

# Roadside to Bedside

## A 24-Hour Clinically Integrated Acute Management System for New Zealand





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## Developing a 24-hour clinically integrated acute management system for New Zealand

Ministry of Health  
Health Funding Authority  
Accident Rehabilitation and Compensation Insurance Corporation  
Council of Medical Colleges in New Zealand

The Ministry of Health has the agreement and support of the Health Funding Authority, the Accident Rehabilitation and Compensation Insurance Corporation, and the Council of Medical Colleges in New Zealand<sup>1</sup> to this document and the implementation process.

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<sup>1</sup> The Council of Medical Colleges in New Zealand is made up of: Australian and New Zealand College of Anaesthetists, New Zealand College of Community Medicine, Royal Australasian College of Physicians, Royal Australasian College of Radiologists, Royal Australasian College of Surgeons, Royal Australian and New Zealand College of Psychiatrists, Royal College of Pathologists of Australasia, Royal New Zealand College of General Practitioners, Royal College of Obstetricians and Gynaecologists.

# Minister's Foreword

New Zealanders want to know that when they have an accident or a medical emergency they will receive the right care, at the right time, in the right place, delivered by the right person. This document provides New Zealand's health providers and funders with a high-level accident and emergency, or acute management, framework that will ensure this aim continues to be achieved.

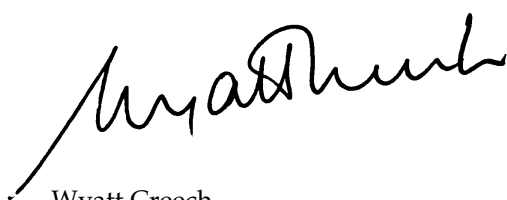
In 1998 the Government released the Hospital Services Plan and a draft Rural Health Policy. The Hospital Services Plan set out clearly how hospital services are organised. It also provided certainty to communities by confirming that the current availability of services would remain in place for three years.

The draft Rural Health Policy signalled the Government's ongoing commitment to the health of rural New Zealanders. It is a recognition that in rural areas, distance, geography, small populations and the limited availability of providers can make access to health services difficult.

This document complements the Hospital Services Plan and the draft Rural Health Policy by recognising that people's urgent treatment needs are best provided when health providers work together. One of the key elements of the framework is the establishment of regional networks. This means that wherever urgent health needs arise, a network of providers will ensure the quickest possible access to the most appropriate place of care.

The development of the framework described in this report has been made possible by the interest and commitment of a large number of health providers and organisations. I look forward to receiving the assistance of health funders, providers and community groups as the framework moves from a concept to an implemented strategy.

Every New Zealander needs to have access to 24-hour acute and emergency health services. I assure New Zealanders that the Government is committed to implementing the strategies outlined in this document to ensure a safe and effective backbone of these services throughout the country.



Wyatt Creech  
**MINISTER OF HEALTH**



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# Introduction

## Purpose of this document

The purpose of this document is to articulate the key principles and components of a system which will enable all New Zealanders to gain timely and appropriate access to acute personal health services.<sup>2</sup> Acute personal health services comprise those services required to manage:

- trauma
- medical and surgical emergencies
- complicated births.

Timely access to trauma services is commonly acknowledged as being essential to achieving good health outcomes for patients with severe trauma.<sup>3</sup> Furthermore, receiving prompt treatment for all acute health needs is essential to achieving better health outcomes.

This report signals the need to consolidate and improve the current system of delivering acute services. Currently access to acute services is satisfactory but could be significantly improved. This report outlines a high-level framework that can provide the basis of an enhanced acute management system that should be effective, efficient and responsive.

## Problem definition

There are currently a number of deficiencies in New Zealand's acute management services. Most critically, they are not operating in a fully clinically integrated fashion. Examples of this and other problems include the following.

- Not all patients are necessarily referred directly to the nearest hospital that can provide definitive care.
- Clinical decision making about the level of care and the most appropriate form of transport needs to be better co-ordinated in some cases.
- The different arrangements that some agencies have in place can be a barrier to gaining better co-ordination of services. For example, there are multiple agencies involved in contracting for air and land ambulance services, and this could increase from 1 July 1999 with the entrance of insurers into the workplace insurance market.
- The current level of clinical networking is sometimes of a limited scope and scale.
- While a number of protocols and guidelines have already been produced, they are not universally adhered to by all agencies and professional groups involved in the management of acute health needs.
- Ambulance services – especially air – are fragmented. Road and air carriers are often seen as competing services.

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<sup>2</sup> While it is acknowledged that the acute management needs of mental health patients overlap with the needs of people with personal health needs, this paper focuses on personal health only. It is expected, however, that the same principles will apply to mental health.

<sup>3</sup> Royal Australasian College of Surgeons, New Zealand Trauma Committee 1994.

# Conclusions of previous reports

A number of reports written in the last few years not only confirm the existence of the problems identified above, but also provide a valuable foundation for the proposed 'systems approach' to acute management services.

