauma services, being The Children's Hospital at Westmead, Sydney Children's Hospital and John Hunter Children's Hospital.

The most currently available workload data for major trauma centres is presented in the Table below. Trauma patients are categorised in terms of an Injury Severity Score (ISS), with a score above fifteen being recognised as an indicator of serious injury. However, it should be noted that the largest proportion of trauma presentations to hospitals in New South Wales are of patients with an ISS score of **less** than fifteen.



The figures presented in the graph are for primary road transfers. The total figures also include aeromedical transfers and secondary road transfers.

There have been a number of reports and studies into trauma services in NSW, a trauma system first being proposed in 1988, with a three-tier trauma system being implemented in Sydney and Newcastle in 1991. Following the release of the National Road Trauma Advisory Committee (NRTAC) Report of the Working Party on Trauma Systems in 1993 the State Trauma Plan was revised in

TRAUMA SERVICES

1994. As a result of this Review the System was reduced to two tiers in the Sydney metropolitan area. At the same time the New South Wales Trauma Systems Advisory Committee (TSAC) was established as a working party of the New South Wales Critical Care Advisory Committee. More recently the NSW State Trauma System Planning Framework was developed by TSAC in collaboration with NSW Department of Health. This report described a number of options and was circulated to a range of stakeholders in July 2000. In September 2000 Peter Brennan and Bernie McKay of MA International Pty Ltd Consultants were also asked by NSW Department of Health to provide advice to GMSIG.

The consultants identified a number of issues in relation to trauma services. The poor quality of data and information was highlighted as a particular problem, the consultants noting that hospital databases were incompatible, there was no statewide minimum data set and that it was therefore impossible to compare the performance of individual units and establish a link between volume and outcome. The consultants went on to report that most of the available literature came from North America and that there is no reliable Australian evidence in relation to issues pertaining to critical mass and outcomes.

The consultants advised that in their opinion, data and quality were major issues and that there needed to be an accountability framework established for the whole trauma system.

DISCUSSION

As indicated above the configuration of Trauma Services for NSW has been an area of significant debate over the last 10-15 years. In providing its advice to GMSIG, TSAC cited a number of reasons for its recommendations. These included that "overseas experience and evidence support the notion of concentrating major trauma cases into a limited number of well-equipped sites which have the resources and expertise to manage these cases", that "outcomes for major trauma cases have been demonstrated to be improved by the reduction in time from injury to the commencement of definitive care", and "both the 1988 Emergency Services in NSW Policy for Trauma Services and the 1993 National Road Trauma Advisory Council (NRTAC) reported a Working Party on Trauma Systems following a review of overseas trauma systems, literature and expert opinion adopted the recommendation of one major trauma centre for a population base of one million people²⁷". It should be noted that Victoria has 2 trauma centres while NSW currently has 9.

Having considered the above, and other factors, TSAC advised the GMSIG that in their opinion there should be 5 adult major trauma hubs and assorted networks in Sydney, namely Liverpool, Westmead, Royal North Shore, St George and Royal Prince Alfred Hospitals. John Hunter should also remain as a trauma centre and paediatric trauma services should remain as currently configured.

The independent consultants also advised that there should be five Sydney metropolitan networks, however they recommended that there should be further consideration over the next two years in relation to whether Royal Prince Alfred or St Vincent's Hospitals should continue as the major trauma centre providing a service to the centre of Sydney. The consultants made the recommendation on the basis that both St Vincent's and Royal Prince Alfred Hospitals have major capital works programs underway and existing construction timetable precluded the implementation of the recommendation for at least two years.

There was significant debate about this issue at the GMSIG meeting of 2 February 2001 with the majority supporting Royal Prince Alfred as the trauma centre of Sydney. It was noted that existing services would remain at St Vincent's and Royal Prince Alfred Hospitals until construction of all new capital works are completed, which is estimated to be approximately two years. The concept of a virtual NSW Trauma Institute was suggested because of inconsistency in data collection and a lack of statewide direction in relation to trauma teaching, research, data analysis and best practice protocols.

