

NSW GOVERNMENT ACTION PLAN

FOR HEALTH

Emergency Department Services Plan

Plan Plan Plan Plan Plan

*to provide a
high standard of
emergency care to
the community,*

NSW HEALTH DEPARTMENT

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Emergency Department Services Plan.

NSW Government Action Plan, Sydney.

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Contents

Letter to the Minister for Health.....	ii	Workforce issues.....	18
Emergency Department Clinical Implementation Group	iii	Medical.....	18
Executive summary	iv	Nursing.....	18
Recommendations	v	Implementation Plan.....	20
Introduction.....	1	Metropolitan services.....	21
Context	2	Metropolitan planning.....	21
Current Emergency Department service delivery in NSW	3	Metropolitan current sites and activity.....	21
Definition of an Emergency Department	4	Rural services	23
Key principles in Emergency Department planning	5	Rural planning.....	23
Emergency Department model and networking ...	6	Rural networking.....	23
Model.....	6	Rural current sites and activity.....	24
Network function	6	Appendix 1-2	27-33
Operational policies.....	11	1. Guide to the role delineation of health services (draft) – Emergency Department extract	27
Alternative service delivery options.....	14	2. Australasian College For Emergency Medicine Policy Document - role delineation	30
Considerations for planning services.....	16	Footnotes.....	34

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The Hon Craig Knowles, MP
Minister for Health
Level 33
Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Dear Minister,

On behalf of the Emergency Department Clinical Implementation Group, we commend to you our final *Emergency Department Services Plan*.

We have welcomed the opportunity to plan and enhance Emergency Department Services in NSW through your vision of clinician, consumer and managerial involvement.

The Emergency Department Clinical Implementation Group approached the set tasks with enthusiastic and at times protracted debate but always believed that the opportunity and involvement would be beneficial for the patients and providers of care in a very busy system.

The Emergency Department Services Plan recommends formalising and strengthening links across and between Area Health Services to ensure that there are common standards, guidelines and procedures to meet the community needs and improve service delivery. Improving networking of Emergency Department Services in Metropolitan and Rural Areas will ensure that a person presenting to any Emergency Department across a network will benefit from the collective expertise of the network.

As Co-Chairs, we would like to thank all members of the Emergency Department Clinical Implementation Group for their time and commitment. We would also like to thank Lynda Smart and Dr Steevie Chan from the NSW Health Department for their support and relentless effort.



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Co-Chair



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Executive summary

Emergency Departments are key entry points into the acute hospital system, working at the interface between the hospital and the community. Emergency Departments 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 Emergency Departments 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 rationalise the way in which Emergency Department 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 aims 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.

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)¹, ‘Better Practice Guidelines for Bed Management’ (1998)² and ‘Emergency Department Access Block – Working Party Report’ (1999)³ 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, new funding arrangements for health priority areas, Emergency Departments and intensive care services and modifications to the Resource Distribution Formula.

This document has been prepared in an environment of change. Concurrently, there are processes 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 positively impact on the evolution of Emergency Department services and the care of people in NSW.

Recommendations

Planning parameters

Metropolitan services should be planned using the following parameters. These parameters should be considered together – not individually in isolation:

- **throughput** – 20,000 Emergency Department 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).

Network model

- Area Health Service Emergency Department services should be configured in a hub-and-spoke network model that works to provide a minimum standard of care in every Emergency Department within the network.
- There should be one designated hub in each Area Health Service.
- An Area Director of Emergency Department Services should be appointed to facilitate the co-ordination and management of Emergency Department services in the Area Health Service.
- The role of the Area hub site and the Area Director should be those of oversight, coordination and communication rather than direct line-management – the new structure should not cut across local departmental Emergency Department management, but work with it.
- There should 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.
- The hub site hospital may have a concentration of some critical care and super-specialty services, but it is not intended that all severely ill patients be transferred to the centre. While the spoke site hospitals may sub-specialise in providing certain inpatient services for the network, each Emergency Department should retain an appropriate profile and resources to appropriately manage all patients presenting there.

- Area wide and cross-Area appointments and rotations of staff should be considered and encouraged.
- Rural areas should 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).
- A communication strategy should be developed to inform the community of the Emergency Department network function and why patient transfer may occur following stabilisation.
- There should be a mechanism to allow a statewide overview of the Area Health Service emergency network performance.

Emergency Department resources

- Emergency Departments should be resourced with a minimum standard of staffing, operational structure and back-up services in conformity with the Australasian College for Emergency Medicine role delineation document (in Appendix).
- Emergency Departments, hospitals and Areas should continue to pursue ongoing recruitment of senior clinical staff. Specialist emergency physician staffing should continue to grow according to the principles outlined in the 'Implementing the Emergency Medicine Australian Medical Workforce Advisory Committee Recommendations - Report of the NSW Steering Committee on the Feasibility, Assessment and Implementation of the Australian Medical Workforce Advisory Committee Emergency Medicine Workforce Recommendations'⁴.
- All Areas should examine their current Emergency Department nursing roles and responsibilities and seek appropriate opportunities to implement advanced nursing practice and the nurse practitioner role. All level 5 and 6 Emergency Departments should have direct access to both a Clinical Nurse Consultant and Clinical Nurse Educator, and smaller departments should be networked with a centre employing Clinical Nurse Consultants and Clinical Nurse Educators.

- All level 4 and above Emergency Departments should have direct access to a specialist emergency physician, and smaller departments should be networked with a centre employing emergency physicians.
- All level 4 and above Emergency Departments should have provision for point of care diagnostics and radiology.

Communication

- A web based communication system should 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.
- A webpage should be developed outlining local community and other services available that can be accessed by both Emergency Department staff and General Practitioners.
- The NSW Health Department facilitate the further development of strategies to improve the continuity of care between Emergency Departments and the community.
- A communication system should be established between Emergency Departments and the ambulance service to allow ready communication of information about bed occupancy, incoming patients and clinical issues.

Education

- All clinicians working in Emergency Departments should maintain their emergency medicine knowledge and skills through participation in the network educational activities as well as specialised courses.
- The concept of creating a Clinical Nurse Educator role in tandem with the Clinical Nurse Consultant should be promoted, to enhance nursing education.
- An integrated education model for medical and nursing staff, and general practitioners should be developed to deliver basic emergency and acute care education.

Information systems

- Clinically based, compatible information systems should be available in all Emergency Departments.

The focus of the system should be as a clinical tool with data production as a by-product.

- Smaller departments should utilise the minimum data set (Emergency Department Data Dictionary V3.0) and an information system applicable to the setting.
- A complexity tool should 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.

Service configuration

- All components of the Area Emergency Department network should be linked under the overall coordination of the Area Director of Emergency Department Services.
- Alternative service delivery options for lower acuity ambulatory patients may be planned where this type of service is shown to be appropriate and cost-effective. Such services should be under the overall coordination of the Area Director of Emergency Department Services, and should have close linkage with the Area Emergency Department network.
- This model would only be appropriate where there is a shortage of local after-hours general practice services and where full Emergency Department services are available nearby.
- Where acute services with different roles exist, there should be public education campaigns to inform consumers of the role, capacity and access of each service.

Operational principles

- Emergency Departments, hospitals and Areas should 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.
- Networks should facilitate rotation of both clinical and ancillary staff between sites.
- Strategies to improve bed access should be addressed hospital-wide and implemented as a matter of urgency.

Introduction

The NSW Government's Action Plan for Health, arising from the NSW Health Council and Ministerial Advisory Committee on Health Services in Small Towns, identified Emergency Department services and intensive care, acute care and care for people with complex and ongoing health needs as priority areas for the NSW health system. These were identified as areas where system-wide changes are necessary so that health services are better able to manage the increasing demand for health care. They are also areas where significant contribution can be made to improving the quality, efficiency and effectiveness of care delivered to consumers of the NSW health system.

The NSW Government, through its Action Plan for Health, aimed to achieve three broad outcomes in respect to Emergency Department services:

1. Improved management and funding systems
2. Improved co-ordination with other critical care services (emergency services, intensive care services)
3. Improved planning of services on a statewide basis.

To facilitate the Government's Action Plan it was intended that:

- the Department develop a plan for the networking and distribution of Emergency Department services across NSW
- a new funding model for Emergency Departments be implemented from 1 July 2001
- strategies to improve the interface between the Emergency Department and general practitioner services be developed
- mental health care remain a priority area within Emergency Department services.

It is intended that long-term improvement will be accomplished by the implementation of the Emergency Department Service Plan. The aim of the Plan is to provide a statewide service model outlining the future network for the provision, location, and capacity of Emergency Departments across NSW. The service model aims to optimise the use of appropriate and effective models of care; provide equity of access; and promote efficient and appropriate utilisation of resources. Integral to the service model is the need to provide detailed specification of the level of services required at each level of the network and at each Emergency Department.

The Service Plan addresses planning parameters for Emergency Department services across Area Health Services and the way that these services should interact. It does not specify where departments should be located in an Area Health Service nor does it address rural issues such as transport and availability of alternative services. Data analysis has been limited by availability. Data is readily available from Emergency Department Information System sites only, therefore, detailed examination of smaller non-Emergency Department Information System sites has been excluded. An assessment of these sites, using non-admitted patient occasions of service, has been included.

Context

Developments in other services

The Emergency Department Service Plan has been constructed in an environment of change. Work is occurring in a wide array of areas, some of which will have a major impact on Emergency Departments.