***Guidelines for a Structured Approach to the Provision of Optimal Trauma Care.*** Royal Australasian College of Surgeons, New Zealand Trauma Committee 1994.

The 'Trauma Report' formulated draft national guidelines that defined the level of trauma care services required to deliver best patient outcomes for specified categories of trauma. The report concluded that:

- seriously injured people should be taken directly to a facility identified as having a capability to stabilise or definitively manage severe trauma
- the co-ordination and integration of trauma care is essential and best achieved by establishing regional systems of trauma care overseen by regional emergency care committees
- these systems should involve seamless integration of pre-hospital care, hospital care, and rehabilitation
- the participation of general practitioners in the process of pre-hospital care should be encouraged in appropriate geographical areas.

***A National Air Ambulance Network for New Zealand.*** ACC and Combined RHAs 1996.

The key recommendations of this report were that:

- a National Regional Trauma Management Co-ordinating Committee and five regional committees should be formed to ensure a co-ordinated national approach to trauma management and the integration of pre-hospital emergency services into that system
- a network of air ambulance services which is fully integrated with road ambulance services should be created, and it should reflect the needs of a New Zealand trauma system.

***Tertiary Health Services in New Zealand.*** Ministry of Health 1995.

The purpose of the tertiary services review was to propose the most appropriate configuration of tertiary health services for New Zealand. It did this by examining the relationship between throughput volumes and quality, balanced against geographical considerations. The configuration of tertiary services is important in planning an acute management system because it determines the number of tertiary sites. It also assists in identifying which sites are the most appropriate to form the 'hubs' of any new system.

***Hospital Services Plan: Securing better hospital services into the future.*** Minister of Health 1998a.

The *Hospital Services Plan* outlined where hospital services are currently provided and where they will continue to be provided for at least the next three years. The plan sets out the objectives that need to be considered and balanced when planning hospital services. It also provides a framework consisting of five different levels of hospital facility. These levels are:

- health centres, which vary in size and scope (most offer primary and community health services and they may have inpatient beds for continuing care or low-risk births)
- sub-acute units, which provide inpatient medical beds and day surgery

- secondary hospitals, which can cater for most of the local population's needs on a 24-hour basis
- lower level tertiary hospitals, which provide all the services of a secondary hospital as well as a greater number of sub-specialties
- higher level tertiary hospitals, which provide all the above and, in addition, can have neurosurgery, burns/plastics, spinal, bone marrow, cardiothoracic, adult liver transplants, renal transplants, the most specialised neonatal units and forensic mental health services.

*Rural Health Policy: Meeting the needs of rural communities.* Minister of Health 1998b.

This consultation document is an acknowledgement of the special needs and difficulties of rural communities in accessing health care. Key aspects of the Government's rural health policy include:

- enabling rural people to receive effective front-line care in their own community
- organising services around people and their needs, not around bricks and mortar
- using technology when possible to reduce isolation
- establishing effective alliances and networks between providers.

There have also been a number of important and relevant reviews undertaken in other countries.<sup>4</sup>

## Involving stakeholders in the development of the acute management system

This report is the culmination of extensive consultation with the health sector. In early 1998, a clinical working group was established to consider the optimal location and organisation of 24-hour acute/emergency services. A report was then completed and circulated for comment. An updated draft was released for a limited review in November 1998.

In rewriting this document, the authors have attempted to take account of all the comments made. This has not always been possible if conflicting views were received. Those who have provided input at some point in the process are listed in Appendix 1.

## A way forward

Additional work is clearly required to plan and implement the enhanced 24-hour clinically integrated acute management system. A way forward and a work programme have been outlined in this report and will continue to be developed in conjunction with agencies such as the Ministry of Health, the Health Funding Authority and the Accident Rehabilitation and Compensation Insurance Corporation and, crucially, with as many provider groups and organisations as possible.

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<sup>4</sup> For example, The Scottish Office, Department of Health 1998; Audit Commission, United Kingdom 1996; National Road Trauma Advisory Council, Australia 1993.

# The Proposed Acute Management System

## Aim

The aim of the acute management system is to ensure the best possible outcome for people who need to access emergency services. For this to occur:

**it is essential that people get the right care, at the right time, in the right place from the right person.**

*Right care* = care that brings appropriate resources and skills for optimal management of a patient's health need.<sup>5</sup>

*Right time* = the time within which appropriate care should be provided in order to prevent, if possible, adverse physiological consequences and unnecessary complications. In pre-hospital and early hospital care the term 'golden hour' has been used to encapsulate this concept. (The 'golden hour' is, however, a more notional than evidence-based concept.) The aim is always to ensure that a patient receives treatment as quickly as possible so that the optimal outcome can be achieved.

*Right place* = a facility that has the capability to provide a level of complexity of service appropriate to the specific patient's health needs.

*Right person* = the person with the most appropriate competency, training and skills to manage a patient's needs.