RECOMMENDATIONS

GMSIG discussed trauma systems formally on 1 December 2000 and again in detail on 2 February 2001 and made the following recommendations:

1. That there be six adult major trauma networks covering New South Wales, each with their own hub and director. That there be five major adult trauma hubs in Metropolitan Sydney and one in Newcastle.
2. That St. George, Liverpool, Westmead, John Hunter and Royal North Shore Hospitals be immediately identified as major adult trauma hubs in NSW.

TRAUMA SERVICES

RECOMMENDATIONS

3. That an additional hub be identified to serve the centre of Sydney and that this be Royal Prince Alfred Hospital, noting that existing services at St Vincent's and Royal Prince Alfred Hospitals remain until construction of all new capital works are completed, which is estimated to be approximately two years.
4. That Prince of Wales Hospital be recognised as a centre of excellence for acute spinal injury.
5. That Nepean Hospital remain a regional trauma centre and form part of the broader Western Sydney Trauma Service.
6. That the Paediatric Major Trauma Service configuration for New South Wales be the Children's Hospital at Westmead, Sydney Children's Hospital and John Hunter Children's Hospital.
7. That a virtual New South Wales Trauma Institute be established with broad responsibilities for the oversight of trauma teaching, research, outcomes-based data collection and analysis and establishment of 'best practice' protocols. That a working party be established, consisting of members of TSAC, and other relevant committees formed by NSW Department of Health, academic trauma surgeons, Retrieval and Transport representatives, intensivists, emergency physicians and specialist nurses, to develop a proposal over a 3-month timeframe for a virtual NSW Trauma Institute.

EMERGENCY DEPARTMENT SERVICES

4

An Emergency Department Clinical Implementation Group was established under the NSW Government Action Plan for Health. The Co-Chairs appointed to convene this Working Party were Dr Sue Ieraci, Area Advisor for Emergency Medicine, SWSAHS and Ms Jane O'Connell, Clinical Nurse Consultant, Emergency Department, Concord Hospital. The principles of the Emergency Department Service Plan put forward by the Working Party was subsequently endorsed by the GMSIG. The Executive Summary and list of recommendations is reprinted below.

Emergency Departments (EDs) are key entry points into the acute hospital system, working at the interface between the hospital and the community. EDs are highly visible, highly utilised and highly valued. Their location generally reflects hospital planning, often without specific reference to factors such as access to clinical support services and system-wide workforce availability. All EDs must be able to provide a minimum standard of care to patients presenting there, despite sub-specialisation of inpatient units in the hospital. This plan aims to better organise the way in which emergency department (ED) services are developed, managed, coordinated and supported.

The plan recommends the adoption of a network model within Area Health Services, formalising and strengthening links within the network and ensuring that there are common standards, guidelines and procedures. In addition, it recommends that the future planning of emergency department services by Area Health Services aim to meet community need and improve service delivery.

Improved networking of emergency department services in metropolitan and rural areas and across Area Health Service boundaries will ensure that a person presenting to any department across a network will benefit from the collective expertise of the network and access appropriate, ongoing care if required.

It is acknowledged that significant work has been undertaken in the past. Documents such as Emergency Department Strategic Directions – Priorities and Planning Guidelines for the NSW Health System 1997-2000 (1997)²⁸, 'Better Practice Guidelines for Bed Management' (1998)²⁹, and 'Emergency Department Access Block – Working Party Report' (1999)³⁰ should be used in conjunction with the Emergency Department Service Plan.

Other important aspects of the Government Action Plan for Health relating to emergency departments are the development of new funding models, including the introduction of episode funding and new funding arrangements for emergency departments and intensive care services.

This document has been prepared in an environment of change. Concurrently, there are processes

EMERGENCY DEPARTMENT SERVICES

under way to better manage the care of those people with chronic and complex health conditions, the delivery of primary care services, and to improve the collaboration between emergency departments and general practitioners. These factors will all impact on the evolution of ED services.