Developments in chronic health care and its link with the community and community services have the potential to impact on current Emergency Department function. Improved services and communication may see a decrease in patients with chronic disease needing to access care through the Emergency Department.

Equally, change in the management of mental health clients in Emergency Departments has the potential to improve consumer access to timely management by appropriately trained health carers. In both of these areas the potential to utilise nurses working at the level of nurse practitioner to co-ordinate and manage long term conditions in the community or in concert with emergency services will have a positive impact on care delivery. As part of the Government Action Plan for Health an additional twenty mental health liaison nurse positions have been created across Area Health Services to improve access to and assist with the management of mental health clients presenting to Emergency Departments.

Bed access block

Inpatient bed access block, where a patient who has completed Emergency Department care waits for an inpatient bed, continues to be the most significant problem for urban (and some rural) Emergency Departments. This also creates flow-on problems for other services - particularly the ambulance service. Acknowledgment by hospital/area managers that access block is a whole of system dilemma and needs to be addressed as a system response is crucial to its resolution. Emergency Departments cannot solve this problem in isolation. It is acknowledged that previous work has been done in relation to access block and bed management by NSW Health, Area Health Services and clinicians. However, further work

is required to resolve the systemic problems. Document such as 'Better Practice Guidelines for Bed Management' (1998) and 'Emergency Department Access Block - Working Party Report' (1999) should be used as a reference when developing bed management strategies to manage access block.

Emergency Department- General Practice interface

Improving the interface between Emergency Departments and general practice is a priority of the Government Action Plan. The historical barrier to integration between the hospital service providers and general practitioners in the community has been an issue affecting continuity of care. Improving networks between hospitals and general practitioners could address this issue, alleviating inappropriate referrals and the perception of inappropriate referrals to Emergency Departments, with the result of providing best care options for the community. Initiatives which could be implemented to improve collaboration between general practitioners and Emergency Departments include the establishment of formal and informal links between General Practitioners and Emergency Departments, formalised information system networks to link local general practitioners with the hospital Emergency Department, and, in some networks, the development of ambulatory-care clinics.

For ease of use the document has been divided into three sections:

1. General
2. Metropolitan
3. Rural

Current Emergency Department service delivery in NSW

The distribution of Emergency Departments has, in essence, been driven by historical arrangements of hospital locations rather than a system orientated strategic planning process which takes into consideration factors such as the health needs of the local population, demographic patterns, throughput, acuity of presentations, distance from and availability of other services, health outcomes, access to clinical support services and system-wide workforce availability. Further, planning for Emergency Department services has not taken into account closely linked services, such as the Ambulance Service.

There are approximately 140 Emergency Departments across NSW delivering a wide variety of services, ranging from community based medicine and first aid to definitive tertiary care. More detailed information on the services available can be found in the Metropolitan Services and Rural Services sections.

In 1994/95 there were over 1,565,000 attendances of people seeking emergency care. In 1999/00, this number increased to 1,732,100, a 10.7% increase since 1994/95. In 1999/2000, when data for all types of services is amalgamated, approximately 61% of these visits were classified in the less urgent triage categories. However, the complexity of Emergency Department work is increasing, and many patients in the lower urgency categories require detailed evaluation and perhaps hospital admission. The lower acuity but high complexity patient occupies a large part of the core business of the majority of urban Emergency Departments.

Responsibility for the planning and management of Emergency Department services rests with the Area Health Services. As a result responses to such factors as changing demographics, Emergency Department utilisation, developments in clinical care and the entrance of private sector providers are determined locally rather than with a system wide focus. The Emergency Department Service Plan aims to formalise links across and between Areas and Emergency Departments to ensure that the statewide network of services is enhanced.

Not all hospitals provide Emergency Department services and not all Emergency Departments provide the same level of services. For these reasons the supply of Emergency Department services is supported by a system of interhospital transfers, ambulance services, medical retrieval services and trauma networks to ensure that patients access the most appropriate services. Any changes to care provision by Emergency Departments must take into account effects on these other services.

The majority of Emergency Departments are found in rural areas. However, these departments vary greatly both in size and services provided. As well, the issues facing rural Emergency Departments differ substantially from those of metropolitan departments and it is important that the models and solutions applied to these departments are relevant to rural circumstances.

The urgency distribution of Emergency Department patients can be represented by the categories of the Australasian Triage Scale⁵ (ATS - categories 1 to 5). Urgency for treatment has been shown to be a good predictor of cost, and efforts are currently in progress to further improve inter-rater reproducibility nationally. However, it is important to distinguish between urgency (or acuity), severity (or seriousness) and complexity of care. It is the complexity of the assessment done and care and treatment given in an Emergency Department that ultimately determines the cost.

Definition of an Emergency Department

The following definition has been used to define Emergency Departments within the NSW public health system for the purposes of this planning exercise:

'The Emergency Department is the dedicated area in a hospital that is organised and administered to provide a high standard of emergency care to those in the community who perceive the need for or are in need of acute or urgent care including hospital admission'⁶.

The term 'Emergency Department' is generally used to describe facilities ranging from high level departments with emergency medicine specialists and trainees employed round the clock through to rooms in small rural and remote hospitals staffed by on-call local general practitioners and generalist nursing staff. Therefore, the 'Guide to the Role Delineation of Health Services 2000' and Australasian College for Emergency Medicine Policy Document – Role Delineation⁷ should be considered when reviewing and planning services. These documents are included in the Appendix.

The use of the term Emergency Department to describe such a broad range of settings can lead to misunderstandings. Data collected from remote rural Emergency Departments does not describe the urban setting, and vice versa. While this Plan has not recommended a change of nomenclature to describe the differing facilities, it is important that the various roles and capacities can be identified and understood by the community, health system managers and the ambulance service. Community education is necessary to inform the public about the function of the Emergency Department network and why secondary patient transfer, for definitive inpatient care, may occur. It is recommended that a communication strategy be developed articulating this.

Changing role of Emergency Departments

As the skills and seniority of Emergency Department staff continue to grow, and bed access block continues to be a problem, the Emergency Department is focusing to a greater extent on providing definitive acute care and returning the patient to the community for follow-up. While this presents a significant saving in bed days to the hospital, it represents a substantial (and generally unmeasured) workload for the Emergency Department. Emergency Departments require adequate resources and staff to fulfil this role, in addition to appropriate support from inpatient and community services.

Therefore, Emergency Departments need to function as a component of the continuum of care rather than in isolation. This is the most important component of the Emergency Department/General Practice interface and will require collaborative development by general practitioners, other community clinical staff and Emergency Department staff.

Point of care pathology and radiology within the Emergency Department for the most common diagnostics may aid decision making and diagnosis and have an impact on throughput time of patients. It is recommended that all level 4 and above Emergency Departments should have provision for point of care diagnostics and radiology. Future planning should take this into consideration.

Recommendations:

- A communication strategy should be developed, informing the community of the Emergency Department network function and why secondary patient transfer may occur.
- The role of the Emergency Department in providing definitive care for more complex patients and in returning them to the community for longer term care with appropriate domiciliary support should be recognised and further developed
- All level 4 and above Emergency Departments should have provision for point of care diagnostics and radiology.

Key principles in Emergency Department planning

The following key principles were identified during the construction of this Plan:

- Emergency Departments should not be viewed in isolation from the rest of the health system
- The planning process should be about critical care services, not simply about Emergency Departments. Inter-relationships exist with other providers such as intensive care, retrieval and ambulance services
- Emergency Departments should continue to provide a wide range of services covering acute medical and psycho-social conditions
- All Emergency Departments should provide a minimum standard of care, according to their role delineation, despite sub-specialisation of their hospital inpatient services
- In general, it is not currently expected that the Ambulance Service will undertake prehospital triage of patients (except for major trauma, in accordance with the State Trauma Plan). Where specialised services are located at a single site within a network, patients will generally be transferred following assessment and stabilisation at the site of first presentation
- Emergency Departments should be 'centrally guided' but 'locally provided' and managed
- Resources should be provided relative to the role and complexity of care delivered by the department.

The following principles should be considered if there is to be a reconfiguration in the delivery of Emergency Department services in an Area Health Service:

- If a hospital's role is altered such that an Emergency Department cannot be maintained at that site, Emergency Department services in the area should be reconfigured to either:
 - redirect Emergency Department patients (and the resources to care for them) to an existing site
 - merge Emergency Departments into a new department that is more appropriate to requirements
 - develop alternative ambulatory clinical services which will remain within the Emergency Department services network.
- Inpatient beds required for emergency admissions should be located at hospitals where patients present.

Emergency Department model and networking

The Emergency Department Clinical Implementation Group recommends the following model on the understanding that acute care services, paediatric networking and specialty services are being reviewed in other fora. The Group recognises that the planning process is being undertaken in an environment of fragmented primary care and that this aspect of care is also being addressed in another forum. It also acknowledges that Emergency Departments are a component of a wider system and it is important to take a 'whole of system' approach recognising the coordination and integration with ambulance, hospital, medical, psychiatric, social welfare and other services.

Model

It is recommended that a 'hub and spoke' model of Emergency Department services is adopted on a hospital/Area basis. This will allow efficiencies to be gained across the whole system rather than isolated sectors. The roles of the hub and spoke sites are detailed below.

The adoption of this model would provide a network of departments delivering services that are inter-related in a planned and predetermined manner.

Elements of the model are professional inter-relationships, referral and support structures.