## Requirements for optimal operation of the acute management system

The above aim can only be achieved if a systems approach that ensures the efficient integration of all components of the service is used. Such an approach has the following requirements:

- an overall systems design
- an integrated communications network
- common standards and protocols
- comprehensive and integrated provision of all key components
- a team approach to the development and operation of all aspects of the system
- improved information systems to allow sound performance monitoring and continuous improvement.

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<sup>5</sup> The definitions of 'right care' and 'right time' are derived from Royal Australasian College of Surgeons, New Zealand Trauma Committee 1994.

# Critical features of the acute management system

The acute management system will consist of a number of complementary components, that together should provide a patient-focused, seamless service.

The system will consist of five regional networks, building upon many elements that are already in place. The system will incorporate all hospitals and providers involved in trauma and emergency work within a defined geographic region. At the 'hub' of each network will be one of New Zealand's five tertiary centres (Auckland, Waikato, Wellington, Christchurch and Dunedin). The 'spokes' will extend out through secondary hospitals and sub-acute units to health centres and all rural health professionals. Providers will work together to ensure that patients get to the nearest place capable of providing definitive care as quickly and safely as is reasonably practicable. Networks will also need to work together at a national level.

The system will also incorporate all emergency transport providers. Access to the right vehicle will be determined by what is known about the needs of the patient, weather conditions and geography. Patients need to be able to access an emergency response system via a 111 telephone call.

Best practice will be guided by nationally consistent and agreed protocols, guidelines and standards. All professionals will be provided with appropriate formative and ongoing clinical education and training.

Clinically integrated networks and national consistency should not, however, prevent the development of local solutions nor the introduction of innovative practice. It is also important to recognise that there are many leading examples of good practice currently occurring that can be adapted and used elsewhere: the wheel does not have to be reinvented.

In summary, the eight features that are critical in achieving the aims of the acute management system are:

- establishment of regional networks
- delivering patients to the nearest hospital capable of providing definitive care
- capability for 'rescue'
- integration of all services
- appropriate emergency transport systems
- agreed protocols, guidelines and standards
- workforce development
- access to telecommunications and emergency response.

# 1. The establishment of regional networks

Regional networks are essential to the provision of comprehensive acute management services.

**The *Acute Services Review Report* of May 1998, undertaken by the Scottish Office of the Department of Health, has a good description of how a network could operate:**

**‘The term “network” implies that care is delivered seamlessly by a chain of interconnected people and operations, and it is the relationship between these people which forms the very structure of the network and governs its operation ... Networks can therefore be characterised as “virtual” service organisations, where the skills of the professional concerned are grouped around the population and service needs, and may not be co-terminous with Trust or Health Board boundaries ... The network should be seen as a dynamic system, the design and function of which can change as relationships develop and as medicine advances.’**

The Ministry recommends that five regional networks be established. Each network will incorporate all hospitals and providers involved in trauma and emergency work within a defined geographic region. At the ‘hub’ of each network will be one of New Zealand’s five tertiary centres as defined in the *Hospital Services Plan*: Dunedin, Christchurch, Wellington, Waikato and Auckland.

The ‘spokes’ will extend out through secondary hospitals and sub-acute units to health centres and all rural health professionals. Regional networks need to include a range of service levels so that the people living anywhere within a region are linked into a comprehensive range of services. Networks will also have to co-operate at a national level to take account of services that are only provided in one or two centres in New Zealand.