RECOMMENDATIONS

1 PLANNING PARAMETERS

That metropolitan services be planned using the following parameters and that the parameters be used collectively, not in isolation:

- throughput: 20,000 ED cases per yr (minimum)
- travelling distance/time: 20kms/30mins by private car (maximum)
- population base: 1:200,000 (min)
- equity factors (including transport, social factors, geography)

2 NETWORK MODEL

- That all existing Area Health Service emergency department (ED) services be configured in a hub-and-spoke network model that works to provide a minimum standard of care in every ED within the network.
 - That there be one designated hub in each Area Health Service.
 - That an Area Director of Emergency Department Services be appointed to facilitate the co-ordination and management of ED services in the Area Health Service.
 - That the role of the Area hub site and the Area Director be that of oversight, coordination and communication rather than direct line-management – the new structure should not cut across local departmental ED management, but work with it.
 - That there be regular communication between the various NSW Area Directors of Emergency Department Services. It is recommended that, as a minimum, a statewide forum be held 3 monthly.
 - That whilst the hub site hospital may have a concentration of some critical care and super-specialty services, it is not intended that all severely ill patients be transferred

RECOMMENDATIONS

to the centre. While the spoke site hospitals may sub-specialise in providing certain inpatient services for the network, each ED should retain an appropriate profile and resources to appropriately manage all patients presenting there.

- That Area wide and cross-Area appointments and rotations of staff be considered and encouraged.
- That rural areas be linked with a metropolitan site based on the default critical care networks (though they may maintain existing links outside this framework if they are efficient and effective).
- That a communication strategy be developed to inform the community of the ED network function and why patient transfer may occur following stabilisation.
- That there be a mechanism to allow a statewide overview of the AHS emergency network performance.

3 ED RESOURCES

- That Emergency Departments be resourced with a minimum standard of staffing, operational structure and back-up services in conformity with the ACEM role delineation document
- That all Areas examine their current ED nursing roles and responsibilities and seek appropriate opportunities to implement advanced nursing practice and the nurse practitioner role. All level 5 and 6 EDs should have direct access to both a Clinical Nurse Consultant (CNC) and Clinical Nurse Educator (CNE), and smaller departments should be networked with a centre employing CNCs and CNEs.
- That all level 4 and above EDs have direct access to a specialist emergency physician, and smaller departments be networked with a centre employing emergency physicians.
- That all level 4 and above emergency departments should have provision for point of care diagnostics and radiology.

EMERGENCY DEPARTMENT SERVICES

RECOMMENDATIONS

4 COMMUNICATION

- That a web-based communication system be implemented in all networks including such items as notification of restricted access periods (LTOs) in the network, notification of patient transfers, clinical support, clinical review and educational support.
- That a webpage be developed outlining local community and other services available that can be accessed by both emergency department staff and General Practitioners.
- That a communication system be established between EDs and the ambulance service to allow ready communication of information about bed occupancy, incoming patients and clinical issues.

5 EDUCATION

- That all clinicians working in emergency departments maintain their emergency medicine knowledge and skills through participation in the network educational activities as well as specialised courses.
- That an integrated education model for medical and nursing staff, and general practitioners be developed to deliver basic emergency and acute care education.

6 DATA COLLECTION

- That data collection be undertaken in all emergency departments. Smaller departments should utilise the minimum data set (Emergency Department Data Dictionary V3.0) and an information system applicable to the setting.
- That a complexity tool be developed to address workload and inform both nursing and medical staffing levels for quality patient care. The tool also needs to be suitable for use in a funding model.

RECOMMENDATIONS

7 SERVICE CONFIGURATION

- That all components of the Area emergency department network be linked under the overall coordination of the Area Director of Emergency Department Services.
- That “walk in” clinics for lower acuity patients be planned where this type of service is shown to be appropriate and cost-effective. Such clinics should be under the overall coordination of the Area Director of Emergency Department Services, and should have close linkage with the Area ED network.
- That where acute services with different roles exist, there be public education campaigns to inform consumers of the role, capacity and access of each service.

8 OPERATIONAL PRINCIPLES

- That EDs, hospitals and Areas examine their workpractices to ensure that they are appropriate and efficient in each service. Relevant principles for consideration include review of unnecessary tasks, re-thinking clinical roles, efficient employment of ancillary staff and effective use of communication technology.
 - That networks facilitate rotation of both clinical and ancillary staff between sites.
- That strategies to improve bed access be addressed hospital-wide and implemented as a matter of urgency.