Area director of Emergency Department Services

It is recommended that each network appoint an Area Director of Emergency Department Services, who should be an experienced clinician. This will improve coordination of emergency services at an Area Health Service level and allow for standardisation of clinical policy, protocols, guidelines and training. Other factors such as drug and product utilisation could also be standardised.

The role of the Area Director would be one of coordination, liaison, planning and support, not direct day-to-day management of each site. Each Emergency Department would retain its local management structure, working in cooperation with the Area Director.

Cross-appointments

Currently some staff within an Area Health Service are appointed to more than one Emergency Department. This practice should be encouraged and future appointments of clinical staff could be considered to be at an Area level to promote rotation of staff or joint allocations.

Network function

In the context of this Plan, the term 'networking' refers to the formalised and clearly defined linkage of health services across a range of sites – not the merging of services. The aim of the network model is to plan and deliver clinical services across the network, without the impediments of a facility-oriented approach.

The network should exist to support all Emergency Departments and maximise the ability to manage patients where they present. While there may be variation in the roles of various hospitals, with a variety of sub-specialised inpatient units, the network Emergency Department management, resources and planning should be organised to ensure a minimum standard of care at all of the network's Emergency Departments.

It is not intended that all seriously ill patients be transferred to the hub site, but rather that the spoke sites be supported in providing appropriate local care. If secondary transfer of patients to specialised services is required, pathways for referrals should be clearly delineated to minimise the role of the receiving hospital Emergency Department to clinical necessity. Mechanisms for the efficient and safe reception of patients at a hub hospital should be developed. Given allowances for inpatient bed management, referral pathways from a peripheral hospital Emergency Department to a tertiary unit should be similar to those utilised by the tertiary hospital Emergency Department.

Features of an Emergency Department network should include:

- Single designated hub, multiple spokes
- Coordinated clinical, administrative and operational processes
- A common basic standard of care for similar patients presenting to any of the network Emergency Departments, in spite of hospital role delineation
- Smooth flow of communication between all network Emergency Departments
- Sharing of expertise and resources to benefit all Emergency Department patients throughout the network
- Sharing of activities such as quality assurance, research and undergraduate and graduate teaching.
- Clarity for General Practitioners in patient referral
- Coordinated consumer participation.

Role of hub site

There should be only one designated hub in an Area Health Service. The hub site may have a concentration of some critical care and super-specialty services, but it is not intended that all sick patients be transferred to the centre. The spoke site Emergency Departments should retain an appropriate profile and resources, although their hospital may sub-specialise in providing certain services for the network.

The hub site should be a large hospital providing a wide range of acute inpatient services. The Emergency Department should be a large centre providing definitive care for all emergency conditions, and should satisfy the minimum criteria for a Major Referral or Rural Base Emergency Department, as outlined in the Australasian College for Emergency Medicine role delineation document (in Appendix).

The role of the hub should include:

- **Clinical**
 - manage and provide definitive care for all emergencies
 - provide clinical support to spoke sites to enable patients to be fully managed at the spoke site

- advise and assist the spoke sites where complex conditions/injuries may be unable to be managed locally

- **Administrative** (in consultation with the spoke sites)
 - Coordinating role across the network in relation to:
 - setting standards and benchmarks
 - coordinating staffing, especially to meet seasonal demands
 - rotation of staff between the sites and facilitation of educational opportunities
 - coordination of communication to manage extreme peaks for capacity
 - coordination of clinical and equipment standards

Role of spoke sites

The spokes would generally be smaller hospitals providing a range of inpatient services. The Emergency Department would be capable of managing most emergencies and, dependent on the inpatient services available, providing definitive care for most. In Areas with more than one major urban hospital, a spoke site may be a referral hospital.

It is not suggested that active diversion from spoke hospitals occur, except for specific cases such as major trauma (in accordance with a formal statewide plan). The role of the spoke site would be to assess, stabilise and treat all patients presenting there, although they may be subsequently transferred to a specialised site for ongoing care (either a spoke hospital or hub hospital).

Some spoke hospitals may sub-specialise in services that do not require links to tertiary critical care services. Such a site would become the network centre for that sub-specialty, receiving secondary transfers following stabilisation at any of the network Emergency Departments. Unless urgent resuscitation is required at the time of arrival, such secondary transfers should generally not be received via the receiving hospital Emergency Department, but be transferred directly to the accepting inpatient unit.

Inter-hospital transport

If this model is to function effectively, it is imperative that an efficient transport service is in place for the network. Clinical requirements should be considered when organising transport. The network should have a written agreed policy for intra-network transfers, including effective communication systems, forms of transport, requirements for escorts (and types of escort), clinical standards, bed allocation process, liaison person and entry process in the receiving hospital. Where possible, the transfer should be effected with a minimum number of phonecalls, and with minimal or no impact on the receiving Emergency Department.

Rural application

The rural sector already has established processes for networking, and the hub and spoke model will continue to function in the rural sector. The hub and spoke sites should have the same roles, in principle, as in metropolitan areas. However, the rural sites should be linked to a metropolitan tertiary referral hospital, providing a default linkage for referrals, clinical advice and support, (super-specialties withstanding).

For rural areas the structure must provide:

- local access to frequently required services for which local skills are available
- efficient transfer of urgent and complex cases to larger centres where more specialised skills are available
- greater levels of support (such as telemedicine and information technology) to assist staff in smaller departments.

Recommendations:

- Area Health Service Emergency Department services should be configured in a hub-and-spoke network model that works to provide a minimum standard of care in every Emergency Department within the network.
- There should be one designated hub in each Area Health Service.

- An Area Director of Emergency Department Services should be appointed to facilitate the coordination and management of Emergency Department services in the Area Health Service.
- The role of the Area hub site and the Area Director should be those of oversight, coordination and communication rather than direct line-management – the new structure should not cut across local departmental Emergency Department management, but work with it.
- There should 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.
- The hub site hospital may have a concentration of some critical care and super-specialty services, but it is not intended that all severely ill patients be transferred to the centre. While the spoke site hospitals may sub-specialise in providing certain inpatient services for the network, each Emergency Department should retain an appropriate profile and resources to appropriately manage all patients presenting there.
- Area wide and cross-Area appointments and rotations of staff should be considered and encouraged.
- Rural areas should 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).
- A communication strategy should be developed to inform the community of the Emergency Department network function and why patient transfer may occur following stabilisation.
- There should be a mechanism to allow a statewide overview of the Area Health Service emergency network performance.

Rural-Urban linkages

Rural areas should be linked with a metropolitan hub, and it is recommended that the default linkages⁸ that are aligned with the critical care networks be formalised.

This set of linkages does not preclude referrals outside the matrix but should be used as a default structure for co-ordination and support across the sites. It is acknowledged that some Area Health Services have referral patterns that flow across State borders.

These are outlined below:

Tertiary Referral Hospital Linked Health Service	
Royal Prince Alfred/Concord	Macquarie Far West
Prince of Wales	Southern (Bega, Queanbeyan)
Liverpool	Southern (Goulburn)
Westmead	Mid Western (Orange, Bathurst)
Nepean	Mid Western (Lithgow)
St George	Illawarra
St Vincents	Greater Murray
Royal North Shore	Central Coast New England
John Hunter	Mid North Coast Northern Rivers

Recommendation:

- Rural areas should be linked with a metropolitan site based on the default critical care networks.

Information and communication systems

Improved data collection through the Emergency Department Information System and installation of information systems in all departments to allow accurate system measurement is just the beginning. Clinically based, compatible information systems should be available in all Emergency Departments. The focus of the system should be as a clinical tool with data production as a by-product. Smaller departments should utilise the minimum data set (Emergency Department Data Dictionary V3.0) and an information system applicable to the setting.

To support networking, robust information technology strategies are necessary. Telemedicine enterprises to support referral, education and knowledge sharing, teleconferencing and telehealth are all measures that need to be implemented to allow adequate development and usage of the networks.

The implementation of robust technology and communication methods across all sites will assist in the strengthening and functioning of the network.

It is recommended that a web based system be implemented in all networks. This could include notification of restricted access periods (LTOs) in the network, notification of patient transfers, telelinks enabling clinical support, clinical review and educational support.

Similar communication links should also exist between Emergency Departments and the ambulance service to enable the exchange of information such as hospital and Emergency Department bed occupancy, incoming patients and clinical issues. Emergency Department access to the ambulance radio network allows direct communication with the scene.

It is also suggested that this technology be expanded to incorporate other aspects of the network. A webpage outlining community and other services available in the area that can be accessed by both Emergency Department staff and local General Practitioners would optimise the delivery of appropriate care and, possibly, avoid inappropriate referrals to the services.

Recommendation:

- Clinically based, compatible information systems should be available in all Emergency Departments. The focus of the system should be as a clinical tool with data production as a by-product.
- Smaller departments should utilise the minimum data set (Emergency Department Data Dictionary V3.0) and an information system applicable to the setting.
- A web based communication system should be implemented in all networks including such things as notification of restricted access periods (LTOs) in the network, notification of patient transfers, clinical support, clinical review and educational support.
- A webpage should be developed outlining local community and other services available that can be accessed by both Emergency Department staff and General Practitioners.

Operational policies

Hospital operational policies and workpractices are generally based on tradition and are often out-of-pace with clinical advances. While emergency medicine and Emergency Departments have developed significantly in the last decade, Emergency Department and hospital policies and procedures have lagged behind, and often compromise the effectiveness of the increasingly senior staff in Emergency Departments.