## Definitions of hospital service levels

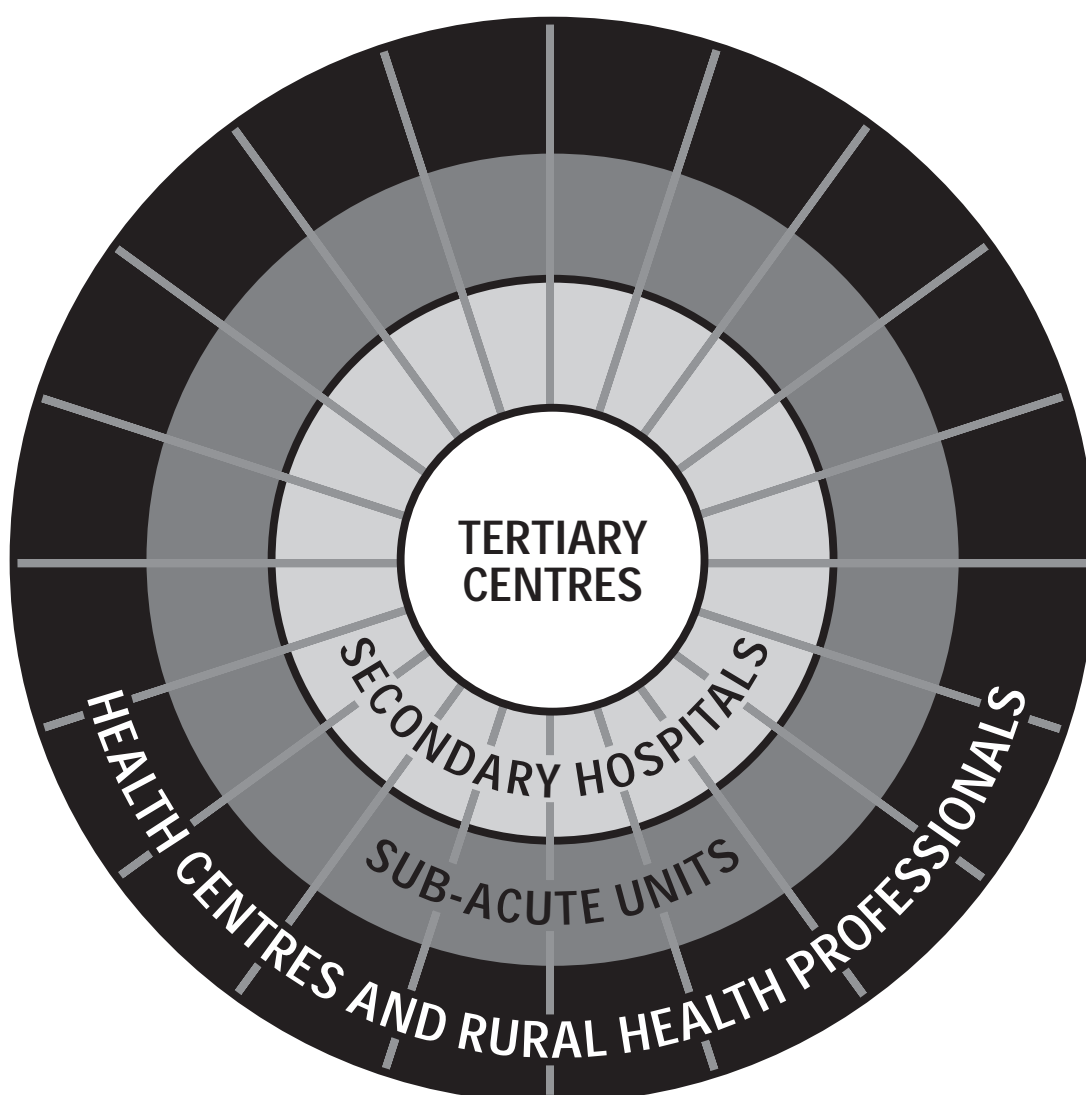
The categorisation of hospitals according to their capability to manage acute health needs is essential in a system based around regional networks. The *Hospital Services Plan* ranked hospitals into five categories according to the complexity of the procedures they carry out and the type of emergency care they provide. The different service levels described in the *Hospital Services Plan* will therefore be used to categorise a network’s hospitals.<sup>6</sup>

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<sup>6</sup> The link between 24-hour care and sub-acute and elective services is discussed in the wider context of the *Hospital Services Plan*.

The following hub-and-spoke diagram describes a regional network of acute management services. The lines represent the linkages between the various hospital levels and pre-hospital services. The linking of all the service levels together demonstrates the transferral of patients directly to a place that can provide definitive care, and the integration of all services involved in the management of acute health needs.

### Regional network of acute management services (hub and spoke)



The concept of a regional network is currently being practised, to a significant degree, by the Midland Regional Trauma Service:

- **Waikato Hospital is the hub and can be a place of definitive care for nearly all Midland residents (6 percent of severe head injuries are transferred to Auckland for definitive surgery).**
- **Rotorua and Tauranga Hospitals are secondary hospitals and can handle most conditions but have to refer patients for some tertiary services. In general, most acute patients can receive definitive care at these hospitals.**
- **Sub-acute hospitals in the area, such as in Taupo and Taumaranui, immediately refer major cases to one of the secondary hospitals or Waikato Hospital, as appropriate.**
- **A well co-ordinated ambulance service is supported by pre-hospital and intra-hospital retrieval teams. These teams respond to patients with severe injuries either at the scene or from other hospitals. All patients are entered into a trauma database which is used for review at regular meetings.**

## Role delineation

Role delineation is a classification system which describes the level of complexity of a clinical service by considering support services, staff profile, minimum safety standards and other requirements necessary to ensure that clinical services are provided safely, and are appropriately supported.

The role delineation table found in Appendix 2 has been developed for emergency departments by the Australasian College of Emergency Medicine. The various hospital-level descriptions have been changed to reflect the *Hospital Services Plan*. The service levels described are indicative only, and in general are broad banded to allow providers freedom in planning configurations suited to the health needs and preferences of local communities. However, tighter parameters are set around the bottom and top levels of service complexity. It should also be noted that at the health centre end of the scale, there may not always be a facility available and therefore this level could include a variety of alternative arrangements.

The role delineation table for emergency departments should be read in conjunction with the Role Delineation Model (RDM),<sup>7</sup> the Role Delineation for Emergency Departments (RDED),<sup>8</sup> the *Hospital Services Plan* and the Tertiary Services Review.