INTENSIVE CARE SERVICES

An Intensive Care Services Implementation Group was established under the NSW Government Action Plan for Health. The Co-Chairs appointed to convene this Working Party were Dr Theresa Jacques, Director, Intensive Care, St George Hospital and Ms Kate Needham, Nurse Manager, Intensive Care Unit, Westmead Hospital, and Clinical Stream Director, Western Sydney Area Health Service. The principles of the Intensive Care Service Plan put forward by the Working Party was subsequently endorsed by the GMSIG.

Their Executive Summary and recommendations are reprinted below.

Accessibility to intensive care is critical to the health of the community and the health system at large. The intensive care unit is a pivotal component of the hospital and, in a broader sense, the critical care system.

This plan recommends the adoption of a network model, formalising and strengthening networks across and between Area Health Services. In addition, it recommends that the delivery of intensive care services, both location and mode of delivery, be examined by Area Health Services and future planning reflect appropriate capacity and function of ICU services to best meet community need and improve service delivery.

It is acknowledged that significant work has been undertaken in the past. It is suggested that documents such as "Intensive Care Strategic Direction - A Framework for the NSW Health System" (1999) and "Better Practice Guidelines for Bed Management" (1998), be used in conjunction with the Intensive Care Service Plan - Adult Services.

RECOMMENDATIONS

The Intensive Care Clinical Implementation Group recommends:

1. That available data, based on projected population numbers, age profiles and current practice, indicate that the peak intensive care bed capacity required within the state will be:
 - in 2001 - 549 beds
 - in 2006 - 582 beds
 - in 2011 - 619 beds
2. That an integrated network of intensive care units based on the hub and spoke model be adopted on an Area/Rural Critical Care network basis.
3. That rural areas be linked with a metropolitan site based on the default critical care networks.
4. That each Area Health Service or Rural Critical Care Network have an Area Director of Intensive Care. Some Area Health Services may need to consider funding this position up to 0.5 FTE.
5. That each Area Health Service (AHS) be ultimately responsible for meeting the intensive care needs, superspecialty services withstanding, of the Area and agreed network services. This means that each AHS make an appropriate contribution to the state's intensive care bedstock.

The number of non superspecialty "out of Area" transfers and "no intensive care bed" transfers should be kept to a minimum. Such transfers should be considered a critical incident and reviewed by the Area Health Service and clinicians on a regular basis.

"No IC Bed" transfers out of Area should only occur after direct 'consultant to consultant' discussion.

Intra Area networking of hospital services be encouraged where appropriate.

INTENSIVE CARE SERVICES

RECOMMENDATIONS

6. That effective intensive care services be developed by concentrating units in major hospitals within each Area.

The optimal number of beds for a single unit depends on its role. A workable unit size is within the range of 12 to 15 beds. This allows for appropriate intensivist/nursing infrastructures at NSW Department of Health level 5/6 or FICANZCA Min Standards level 3.

Other hospitals will be encouraged to develop NSW level 3/4 or FICANZCA Min Standards level 1 Intensive Care or HDU units consistent with the hospital's role.

7. That the utilisation of high dependency units (HDUs) become widespread. They should form part of the continuum of critical care rather than existing as separate HDUs which have evolved in a piecemeal fashion in some hospitals. HDUs should be networked and aligned with intensive care services. This encourages maximum flexibility and utilisation of such services without the extra step of another admission/discharge process to a separate HDU. This will alleviate exit block in busy times. This will also avoid the issue of variable occupancy in a number of smaller HDUs.

It may be more useful not to make the distinction between IC and HD beds and consider all beds as 'multipurpose'.

High dependency units should have appropriate information systems, clinical indicators and formal audit processes in place.

8. That Area Health Services be required to have a minimal increase in ICU beds by 2011, maintain the current Area bed stock, to ensure that service delivery can be maintained while other Areas increase the level of service provision. ie. there should be no decrease in ICU capacity.

Where increases in bed numbers are recommended, these increases should occur as a staged progression over the projection period.

9. That an Intensive Care Coordination and Monitoring Function is required at a statewide level.
10. That an improved data collection and verification process be implemented.