These issues should be addressed in the following areas:

Workpractice review

Processes in Emergency Departments and throughout the hospital should be critically reviewed and updated, using the following principles:

- Re-allocation or deletion of inefficient tasks
- Re-design of clinical roles, including the extended nursing role
- Efficient use of ancillary staff
- Effective use of communication technology

Operational policies and procedures

Policies within the Emergency Department should support the core role of Emergency Department, and promote efficient workpractices and quality patient care. In all Emergency Departments, this includes policies and procedures to facilitate:

- effective and reproducible triage, using trained staff
- quality patient care, prioritised by triage category
- efficient documentation of both patient data and clinical information in an easily retrievable form, minimising duplication
- adequate number, seniority and mix of specifically trained staff
- optimal inpatient bed access for patients requiring admission
- rapid access to investigations and consultation
- quality processes and systematic clinical review
- relevant continuing education for all staff

In urban and large regional hospitals, operational policies should also aim to:

- focus on the assessment and treatment of the acute undifferentiated patient, prioritised by triage category
- achieve performance benchmarks for all triage categories
- where appropriate, standardise clinical practice for common conditions by the use of agreed guidelines based on evidence-based best-practice
- minimise or eliminate use of the Emergency Department as a processing centre for organised admissions or arranged interhospital transfers
- minimise or eliminate use of the Emergency Department as an outpatients clinic
- refer patients back to their local doctor or community consultant
- avoid unnecessary delays to the admission of Emergency Department patients, for example by giving Emergency Department senior staff authority to admit, and/or transferring admitted patients who have completed Emergency Department care to a 'transition ward' for review by the relevant inpatient team

Relationships between hospital departments and community

The Emergency Department should be a distinct department, sited within the appropriate division or clinical stream. There should be negotiation and clearly documented agreements between the Emergency Department and other departments, including the following issues:

- Core role and expectations of the Emergency Department and inpatient units
- Admission policy and discharge policy
- Bed management policy
- Responsibility for inpatients remaining in Emergency Department awaiting beds
- Access to and priority for investigations for Emergency Department patients

- Bilateral communication between Emergency Department and community practitioners
 - Consensus guidelines on clinical issues, founded on evidence-based best-practice where possible
 - Process for review of complaints and critical incidents
 - Reciprocal educational opportunities, including rotations in emergency medicine and nursing for trainees in other disciplines
 - Bilateral communication with Ambulance Service management, including opportunities for conjoint education, problem-solving and review of critical incidents.
- undertake annual planning in respect of the emergency and booked streams, taking into account the expected seasonal, weekly and daily variations to provide sufficient beds at peak times
 - develop and revise a rolling three year Integrated Bed Management Plan that, among other things, addresses the issue of seasonality of demand
 - develop streamlined admission and discharge protocols to plan for and facilitate timely discharge of patients, noting that discharge planning should occur pre admission. These plans should address planned discharge date, priority lists for admission, delegating discharges and ensuring appropriate weekend discharges.

Bed access block

Bed Access Block remains the major challenge facing Emergency Departments in urban and some rural areas. The issues surrounding access block are complex but must be adequately resolved to ensure the functionality of Emergency Departments and emergency networks into the future.

It is clear that strategies to address access block must be implemented throughout the system and that just focussing on Emergency Departments without adequate systems integration is unlikely to produce satisfactory results. There needs to be a commitment from all stakeholders to ensure success.

The following strategies were recommended by the Emergency Department Access Block Working Party in 1999.

Short term strategies

- That Area Health Service and hospital managements commit to regularly monitoring in patient bed requirements and providing sufficient beds to meet seasonal emergency demand, taking into consideration the appropriate staffing required and available, as part of Area Health Service Performance agreements.
- That Area Health Services implement the following bed management strategies:
 - provide timely identification of beds and allocation for admission
 - develop and maintain an adequate bed status information system

Longer term strategies

- That Area Health Services develop appropriate mechanisms to assign costs of access block patients in Emergency Departments to the relevant clinical stream.
- That Area Health Services appoint an Access Coordinator with management and reporting functions to encompass both emergency and booked access and that they provide reports and performance management advice regarding access performance on a State wide basis.
- Hospitals should have in place a bed management structure as appropriate to the nature of the organisation, to assign beds on the basis of the patient's clinical priority.
- Area Health Services, in consultation with senior clinical staff, develop quality improvement measures to enhance discharge processes.
- That Area Health Services continue to enhance linkages with community health and ambulatory care services to improve patient care coordination and availability of domiciliary care.

Strategy integration

These strategies should be integrated with the other Emergency Department workpractice reforms, operational policies and procedures and workforce planning considerations, described in the Plan.

Optimising Emergency Department design

The physical layout of an Emergency Department can have a major impact on staff and patient safety, operational efficiency and staffing requirements. The Emergency Department should also have immediate access to diagnostic imaging and pathology departments, and close access to operating theatres and intensive care units. It is recommended that the Australasian College for Emergency Medicine Emergency Department Design Guidelines be used in planning new departments or in designing renovation or expansion of existing facilities.

Alternative service delivery options

Historically Emergency Departments have been established as part of the hospital service and viewed as an 'Emergency Department' no matter the level of service able to be provided or the true need of the local community. To optimise emergency care for the community the best way to deliver that care should be explored and, if applicable, innovative methods of delivery implemented. New or different models of care tailored to the community need can be implemented. The aim of changing service delivery models is to improve the integration and delivery of services between the community, general practice services, Emergency Departments and the hospital; not to replace the care delivered by Emergency Departments.

Possible options for some smaller facilities include:

- **Limited opening hours** – such as 8am to 12 midnight. This model would only be appropriate where full 24 hour Emergency Department services are available nearby, and could only be effectively and safely implemented with adequate public education. The Emergency Department(s) likely to absorb the overnight caseload must be adequately resourced to do so.
- **Establishment of low-acuity ambulatory clinics** – It is possible that some smaller facilities, unable to provide the gamut of emergency care, could become 'non ambulance' departments, but providing acute care for ambulatory patients. Such facilities would offer single-episode care for patients with low acuity acute illness and injury, using multidisciplinary staff, rather than functioning as a general practice (which includes ongoing care, home visits and counselling etc).

This model would only be appropriate where there is a shortage of local after-hours general practice services and where full Emergency Department services are available nearby. The service could employ either emergency medicine-trained staff or general practitioners (as the patient population may represent an area of overlap between the two), but the service should be managed by a senior doctor of emergency medicine background, as the organisational and management skills required would be similar to managing an Emergency Department.

Such a service should be within the Emergency Department network, under the overall coordination and oversight of the Area Director of Emergency Department Services. This is essential to ensure that there is clinical policy coordination, streamlined referral pathways and adequate quality assurance and education systems in place, and that resources are appropriately distributed.

Other models

The design of local service models should be informed by reasonable evidence, although it is acknowledged that innovative solutions may be developed outside the current working models. Whatever model is implemented, it is essential to ensure that the provision of ambulatory services does not divert resources from the care of more acute patients, and that the more difficult and intense work of high acuity emergency medicine receives adequate infrastructure and remuneration.

Other types of models that could be implemented include:

- Seamlessly integrated models in which the General Practitioners work principally in their area of core competency alongside emergency physicians working principally in their area of core competency to achieve the best outcomes for patients who present to the service. In this model General Practitioners work under the organisational procedures established within the Emergency Department.
- Proximate but independent Emergency Department and General Practice services, potentially sharing nominated resources. This model enables emergency physicians to prioritise emergency cases and General Practitioners to prioritise ambulatory cases.
- Collocated Emergency Department and General Practice services that share nominated facilities and resources. For example the model could have a single triage service on site, single telephone services for the community, share infrastructure and some staff. This also allows the Emergency Department and General Practice service to prioritise their own caseloads.

- Emergency care by General Practitioners. This model is only suitable to rural areas where there are small Emergency Departments with no onsite emergency medicine staff.

Collocation of General Practice rooms and Emergency Department services and the provision of after-hours General Practice services has been implemented in some Areas. The benefit of these services appears heavily reliant on the perceived role of the service, both by the community and clinical staff, and cooperation amongst the staff involved.

Considerations for planning services

There are a myriad of interdependency issues involved in the configuration and delivery of Emergency Department services which should be considered as part of the decision making process in relation to planning for future provision.

A number of factors impact on attendances at Emergency Departments such as access to other services, cost, convenience and public perception of their illness. These factors are not likely to change in the short term. It is unlikely that a substantial change in the number of metropolitan Emergency Departments can be achieved. However, some consolidation and reconfiguration of services may be appropriate.

Equity factors

There are equity factors and qualitative measures affecting the community that should be considered during local planning processes. Services should be planned on the basis of identified need and with a considered assessment of the pattern and determinants of ill-health in an area. Special needs of population sub-groups, including those defined by socioeconomic status should be addressed. The following are suggested for consideration:

● Population characteristics

- economic disadvantage
- educational disadvantage
- accommodation problems
- transport problems
- crime rates
- rates of drug and alcohol abuse

● Cultural issues

- non-English speakers
- non-English speaking background
- illiteracy
- victims of war and disaster
- new arrivals to Australia

● Transient populations

- workers
- school attenders
- inmates of institutions
- holiday populations
- Special areas
- industrial areas
- contaminated areas

Clinical quality and access

It is essential that any proposed re-configuration of services retains clinical effectiveness and access. For example, indicators such as time to thrombolysis for acute myocardial infarction should be preserved or improved.