<sup>7</sup> The Ministry of Health acknowledges the concerns expressed that the RDM is overly mechanistic in its matching of support service complexity levels with basic clinical service complexity levels. It has been advised that trauma specialists in Australia and New Zealand do not believe that this model is entirely appropriate for the New Zealand geography and staffing levels: 'while the principles can not be criticised, allocating New Zealand hospitals into this model, as far as trauma is concerned, is less appropriate than in the three-tiered model proposed by the RACS New Zealand Trauma Committee' (personal correspondence). However, the Ministry of Health considers that as long as the RDM is not applied too prescriptively, it gives a very useful indication of the range of services required to ensure safety.

<sup>8</sup> The RDEM is a guide to role delineation for Australasian Emergency Departments, and is published in Australasian College of Emergency Medicine (1998).



## **2. Delivery of patients with acute health needs to the nearest hospital capable of providing definitive care**

The centres that can provide definitive care are those with the most appropriate staff and facilities to improve overall patient outcomes, and which, in most circumstances, can be reached within the 'golden hour'. Weather conditions and geography may mean that, occasionally, this option may not be possible.

It is expected that only a small number of patients will need to travel long distances and that, except for services that are only provided in one or two centres in New Zealand, most of this travelling will be contained within a region. The majority of patients will still be managed definitively in the facility closest to the place where the emergency occurs.

Treating patients at a hospital capable of providing definitive care improves:

- the timeliness of treatment, by cutting out unnecessary stages in assessment, diagnosis and treatment
- the quality of treatment, as the patient is dealt with by a hospital that has the capability to provide a level of complexity of service appropriate with a patient's health needs.

Timely and accurate clinical opinions are crucial in achieving both the 'right time' and 'right place' aims. The current process of gaining an initial clinical opinion on a patient's condition needs to be improved; for example, by having a telecommunication link with a hospital emergency department. This clinical opinion determines the level of hospital the patient will be transferred to and, if appropriate, the form of emergency transport that is most appropriate.

This component is important to prevent patients from having to be admitted to a number of hospitals before reaching a centre that can provide definitive care.

## **3. Capability for 'rescue' through resuscitation and stabilisation**

There needs to be appropriate and timely access to resuscitation and stabilisation services for all emergency and trauma patients. It may be necessary for a patient to be treated by a group of professionals or at a facility that can provide rescue services instead of being transferred directly to a hospital for the purposes of receiving definitive care. For example, a patient who is critically ill may need to be stabilised before they are transported to a place which can provide definitive care.

Protocols need to be established to determine when and how the decision is taken to move a patient to a hospital where definitive care can be provided, and who is responsible for making that decision.

## **4. Integration of all the services involved in the management of acute health needs**

In each regional network there should be seamless integration of:

- pre-hospital care
- emergency transport (both air and land)

- hospital-based services, both between hospitals of varying complexity levels and within hospitals. For example, patients should have a smooth transition between hospitals or between an emergency department, intensive care and definitive surgical and medical care.

The purpose of integration is to ensure that services are patient-focused, comprehensive, delivered in a timely fashion and provide quality care.

There should be co-ordination, collaboration and communication between traditional healthcare providers and funders and other agencies such as the police, fire, civil defence, search and rescue and the military.

While one of the purposes of integration is to avoid duplication, it is recognised that co-response to an incident may be necessary to achieve the best health outcomes for a patient. For example, members of the Fire Service are often able to provide emergency care until an ambulance arrives.

It is also important that integration does not inhibit flexibility in the approach and mode of service delivery, especially in rural areas where there are special challenges caused by distance, geography and population size. Thus there needs to be flexibility in maximising the effectiveness of current skills and expertise so that the focus is on the competent and safe delivery of a service and not on a health professional's title. For example, in rural areas, midwives could be used to assist ambulance officers, or practice nurses could be used in a rural nurse practitioner capacity, or general practitioners and paramedical staff could give thrombolysis (streptokinase) to patients undergoing a heart attack. Because patient health outcomes improve the earlier this treatment is provided to the patient, there is no sense in waiting until the patient gets to a hospital. This treatment is used successfully in the remote areas of Scotland.

To achieve this sort of flexibility we need to ensure that health professionals are both competent and supported.

**The PRIME (Primary Response in Medical Emergencies) scheme aims to ensure high quality access to medical emergency treatment. The scheme funds general practitioners and practice nurses to attend emergencies, and gives them extra training, emergency equipment and supply kits. The scheme is a good example of different agencies working together as it has had the support of ACC, the HFA, the New Zealand Rural GP Network, and the Order of St John, which has done much of the training and orientation. This scheme will be implemented nationally.**

## 5. An appropriate emergency transport system

Co-ordination of transportation is important in achieving the 'right time' and 'right care' aims. There needs to be a systems approach to emergency transport which recognises that:

- ambulance services need to be configured to meet the needs of the network
- integration of both land and air systems is necessary to ensure that the most appropriate vehicle is sent
- an emergency transport system needs to incorporate a wide range of vehicles, ranging from single-crewed ambulances to fixed-wing aircraft

- providers need to be accredited with service standards set at acceptable international levels
- the process of arranging emergency transport, clinical support during transportation (if necessary) and informing the receiving hospital of the patient's arrival needs to be streamlined
- the care of patients, prior to their arrival at the appropriate facility, needs to be under the control of appropriate clinical staff such as experienced ambulance officers, a skilled health professional or the receiving hospital via telecommunication link, as appropriate
- direct telecommunications access to the receiving emergency department or facility needs to be available
- more ambulances, particularly air transport, need to have child-specific equipment
- the air ambulance network needs to have more than one tier to ensure optimal coverage of the country.

## 6. Agreed protocols, guidelines and standards

The practice of all those involved in the system – whether during pre-hospital care, emergency transport or hospital care – should be guided by nationally consistent and agreed protocols, guidelines and standards. This is necessary to improve the quality, safety and ease of operation of the acute management system. The maintenance of these standards, guidelines and protocols needs to be ongoing, organised and rigorous.

For example, guidelines can assist health professionals in making the decision over to which facility a patient should be sent. The application of guidelines does, however, need to be flexible to make sure that decisions are appropriate to the needs of a particular patient in a particular location.

Emergency departments need to comply with triage guidelines to ensure that all patients are seen within an appropriate timeframe. This must include psychiatric liaison/triage capabilities to assess both mental health and personal health.<sup>9</sup>

Ideally, funding for emergency transport should only go to providers who meet nationally consistent standards and who have achieved a nationally applied accreditation standard.

## 7. Workforce development

Workforce development is required to fulfil the 'right care' and 'right person' aims. The current expertise and skill mix of health professionals also needs to be maximised.

Health professionals need to have appropriate training in emergency treatment at all levels of clinical education. This training needs to be consistent with:

- best practice and the development of guidelines
- the use of advancing technology
- the challenge posed by remote and rural practice
- a changing emphasis on capability rather than health professional title
- current trends in labour market reform; for example, nurse prescribing.

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<sup>9</sup> In recognition that mental health patients will arrive at 24-hour services requiring assessment and treatment of both their mental health and personal health issues, it is imperative that services are capable of providing psychiatric triage. Psychiatric triage can be achieved through the use of psychiatric liaison services and the development of common standards and protocols.

**The Christchurch School of Medicine's Department of Public Health and General Practice, supported by the Clinical Training Agency, is offering a postgraduate interdisciplinary certificate and diploma in primary rural health care. In 1998, 15 nurses undertook the first year of the course and in 1999 it will broaden out to include general practitioners. Part of this course includes training in emergency medicine. Other courses are also being considered, for example at the Dunedin School of Medicine, to assist the development of those working in rural health centres or sub-acute units.**

There need to be quality people-management systems to ensure that professionals, especially those working in rural areas, feel supported and able to remain in practice. Hospital and Health Services also need to have an infrastructure in place to provide their staff with ongoing support.

Access to ongoing clinical education and training needs to be made easier. Currently it is an issue, particularly for those who work in rural areas.

**The Christchurch School of Medicine Department of Public Health and General Practice has a locum support service for practitioners in rural areas. This scheme makes it easier for rural practitioners to get away for study and annual leave.**

Emergency departments should be staffed and supervised appropriately to reflect the complexity of cases that are seen.

Vocational registration and competency requirements for medical officers of special scale working in emergency departments and health centres also need to be developed. The New Zealand Medical Council will be working in collaboration with the Australasian College for Emergency Medicine, other colleges and health employers to achieve this. Other groups, such as accident and medical doctors and ambulance officers, are soon to get specialist registration. The purpose of the registration process is to validate and assess the ongoing competency of these health professionals.

## **8. Access to telecommunications and emergency response**

The public needs to have confidence in the gateways that are used in accessing acute management services. In particular, people need to have access to an emergency response via a 111 telephone call. All 111 calls need to be supported by appropriate call centre technology and have decision support systems in place to ensure that there is an appropriate emergency response.

The use of telephone and computer technology also provides significant opportunities to rural hospitals and health centres. For example, telemedicine is increasingly being used to allow specialist expertise to be more widely accessible. Reading x-rays and CT scans remotely can be of particular value in determining whether or not a patient needs to be transported to another facility or not.

# The Way Forward

This document presents a high-level framework that will be used as the basis for the implementation of the clinically integrated acute management system. This system will be based on the consolidation and development of existing services into five regional networks. There are, however, a significant number of key issues that need to be worked through. These include:

- the identification of all groups that need to be network members
- the identification and elimination of barriers to integration
- the identification of issues thrown up by the system; for example, transport and accommodation needs of family and friends of patients with acute health needs
- the risks to and costs of the system's implementation
- confirmation of hospital service levels, particularly in relation to operative obstetric capability in provincial and rural areas
- the ongoing development and implementation of guidelines, standards and protocols
- the identification of future workforce needs
- the formation of the regional networks
- developing linkages with other relevant work, such as the implementation of the Paediatric Specialist Review.

While the system's concept is simple, its development will be complex. Some implementation tasks can begin almost straight away while others will take years of planning to be achieved. Parallel processes will need to be established.