Liaison with community practitioners

The specific issue of the interaction between Emergency Departments and General Practice services will be addressed in the paper 'Emergency Department and General Practice Interface Strategy'. The precise model for interaction will be informed by local needs. It is recognised that in some rural and remote communities General Practitioners are the only medical providers and, therefore, an integral part of the emergency network.

The integration of Divisions of General Practice into the communication network for emergency services will improve continuity of care. Liaison between General Practitioners and Emergency Departments could be enhanced with dedicated contacts/phone numbers for General Practitioners to access the emergency network for consultation purposes, and with improvement in the frequency and quality of communication from referring General Practitioners. Equally, feedback to Divisions of General Practice and individual General Practitioners from the Emergency Department service could be further improved. This would enhance patient care and working relationships between Emergency Departments and General

Practitioners by informed consultation and referral. Some patients may be referred to a more appropriate setting for care. A one phone call system for General Practitioners and Emergency Departments to ascertain what community services are available will lead to a better continuum of care and prevent unnecessary stays in Emergency Departments for patients whose health needs are better met by other services.

Recommendation:

- The NSW Health Department facilitate the further development of strategies to improve the continuity of care between Emergency Departments and the community.

Education and training

It is recognised that varying emergency skill levels exist across facilities. In addition to the training of junior medical and nursing staff and emergency medicine trainees, education and support for General Practitioners and Career Medical Officers working in Emergency Departments should be coordinated in relation to the local requirements.

Hospital infrastructure

Emergency Departments require the support of diagnostic, medical and surgical services to operate efficiently and effectively. Any change in the role of the Emergency Department will impact on the demand for services such as inpatient services, radiology and medical imaging, pathology and operating theatres. If an Area Health Service reconfigures its Emergency Department services, resources and bed requirements of the new configuration should be considered so that the overall demand at these centres can be accommodated. Therefore, Emergency Department service provision should be incorporated with the service planning of each facility and the Area as a whole.

Partnership with Ambulance Service

It is not suggested that the ambulance service conducts pre-hospital triage with active diversion of certain cases from spoke hospitals, except for specific formal systems such as the state trauma plan. The role of the spoke site would be to assess, stabilise and treat all patients presenting there, although they may be subsequently transferred to a specialised site for ongoing care (either a spoke hospital or hub hospital).

Collocation of the Ambulance Service with the local Emergency Department may be a suitable arrangement for some hospitals, particularly in rural areas. However, the model needs to recognise the existing roles of health carers. Care should be taken to ensure existing roles are not adversely affected and that ambulance staff are not used to fill hospital clinical vacancies.

The private sector

Three private hospital Emergency Departments currently operate in NSW and these are universally located in the metropolitan sector. Without service agreements or contracts neither NSW Health or the Area Health Services can rely on the provision of private emergency services, as the operator may choose to discontinue or change the service without reference to the public sector. Nevertheless, the provision of these services may impact on the demand for services in public Emergency Departments, and therefore, need to be considered in the planning process.

Call centres

The implementation of call centres is being considered in another forum. Recent overseas experience demonstrates that these operations have little impact in reducing Emergency Department attendances but may provide another avenue of advice for the community. Consideration of local needs and utilisation within the networks may see further development of the concept.

Retention of skilled staff

Emergency care is a specialised area of medical and nursing care. There are difficulties attracting and retaining skilled and experienced emergency trained medical and nursing staff. As with other critical care areas there is a high rate of attrition in the specialty. Consolidation and reconfiguration of Emergency Department services will foster support and staff rotation which may lead to greater retention rates across the specialty.

Recommendations:

- all clinicians working in Emergency Departments should maintain their emergency medicine knowledge and skills through participation in the network educational activities as well as specialised courses.

Workforce issues

Medical

Across NSW, Emergency Department workload continues to grow in both volume and complexity. Skills in critical decision-making, disposition decisions and patient-flow management are more crucial than ever in maintaining Emergency Department function. This growing role demands the continued expansion of the specialist emergency physician workforce.

A strategic plan is required to ensure adequate numbers of emergency physicians available to NSW Emergency Departments over the next 10 years. This strategy should be developed using the principles of the Australian Medical Workforce Advisory Committee recommendations for the emergency medicine workforce. A staged, statewide approach is necessary.

As a matter of urgency, a specialist emergency physician should be directly available to all hospital Emergency Departments of Level 4 role delineation and above and smaller hospitals should be networked with centres employing emergency physicians.

Once this is achieved there should be staged progress towards enhancing tertiary level hospital Emergency Departments to 24 hour 7 day emergency physician cover, and towards enhanced emergency specialist cover in networked Emergency Departments, (ultimately progressing to at least 16 hour a day 7 day cover).

The document *'Implementing the Emergency Medicine Australian Medical Workforce Advisory Committee Recommendations'* (NSW Dept of Health, February 2000) provides a discussion of relevant issues and strategies.

The recruitment and retention of other senior and middle-level medical staff such as Career Medical Officers is also crucial - particularly in Emergency Departments with few or no emergency medicine trainees. Recruitment and retention as discussed under Nursing Workforce issues are as relevant for the medical workforce as they are for nursing - many problems are common to all clinicians within Emergency Departments.

Nursing

Nursing workforce issues continue to be numerous across all settings. Recruitment and retention of nurses continues to have a high priority within NSW Health (Our Commitment – NSW Nursing Workforce, 2000; Recruitment and Retention of Nurses – Progress Report, 2000⁹).

Emergency nursing is not immune from the problems experienced in other services with recruitment and retention. Some initiatives promoted by area health services that may have an impact include:

- Flexible working conditions
- Recognition of expert clinicians and models of excellence
- Enhanced career ladders to incorporate advanced practice and the nurse practitioner role
- Ongoing commitment and support for educational activities
- Improved availability of clinical nurse educators to promote local educational needs including, mentorship programs for new graduates and nurses new to the specialty, skills update, assisting recruitment through specialty refresher programs
- Marketing and promotion of specialty
- Rotation of staff through critical care networks with the opportunity for rural/remote and metropolitan exchanges to promote educational opportunities and foster skill maintenance and networking
- Recognition that nurses should contribute to policy writing and planning processes
- Support from management for individual clinician development
- Recognition that nurses often function as a 'generalist specialist' nurse particularly in rural and remote NSW
- Exploration of utilising nurses to develop specific protocols to recognise what they already do or can do in the absence of a medical practitioner such as initiate retrievals and drug therapy.

An accurate measurement of patient complexity continues to be a crucial necessity for all members of the emergency health care team but particularly for nurses. The current data that informs staffing is based on number of beds in Emergency Departments, patient numbers and triage categories but these indicators do not fully reflect workload and nursing intensity. It is recommended that tools be formulated that will precisely record workload and inform staffing levels for quality patient care.

Access to education and further training requires high levels of energy and support at both Area Health Service and local level for success. The overwhelming theme to emerge from discussions with emergency nurses, both metropolitan and rural/remote, is the need for educational opportunities. This issue covers all levels of nursing and involves ongoing education and skills maintenance. The roles of Clinical Nurse Consultants and Clinical Nurse Educators need to be separated and clearly defined. Particularly in rural areas the 'critical care' Clinical Nurse Consultant is expected to be responsible for all aspects of education across all sites in large geographical areas. The other features of the Clinical Nurse Consultant role make it impossible to adequately fulfil all requirements of the position. The concept of creating a Clinical Nurse Educator role in tandem with the Clinical Nurse Consultant is promoted as an opportunity for enhanced nursing education.

The provision of education for all denominations of health workers as a combined forum could also be explored. The fact that General Practitioners, Career Medical Officers, resident medical staff and nurses all require the same basic emergency/critical care education and each group has, in the past, addressed their education in isolation has inhibited networking, collaboration and uniform knowledge and skill attainment. An integrated education model, particularly in rural NSW, could lead to improved educational opportunities and resource pooling.

The benefit of clerical staff and assistants to provide non-clinical work needs to be emphasised. An appropriate mix of staff to fulfil all requirements of the department including data collection, clerical, cleaning and stock control will free up clinical staff to concentrate on delivery of direct patient care.

Recommendation:

- A complexity tool should be developed to address workload and inform staffing levels for quality patient care.
- The concept of creating a Clinical Nurse Educator role in tandem with the Clinical Nurse Consultant should be promoted, to enhance nursing education.
- An integrated education model for medical and nursing staff, and general practitioners should be developed to deliver basic emergency and critical care education.

Implementation Plan

Responsibility for implementation of the model and networking processes rests with Area Health Services. It is expected that implementation would be a staged process and changes in service delivery and physical infrastructure would occur over time. However, networking of services should be a priority aim and these processes put into place immediately.

.A communication strategy will be developed to ensure that all stakeholders and the community are fully informed regarding any changes, perceived or actual, that will occur to service delivery at both the State and Area level.

The following outlines the critical steps in the implementation pathway:

Date	Action
June 2001	Emergency Department Service Plan completed and endorsed.
July 2001	Area Health Services model the planning parameters and provide advice to NSW Health regarding implications of the modelling process. Networking of Emergency Departments, inter-Area and intra-Area, in place. Area Health Service commence planning of future Emergency Department services configurations to improve service delivery. Area Director of Emergency Department Services position and responsibilities defined by Area Health Services and recruitment action commenced.
August 2001	Web based Area communication system under development by Area Health Services.
September 2001	Mechanism established for cross appointments by Area Health Services.
October 2001	Area Health Services provide advice on local networking: designated hub, spoke roles, rural/metro linkages.
December 2001	Area Directors of Emergency Department Services appointed. Networks have in place common protocols and standards.
February 2002	Web based Area communication systems implemented in Area Health Services.