A large number of key stakeholders need to be involved in the system's development including:

- Ministry of Health
- Health Funding Authority
- Accident Rehabilitation and Compensation Insurance Corporation
- Hospital and Health Services and other health facilities at both the management and clinical level
- rural general practitioners and nurses
- the Ambulance Board and its member organisations
- health professional organisations
- the medical and nursing colleges
- the Clinical Training Agency
- Medical Schools
- other purchasers and providers of emergency and health services
- iwi and Māori providers
- the New Zealand public.

# Implementation timetable

The Health Funding Authority will be the lead agency throughout the implementation process. Its first task will be to establish a joint agency project team whose role will be to support the various teams in completing their appointed tasks. Full implementation of the acute management system will be an ongoing process over a number of years. The following timetable is therefore indicative only, and represents just some of the tasks that will need to be undertaken.

February 1999	Establish National Advisory Team. This team will be representative of the key stakeholder groupings and will oversee the overall implementation of the acute management system. Its first tasks will include designing a full implementation timetable, overseeing the establishment of other teams, defining the principles and criteria that will be used for the establishment of the networks, defining a performance framework, and establishing targets.
March 1999	Establish regional teams to develop the backbone of the first two networks.
March 1999	<p>Establish clinical focus teams to determine or confirm clinical criteria for the following clinical areas:</p> <ul style="list-style-type: none"> <li>• pre-hospital care</li> <li>• hospital care</li> <li>• obstetric emergency care.</li> </ul> <p>The clinical criteria specified will include:</p> <ul style="list-style-type: none"> <li>• guidelines</li> <li>• referral/access criteria</li> <li>• criteria and process for clinical audit</li> <li>• initiatives for clinical improvement.</li> </ul>
1 July 1999	Implementation of first two networks commences.
1 July 1999	Achieve improved integration of ambulance contracting.
1 July 1999	National roll-out of the PRIME scheme.
August 1999	Establish regional teams to develop backbone of remaining networks.
1 July 2000	Commence implementation of last three networks.

# Response to this document

If there are any comments or questions about this document or the proposed way forward please write to:

**'Roadside to Bedside'**  
**Ministry of Health**  
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or fax (04) 496 2342

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# Appendices

## Appendix 1: List of stakeholders who have provided input

The Ministry of Health has appreciated the amount of feedback that the people and organisations listed below have provided. It has not been possible to incorporate everybody's views in this document. While there has been widespread support for the document's proposed framework, the following people and organisations do not necessarily endorse everything stated in the document.

### Clinical Working Group

Lesli Davies, Crown Company Monitoring Advisory Unit

Colin Feek, Ministry of Health

Frances Forbes, Canterbury Health Ltd

Rob Griffiths, National Health Committee

Kingsley Logan, Lakeland Health

Barry Taylor, Consultant

### Discussions with or submissions from:

Health Funding Authority

Accident Rehabilitation and Compensation Insurance Corporation

Crown Company Monitoring Advisory Unit

Department of Labour

Australian and New Zealand College of Anaesthetists

College of Midwives

College of Nurses, Aotearoa (NZ) Inc

Council of Medical Colleges in New Zealand

New Zealand Medical Association

New Zealand Rural GP Network

Northland Health

Auckland Healthcare

Health Waikato

Eastbay Health

Tairāwhiti Healthcare

# Appendix 1: List of stakeholders who have provided input – *continued*

Healthcare Hawkes Bay

Wairarapa Health Ltd

Taranaki Healthcare

Good Health Wanganui

MidCentral Health

Nelson Marlborough Health Services

Coast Health Care Ltd

Health South Canterbury Ltd

Healthcare Otago

Southern Health

Senior medical staff, Eastbay Health

Kaitaia Hospital

The Life Flight Trust

Clinical Medical Advisors, Midland Region

Mike Ardagh, Chair, New Zealand Faculty of Australasian College for Emergency Medicine

Jane Bebbington, Clinical Nurse Educator, Department of Emergency Medicine, Auckland Hospital

Forbes Bennett, Clinical Director of Trauma Services, Healthcare Hawkes Bay

John Chambers, Emergency Medicine Specialist, Dunedin Hospital

John Goldsmith, Paediatric Department, Wanganui Hospital

Ross Grantham, New Zealand Ambulance Board

Jack Havill, Director of Critical Care, Health Waikato

John Holmes, Clinical Training Agency

Sharon Kletchko, Clinical Director Emergency Services, Western Bay Health

Kingsley Logan, Consultant Physician, Lakeland Health

Colin McRae, Clinical Director Urology, Auckland Hospital

Jim McVeagh, Clinical Director, Emergency Services, Southland Hospital

Leanne Samuel, Director of Nursing and Midwifery, Southland Hospital

Peter Stone, Obstetrics and Gynaecology, Wellington School of Medicine

Marjory Van der Pyl, Director of Emergency Medicine, Regional Trauma Director, Health Waikato