The action plan and implementation timeframe will be further developed and refined.

Metropolitan services

As documented by the Metropolitan Services Implementation Group¹⁰, metropolitan services include the Hunter, Illawarra and Central Coast for the purposes of this exercise. Role delineation of Emergency Departments is as outlined in the 'Guide to the Role Delineation of Health Services 2000'¹¹ which is contained in the Appendix.

In the Sydney metropolitan area there are 58 facilities which provide acute care, 32 of which provide Emergency Department Services operating at level 4 or above. A further 11 provide emergency services at level 3 or below. Nine of these hospitals function as Major Trauma Services. The two specialist paediatric departments, New Children's and Sydney Children's Hospital provide a supra-regional role for NSW.

In Sydney, the number of Emergency Departments per capita is 1:162, 300. Three quarters of metropolitan residents are within 8 kms (straight line measurement) of an Emergency Department¹².

A list of current sites and 1998/99 and 1999/00 activity is provided below.

Metropolitan planning

Postcodes of residence of presenters at metropolitan Emergency Departments were examined by the Group. It was concluded that the population was quite mobile and that no consistent pattern existed. There was a very small number of postcodes that were exclusively serviced by one hospital. Therefore, postcodes were not used as a parameter by the Group.

The following parameters were recommended for metropolitan planning. The suggested parameters should be considered as a whole and not used individually in isolation:

- **throughput** – 20,000 per yr minimum
- **optimal distance/time for access** – 20kms or 30 minutes by private car
- population base – 1:200k (minimum)
- **equity factors** – qualitative measures such as socioeconomic disadvantage, cultural issues and equity of access

A more defined list of equity factors is included in the section titled 'Considerations for Planning Services'.

The rationale for the parameters is as follows:

- **throughput** – A minimum of 20,000 attendances is thought to be a minimum level of activity to sustain good practice and clinical skills. This is the threshold that is used for accreditation of training positions and is supported by expert opinion.
- **optimal distance/time for access** – The Australasian College for Emergency Medicine has recommended these parameters although it is noted that they have no official status.¹³
- **population base** – The group felt that this parameter should be used to assess the need for a service where there was no existing service.
- **equity factors** – These are qualitative measures affecting the community that should be considered during local planning processes

The Group has placed no order of priority on the suggested parameters.

Recommendation:

- Metropolitan services should be planned using the suggested parameters – throughput: 20,000 per yr (min), distance/time: 20kms/30mins by private care, population base: 1:200,000 (min), equity factors. These parameters should be considered together – not individually in isolation.

Metropolitan current sites and activity

For those hospitals that do not submit Emergency Department Information System data Non Admitted Patient Occasions of Service (NAPOOS) have been used to estimate workload. However, it should be noted that this does not necessarily accurately reflect emergency presentations.

Area Health Service	Emergency Department	Role Level*				Attendances^ /NAPOOS 1998/1999	Attendances^ /NAPOOS 1999/2000
Central Sydney	Royal Prince Alfred	6				44880	44203
	Concord	6				23750	23968
	Canterbury			4		23959	24844
New Children's Hospital	New Children's**	6				40937	38579
Northern Sydney	Royal North Shore	6				39542	40888
	Hornsby-Kuring-Gai			4		23283	21654
	Manly			4		18666	17986
	Mona Vale			4		17772	17840
	Ryde			4		21923	20252
South Eastern Sydney	Prince of Wales	6				37251	38141
	St George	6				43105	43202
	St Vincents	6				32377	32901
	Sydney Children's Hospital**	6				28277	27290
	Sutherland		5			28731	27896
	Sydney/Sydney Eye			4		16569	17169
South Western Sydney	Liverpool	6				42910	42533
	Bankstown/Lidcombe		5			31767	30933
	Bowral				3	15364	15483
	Camden				3	10435	9216
	Campbelltown		5			33583	34145
	Fairfield			4		22723	22527
Wentworth	Nepean		5			37094	36985
	Blue Mountains			4		16662	16061
	Hawkesbury			4		N/a	N/a
Western Sydney	Westmead	6				39291	37856
	Auburn			4		20275	19374
	Blacktown			4		28940	27953
	Mount Drutt			4		28160	25902
Central Coast	Gosford		5			42297	42272
	Wyong				3	31282	32669
Hunter	John Hunter	6				46968	45853
	Belmont				3	17886	18031
	Cessnock				3	16264	15742
	Denman				3	N/a	N/a
	Kurri Kurri				3	8067	7671
	Maitland		4			26316	31041
	Muswellbrook				3	6290	5576
	Newcastle Mater		5			22552	21641
Illawarra	Illawarra Regional Hospital		5			37158	38461
	Bulli				3	8927	8956
	Milton-Ulladulla				2	N/a	N/a
	Shellharbour				3	21618	21141
	Shoalhaven			4		26153	26841

* Role level self designated by Area/Hospital and derived from Structural and Funding Branch survey (2000)

^ Throughput alone does not constitute an indicator for planning Emergency Departments. Services should be considered in light of all the suggested planning parameters and other local factors.

Rural services

In rural NSW there are 129 facilities which provide acute care, 13 of which provide Emergency Department Services operating at level 4 or above. A further 83 provide emergency services at level 3 or below. Eleven of these hospitals function as Rural Trauma Services.

A list of current sites and 1998/99 and 1999/00 activity is provided below.

The difficulties in obtaining an accurate reflection of workload in rural departments is acknowledged. A significant number of departments do not access any Emergency Department Information System and, therefore, do not collect or submit the Emergency Department Minimum Dataset extract. Non Admitted Patient Occasions of Service (NAPOOS) has been used to assess the workload of these departments but it should be remembered that these figures include a number of occasions of service type and are not a pure reflection of emergency presentations.

It is recommended that the collection of data is necessary and that data collection in all sites be sought. It is noted that a minimum dataset for rural departments has been included in the Emergency Department Data Dictionary V3.0.

Rural planning

It is recognised that parameters for planning in rural and remote NSW could not be as easily extrapolated as for the metropolitan area. There are no corresponding parameters for population, time and throughput due to rurality and equity factors.

However, it is considered that all communities should be able to access an Emergency Department network. This will vary across Areas, as access may be through a Multi Purpose Service (MPS), district hospital or rural base hospital.

Formalisation and strengthening of networks should allow smaller departments, especially those without dedicated staff, to better access clinical support and facilitate treatment or transfer.

It is recommended that each rural department, no matter what level, be an integrated part of the local service model, be that an MPS or base hospital.

There needs to be recognition and formalisation of utilising nurses to develop specific protocols to recognise what they already do or can do in the absence of a medical practitioner such as initiate retrievals and drug therapy.

Rural networking

The networking between Emergency Departments within a rural Area Health Service should follow a similar hub and spoke model as described previously. It is acknowledged that many rural Emergency Department networks are already in existence. The linkages between rural hospitals should be principally to the area hub hospital and then secondarily to the metropolitan tertiary hospital (as described in Networking – General section).

The components of a rural intra-area network and its links to a metropolitan tertiary hospital will be to strengthen professional inter-relationships and support structures. Standardisation of clinical policy, protocols, guidelines, training, drug formularies and product utilisation should occur where practical. As for metropolitan areas, the appointment of an Area Director of Emergency Services is recommended to improve coordination or management. Rotation and cross appointments of clinical staff between metropolitan and rural Area Health currently occurs to some extent and, where practical, should be encouraged developed further.

Referral patterns may be via a critical care network or by traditional referral pathways to other hospitals. In either case, pathways for referrals should be clearly delineated to minimise the role of the receiving hospital's Emergency Department to clinical necessity. Mechanisms for the efficient and safe reception of patients at a hub hospital should be developed.

Recommendation:

- Data collection be undertaken in all Emergency Departments. Smaller departments should utilise the minimum dataset (Emergency Department Data Dictionary V3.0) and an information system applicable to the setting.
- Exploration of utilising nurses to develop specific protocols to recognise what they already do or can do in the absence of a medical practitioner such as initiate retrievals and drug therapy.

Rural current sites and activity

There are few sites in the rural sector that provide Emergency Department Information System data, these are generally the regional referral or base hospitals. In order to estimate that workload at the other sites Non Admitted Patient Occasions Of Service (NAPOOS) has been used where available. However, this figure does not necessarily accurately reflect emergency presentations at the hospital.

Area Health Service	Emergency Department	Role Level*				Attendances/ NAPOOS 1998/1999	Attendances/ NAPOOS 1999/2000
Far West	Balranald				2	N/a	N/a
	Bourke			3		5961	5171
	Brewarrina				2	N/a N/a	
	Broken Hill			3		22096	20772
	Collarenebri				2	N/a	N/a
	Goodooga				2	N/a	N/a
	Walgett				2	N/a	N/a
Greater Murray	Albury			4		22595	23200
	Barham				2	N/a	N/a
	Batlow				2	N/a	N/a
	Berrigan				2	N/a	N/a
	Cootamundra				2	N/a	N/a
	Corowa				2	N/a	N/a
	Deniliquin				3	N/a	N/a
	Finley				2	N/a	N/a
	Griffith		4			20277	19848
	Hay				2	N/a	N/a
	Henty				2	N/a	N/a
	Hillston				2	N/a	N/a
	Holbrook				2	N/a	N/a
	Jerilderie				2	N/a	N/a
	Leeton				3	N/a	N/a
	Narrandera				2	N/a	N/a
	Temora				3	N/a	N/a
	Tocumwal				2	N/a	N/a
	Tumut				3	N/a	N/a
	Wagga Wagga		5			32122	31331
Wyalong				2	N/a	N/a	
Macquarie	Cobar				2	N/a	N/a
	Coolah				2	N/a	N/a
	Coonabarabran				3	N/a	N/a

* Role level self designated by Area/Hospital and derived from Structural and Funding Branch survey (2000)

Area Health Service	Emergency Department	Role Level*				Attendances/ NAPOOS 1998/1999	Attendances/ NAPOOS 1999/2000
Macquarie continued	Coonamble				2	N/a	N/a
	Dubbo			3		25372	26125
	Dunedoo				2	N/a	N/a
	Gilgandra				2	N/a	N/a
	Gulargambone				2	N/a	N/a
	Gulgong				2	N/a	N/a
	Mudgee			3		6282	N/a
	Narromine				2	N/a	N/a
	Nyngan				2	N/a	N/a
	Wellington			3		7471	N/a
Mid North Coast	Bellinger				2	N/a	N/a
	Bulahdelah/Myall Lakes				2	N/a	N/a
	Coffs Harbour			4		25158	25194
	Gloucester				2	N/a	N/a
	Kempsey (Macleay Valley)			4		17203	17986
	Macksville				3	8829	8018
	Manning			4		17434	17686
	Port Macquarie			4		17504	17498
Wauchope				2	2703	3416	
Mid Western	Bathurst			4		18629	18401
	Condobolin				2	N/a	N/a
	Cowra				2	N/a	N/a
	Forbes				2	3900	4014
	Lithgow				3	22220	17832
	Orange			4		23672	23522
	Parkes				2	8205	8406
New England	Armidale			4		11141	14853
	Barraba				2	N/a	N/a
	Boggabri				2	N/a	N/a
	Glen Innes				2	N/a	N/a
	Gunnedah				3	4812	4504
	Guyra				2	N/a	N/a
	Inverell				2	4879	1540
	Manilla				2	N/a	N/a
	Moree				3	9869	9838
	Narrabri				3	N/a	N/a
	Quirindi				3	824	N/a
	Tamworth			4		33431	34217
	Tenterfield				2	N/a	N/a
	Walcha				2	N/a	N/a
	Warialda				2	N/a	N/a
Wee Waa				2	N/a	N/a	

* Role level self designated by Area/Hospital and derived from Structural and Funding Branch survey (2000)

Area Health Service	Emergency Department	Role Level*				Attendances/ NAPOOS 1998/1999	Attendances/ NAPOOS 1999/2000
Northern Rivers	Ballina				2	13650	13825
	Byron			3		8853	8333
	Campbell (Coraki)				2	N/a	N/a
	Casino			3		8718	9080
	Grafton			3		10578	11543
	Kyogle			3		N/a	N/a
	Lismore		5			20515	21002
	Maclean				2	4137	5984
	Murwillumbah			3		4583	5984
	Tweed Heads			4		25693	26047
Southern	Bateman's Bay				2	N/a	9841
	Bega			3		7450	6972
	Bombala				2	N/a	N/a
	Boorowa				2	N/a	N/a
	Cooma			3		6708	6059
	Crookwell				2	N/a	1381
	Goulburn			3		14761	15106
	Moruya				2	8193	7068
	Murrumburrah/Harden				2	N/a	N/a
	Pambula				2	N/a	4886
	Queanbeyan			3		17551	18166
	Yass				2	N/a	3303
	Young			3		5164	5178

* Role level self designated by Area/Hospital and derived from Structural and Funding Branch survey (2000)

Appendix 1

Guide to the role delineation of Health Services – Emergency Department extract

Level	Description	Minimum level of support services							
		Path	Phar	Diag Imag	NIMed	Anaes	ICU	CCU	Op/s
1	Able to provide first aid and treatment prior to moving to higher level of service, if necessary. Access to a Medical Practitioner. Quality assurance activities ⁽³⁾ . Interpreters as per Circular 94/10.	1	1	1	-	1	-	1	-
2	Emergency service in small hospital. Designated assessment and treatment area. Generally deals with minor injuries and ailments. Resuscitation, limited stabilisation capacity and assisted ventilation capacity prior to referral to higher level of care. Nursing staff with isolated certificate to perform emergency x-rays of chests and broken limbs. RN ⁽¹⁾ from ward available to cover emergency presentations. RN ⁽¹⁾ with recent acute experience/First Line Emergency Care ⁽¹⁾ (FLEC) education. VMO on call. May be Local Trauma Service ⁽²⁾ . Access to local and statewide retrieval and transport service. Access to specialist consults including mental health resources, with the ability to transfer and refer. Access to CNC ⁽¹⁾ . Access to CNE(1) is desirable. ⁽¹⁾	1	1	1	-	1	1	1	-
3	As Level 2 plus designated nursing staff ⁽¹⁾ available 24 hour and NUM(1). Some RNs ⁽¹⁾ having completed or undertaking relevant post-basic studies. Has 24 hour access to Medical Officer(s) ⁽¹⁾ on site or available within 10 minutes. Specialists in general surgery, anaesthetics, paediatrics and medicine available for consultation, if applicable. Access to CNC. ⁽¹⁾ Full resuscitation facilities in separate room. Formal quality assurance program ⁽³⁾ . Access to allied health professionals and availability of specialist psychiatric/mental health assessment. Ideally Medical Director ⁽¹⁾ , preferably with specialist qualifications. Pathology, radiology and operating suites available during normal hours and on call access after hours. Education programs for nursing and medical staff	3	2	3	-	3	3	3	3

(1) See 'Medical and Nursing Staff Definitions' in Appendix I

(2) See Appendix IV, for related services required

(3) See 'Glossary' in Appendix V

Level	Description	Minimum level of support services							
		Path	Phar	Diag Imag	NMed	Anaes	ICU	CCU	Op/s
4	As Level 3 plus can manage most emergencies, including stabilisation and assisted ventilation and provide definitive care for most. Purpose designed area. Designated Medical Director ⁽¹⁾ with training and experience in emergency medicine. Experienced Medical Officer(s) ⁽¹⁾ on site 24 hours. RNs ⁽¹⁾ and experienced RNs ⁽¹⁾ on site 24 hours, including a RN with post basic emergency qualifications on each shift. Specialists on call 24 hours in intensive care, general surgery, paediatrics, orthopaedics, anaesthetics and medicine. 24 hour access to on call liaison psychiatry. May send out medical and nursing teams to disaster site. Participation in regional retrieval system (rural Base Hospitals) is desirable. May be a Regional Trauma Service ⁽²⁾ . May provide Emergency Department Registrar position. Provides in-house formal medical and nursing education programs. Access to CNC. ⁽¹⁾ Access to CNE ⁽¹⁾ is desirable. 24 hour access to pathology, radiology and operating suites.	4	4	4	3	4	4	4	4
5	As Level 4 plus can manage all emergencies, and provide definitive care for most. Medical Director ⁽¹⁾ is Fellow of the Australasian College for Emergency Medicine (FACEM) accredited (NB. Specialist Paediatric Hospitals may have Medical Director with specialist qualifications in paediatric emergency medicine). Access to CNC ⁽¹⁾ . Access to CNE ⁽¹⁾ is desirable. Has designated Registrar ⁽¹⁾ accredited FACEM. May have Staff Specialists in emergency medicine additional to Director. 24 hour on call emergency consultant cover. May be Area/Regional Trauma Service ⁽²⁾ which links with referral hospitals for tertiary level sub-specialties. Access to retrieval service. Send out teams to disaster site. 24 hour psychiatric assessment, on call. Extended hour access to allied health professionals (in particular social work services and physiotherapy)	5	5	5	3	4	5	5	4

(1) See 'Medical and Nursing Staff Definitions' in Appendix I

(2) See Appendix IV, for related services required

(3) See 'Glossary' in Appendix V

Level	Description	Minimum level of support services							
		Path	Phar	Diag Imag	NMed	Anaes	ICU	CCU	Op/s
6	As Level 5 plus has neurosurgery and cardiothoracic surgery on site. Subspecialists available on rosters. Has advanced subspecialty Registrar ⁽¹⁾ on site 24 hours. May be designated Supra-Area Trauma Service ⁽²⁾ . May have out-of-hours roster for Emergency Department Staff Specialists 24 hours/7 days. Capacity for management of frequent major trauma and other life threatening emergencies. Capacity for invasive monitoring and short-term ventilation. Dedicated Nursing Director and/or NUM ⁽¹⁾ 24 hours. A designated CNC(1) and CNE ⁽¹⁾ . Provides advice and stabilisation for complex cases transferred from other network hospitals. May provide or participate in regional retrieval service. Active research program. CT and nuclear medicine available on site.	6	6	6	5	6	6	6	6

(1) See 'Medical and Nursing Staff Definitions' in Appendix I

(2) See Appendix IV, for related services required

(3) See 'Glossary' in Appendix V

Appendix 2

Australasian College for Emergency Medicine Policy Document - role delineation

Introduction

The role and level of function of a hospital based emergency service depends on various factors, including the type of hospital in which it is located, its geographical location, location in the public or private sector and the place of the hospital within a health system network.