## Appendix 2: Role delineation for emergency departments<sup>10</sup>

	T1 Higher level tertiary	T2 Lower level tertiary	S1 Secondary	S2 Sub-acute	Health Centre/Rural and remote
<b>Structure</b>	Sophisticated purpose-designed area with separate resuscitation area having capacity for frequent management of major trauma and other life-threatening emergencies. Capacity for invasive monitoring and short-term ventilation.	Purpose-designed area with separate resuscitation facilities and capacity for assisted ventilation.	Purpose-designed area with separate resuscitation facilities and capacity for assisted ventilation.	Designated assessment and treatment area with separate resuscitation facilities in a rural hospital.	Designated assessment and treatment area in a small hospital.
<b>Nurse staffing</b>	Experienced registered nurses (RNs) on-site 24 hours, many having completed post-basic training. Dedicated nurse educator and clinical nurse consultant. Dedicated nursing director plus nurse unit managers (NUMs) 24 hours.	Experienced RNs on site 24 hours, some having completed post-basic training. Dedicated NUM. Access to clinical nurse educator. Access to clinical nurse consultant.	Experienced RNs on-site 24 hours, some having completed post-basic studies. Dedicated NUM. Access to clinical nurse educator. Access to clinical nurse consultant.	Designated nursing staff available 24 hours, who carry out triage. Designated NUM. Some RNs having completed or undertaking relevant post-basic studies.	Nursing staff from inpatient wards available to cover emergency presentations.
<b>Medical staffing</b>	Full-time medical director with specialist qualifications in emergency medicine, supported by extensive out-of-hours emergency medicine specialist cover (ideally 24 hours, 7 days). Advanced training. Registrars on-site 24 hours.	Full-time medical director with specialist qualifications in emergency medicine, supported by extended-hours emergency medicine specialist cover (ideally 16 hours, 7 days). Experienced medical officers with resuscitation training, on-site 24 hours.	Full-time medical director with emergency specialist qualifications supported by extended-hours specialist cover (ideally 16 hours, 7 days). Experienced medical officers, with resuscitation training on-site 24 hours.	24 hours access to medical officers (on-site or available within 10 minutes). Ideally full-time director, preferably with specialist qualifications.	Visiting medical officers or senior medical officer on call.

<sup>10</sup> This role delineation model is the ACEM model, which has not yet been validated in New Zealand. Therefore structures and titles will differ from those used in New Zealand. For example, a Clinical Nurse Consultant is responsible for evidence-based practice, quality, standards and audit. It is a role not widely developed in New Zealand. The definitions used in the *Hospital Services Plan* have been used to define the different levels of hospital, although an exact match is not possible. This model is being used to outline principles only. The roles also need to be widened to include other specialties, such as obstetric and neo-natal emergencies.

## Appendix 2: Role delineation for emergency departments<sup>10</sup> – *continued*

	T1 Higher level tertiary	T2 Lower level tertiary	S1 Secondary	S2 Sub-acute	Health Centre/Rural and remote
<b>Patient care</b>	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.	Can manage all emergencies, including stabilisation and assisted ventilation, and provide team response. May send out teams of appropriately trained staff to disaster site.	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.	Manages a range of acute illness and injury, including resuscitation and limited stabilisation. Provides local trauma service, with stabilisation prior to transfer.	Provides mainly non-scheduled GP services for minor injuries and illnesses. 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.
<b>Access to other specialist consultation</b>	Specialists in intensive care, anaesthesia, paediatrics, liaison psychiatry and medical and surgical subspecialties available on call 24 hours. Access to neurosurgery and cardiothoracic surgery services. Extended hours access to allied health professionals and social workers.	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 workers.	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 workers.	Specialists in general surgery, general medicine, anaesthesia and paediatrics, on call 24 hours. Access to allied health professionals and liaison psychiatry.	Available by phone. May require transfer of patient. Well-organised communication system with referral network. Access to retrieval and transport service.
<b>Access to support services</b>	24-hour availability of pathology, radiology, CT and operating theatres. Ideally, extended hours access to nuclear medicine, ultrasound, interventional radiology, MRI.	24-hour availability of pathology, radiology, and operating theatres. Normal hours access to nuclear medicine, ultrasound. After-hours on-call access to CT and angiography desirable.	24-hour availability of pathology, radiology, and operating theatres. After-hours on-call access to CT and angiography desirable.	Availability of pathology, radiology and operating theatres during normal hours; on-call access after hours.	On-call access to pathology, radiology and operating theatres.

<sup>10</sup> This role delineation model is the ACEM model, which has not yet been validated in New Zealand. Therefore structures and titles will differ from those used in New Zealand. For example, a Clinical Nurse Consultant is responsible for evidence-based practice, quality, standards and audit. It is a role not widely developed in New Zealand. The definitions used in the *Hospital Services Plan* have been used to define the different levels of hospital, although an exact match is not possible. This model is being used to outline principles only. The roles also need to be widened to include other specialties, such as obstetric and neo-natal emergencies.