This guide to role delineation for Australasian Emergency Departments describes the level of function, structure and resources required for Emergency Departments to fulfil currently recognised roles. While closely related to the role of the hospital in which it functions, the role delineation described in this document refers to the functional capacity of the Emergency Department itself.

ACEM uses this descriptive framework as there are inconsistencies between existing role delineation definitions used by State, Territory, and National Health departments.

Significance of role delineation

The role delineation of an Emergency Department is a major determinant of the level of staffing, resources and physical design required. These factors are also influenced by the casemix-weighted patient throughput of the department, and its research, teaching, pre-hospital and other roles.

This document provides a guide for the classification of existing Emergency Departments by role delineation, and also outlines the functional capacity and resources required to adequately fulfil that role.

Definition of an Emergency Department

This document should be read in conjunction with the ACEM Policy Document 'Standard Terminology'. A hospital based emergency service must have facilities and functions greater than the minimum standard for 'Rural Emergency Service' Role delineation (section 5) in order to be considered an Emergency

Department. Smaller or less well equipped services are not considered to be 'Emergency Departments', but may be considered to be hospital based emergency services in accordance with this policy.

Interpretation of terminology

The specific terminology used, particularly for nursing roles, should be interpreted according to local practice. Further advice can be obtained from the regional ACEM Faculty Board or regional ACEM councillors.

Major referral Emergency Departments*

Structure

Sophisticated purpose-designed area, separate resuscitation area with capacity for frequent management of major trauma and other life-threatening emergencies. Capacity for invasive monitoring and short-term assisted ventilation.

Nurse staffing

Experienced RNs on-site 24 hours, many having completed post-basic training. Dedicated full-time clinical nurse educator and full-time CNC. Dedicated Nursing Director plus Nurse Managers 24 hours.

Medical staffing

Full-time Medical Director with specialist qualifications in Emergency Medicine, supported by extensive out-of-hours Emergency specialist cover (ideally 24 hours, 7 days). Advanced training Registrars on-site 24 hours.

Patient care

Can provide resuscitation, stabilisation and initial treatment for all emergencies. On-site ability to provide team response. May send out teams of appropriately trained staff to disaster site.

Network role

Designated Major Trauma Service. Provides Tertiary Referral Service to other network hospitals. Provides advice and stabilisation for complex cases referred from other network hospitals. May provide or participate in regional Retrieval Service, including aeromedical service.

Access to other specialist consultation

Specialists in Intensive Care, Anaesthesia, Paediatrics (if mixed dept), Liaison Psychiatry, medical and surgical subspecialties available or on-call 24 hours. Rapid access to Neurosurgery and Cardiothoracic Surgery services. Extended hours access to Allied Health professionals and Social Worker.

Access to support services

24 hour availability of pathology, radiology, CT and Operating Theatres. Ideally extended-hours access to Nuclear Medicine, Ultrasound, Interventional Radiology and MRI.

Other processes

Formal Quality Improvement program, including morbidity and mortality review. Dedicated clinical and management information system. Formal Disaster Plan. Membership of Emergency Department staff on principal hospital planning committees. Formal training program in Emergency Medicine and Nursing. Education program for staff. Undergraduate education program. Active research program.

* AMWAC Terminology: Major Referral Hospital

Urban district Emergency Department *

Structure

Purpose-designed area with separate resuscitation facilities and capacity for assisted ventilation.

Nurse staffing

Experienced RNs on site 24 hours, some having completed post-basic training. Dedicated NUM. Access to Clinical Nurse Educator. Access to Clinical Nurse Consultant.

Medical staffing

Full-time Medical Director with specialist qualifications in Emergency Medicine, supported by extended-hours specialist cover (ideally 16 hours, 7 days). Experienced medical officers, with resuscitation training, on-site 24 hours.

Patient care

Can manage all emergencies, including stabilisation and assisted ventilation, and provide definitive care for most. On-site ability to provide team response. May send out teams of appropriately trained staff to disaster site.

Network role

May be Urban Trauma Service links with Referral Hospital for Tertiary level subspecialty services. Access to Retrieval Service.

Access to other specialist consultation

Specialists in Intensive Care, Anaesthesia, General Surgery, General Medicine, Paediatrics, Orthopaedics and liaison Psychiatry on-call 24 hours. Access to Allied Health professionals and Social Worker.

Access to support services

24 hour availability of pathology, radiology and operating theatres. Normal hours access to Nuclear medicine and ultrasound. After hours on-call access to CT and angiography desirable.

Other processes

Formal Quality Improvement Program, including morbidity and mortality review. Dedicated clinical and management information system. Formal Disaster Plan. Participation of Emergency Department staff in hospital planning committees. Access to formal training in Emergency Medicine and Nursing. Participation in undergraduate education. Staff education program. Research program desirable.

* AMWAC Terminology: Other Capital City Hospital

Major regional/rural base Emergency Departments*

Structure

Purpose-designed area with separate resuscitation facilities and capacity for assisted ventilation.

Nurse staffing

Experienced registered nurses on site 24 hours, some having completed post-basic studies. Dedicated NUM. Access to Clinical Nurse Educator. Access to Clinical Nurse Consultant.

Medical staffing

Full-time Medical Director with specialist qualifications in Emergency Medicine, supported by extended-hours specialist cover. Experienced medical officers, with resuscitation training, on-site 24 hours.

Patient care

Can manage all emergencies, including stabilisation and assisted ventilation, and provide definitive care for most. On-site ability to provide team response. May send out teams to disaster site.

Network role

May be a Regional Trauma Service. Participation in regional retrieval system desirable.

Access to other specialist consultation

Specialists in Intensive Care, Anaesthesia, General Surgery, General Medicine, Paediatrics, Orthopaedics and liaison Psychiatry on-call 24 hours. Access to Allied Health Professionals and Social Worker.

Access to support services

24 hour availability of pathology, radiology, and operating theatres. After hours on-call access to CT and angiography desirable.

Other processes

Formal quality improvement program, including morbidity and mortality review. Dedicated clinical and management information system. Formal Disaster Plan. Participation of Emergency Department staff in key hospital planning committees. Access to formal training in Emergency Medicine and Nursing. Participation in undergraduate education. Staff education program. Research program desirable.

* AMWAC terminology: Major Provincial Hospital

Rural Emergency Service*

Structure

Designated assessment and treatment area with separate resuscitation facilities in a rural hospital.

Nurse staffing

Designated nursing staff available 24 hrs per day, who carry out triage. Designated NUM. Some RNs having completed or undertaking relevant post-basic studies.

Medical staffing

24 hours access to medical officers. Ideally full-time Director, preferably with specialist qualifications.

Patient care

Manages a range of acute illness and injury, including resuscitation and limited stabilisation. Provides local trauma service, with stabilisation prior to transfer.

Access to other specialist consultation

Specialists in general surgery, general medicine, Anaesthesia and Paediatrics on call 24 hours. Access to Allied Health professionals and Liaison psychiatry.

Access to support services

Availability of pathology, radiology and operating theatres during normal hours, on-call access after hours.

Other processes

Formal quality improvement program.

*AMWAC Terminology: Large Rural Hospital

Primary care / remote rural Emergency Service

Structure

Designated assessment and treatment area in a small hospital.

Nurse staffing

Nursing staff from inpatient wards available to cover Emergency Presentations.

Medical staffing

Visiting Medical Officers or Senior Medical Officers on call.

Patient care

Provides mainly non-scheduled GP services for minor illness and injury. Resuscitation and limited stabilisation prior to referral to a higher level of care. May provide local trauma service, with basic stabilisation and early consultation and transfer.

Access to other specialist consultation

Access by phone to specialist consultation. Well-organised communication system with referral network. Access to retrieval and transport service.

Access to support services

On-call access to pathology, radiology and operating theatres.

Description: Nursing role terminology

NUM: Nurse Unit Manager – Overall departmental nursing manager

CNE: Clinical Nurse Educator – Nurse dedicated to clinical teaching

CNC: Clinical Nurse Consultant – Nurse functioning as a specialist nursing consultant

* precise terminology and roles may differ from region to region

Footnotes

- 1 Emergency Department Strategic Directions – *Priorities and Planning Guidelines for the NSW Health System 1997-2000*, NSW Health, 1997
- 2 *Better Practice Guidelines for Bed Management*, NSW Health, 1998
- 3 *Emergency Department Access Block – Working Party Report*, NSW Health, 1999
- 4 *Implementing the Emergency Medicine AMWAC Recommendations Report of the NSW Steering Committee on the Feasibility, Assessment and Implementation of the AMWAC Emergency Medicine Workforce Recommendations*, February 2000
- 5 *Australasian College for Emergency Medicine Policy Document – The Australasian Triage Scale (2000)*
- 6 *Australasian College for Emergency Medicine, Policy Document – Standard Terminology (1993)*
- 7 *Australasian College for Emergency Medicine Policy Document – Role Delineation 1999 (1999)*
- 8 NSW Metropolitan Critical Care Plan (1996)
- 9 *Our Commitment – NSW Nursing Workforce, 2000; Recruitment and Retention of Nurses – Progress Report*, NSW Health, 2000
- 10 *Terms of Reference*, Metropolitan Services Implementation Group (July 2000).
- 11 *'Guide to the Role Delineation of Health Services 2000'* (draft), NSW Health 2000
- 12 *Emergency Departments Planning Model*, February 2000, KPMG
- 13 *Emergency Departments Planning Model*, Final Report, KPMG 2000

