

# **Statewide Implications for Rural Service Provision**

**Infrastructure Renewal Planning  
Project for Rural and Remote Areas**

**July 2010**

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# 1 Introduction

The Infrastructure Renewal Planning Project for Rural and Remote Areas aims to provide a comprehensive and prioritised health infrastructure program across 12 sites that better positions Queensland Health to attract and invest resources for rural and remote services. This information will be compiled into a Preliminary Evaluation to be presented to the Queensland Government.

Planning and Coordination Branch are leading the Infrastructure Renewal Planning Project for Rural and Remote Areas in partnership with the Office of Rural and Remote Health, relevant Health Service Districts and Corporate Office units. The Infrastructure Renewal Planning Project for Rural and Remote Areas is developed in three key phases.

Phase 1 aimed to assist Health Service Districts plan for the future through defining a rural model of health service delivery for Queensland as described in *A definition of a rural model of health service delivery: a hub and spoke (service partner) model*.<sup>1</sup> This was endorsed at the 15 March 2010 Integrated Policy and Planning Executive Committee meeting.

Phase 2 aims to apply the rural model of health service delivery as described in Paper 1 to 12 sites—11 prioritised hub sites and one spoke site. A Service Profile will be developed for each of the 12 sites identifying the current level and mix of clinical services provided at each site with a focus on the core services of surgical and procedural, maternity, Emergency Department and general medical. These services will be mapped against the draft *Clinical Services Capability Framework for Public and Licensed Private Health Facilities v3.0*<sup>2</sup> (draft CSCF v3.0) to identify service improvement opportunities. The 12 Service Profiles will be submitted to Integrated Policy and Planning Executive Committee in July 2010.

Phase 3 will review the current infrastructure at the 12 prioritised sites and outline options for addressing the infrastructure requirements to ensure the minimum suite of core acute health services (outlined in Phase 1) can be provided.

As outlined above the Service Profiles are part of a suite of documents prepared in the three phases. As each phase builds on the previous it is important to note that these Service Profiles cannot be seen as a stand alone document and must be read in conjunction with *A definition of a rural model of health service delivery: a hub and spoke (service partner) model* prepared in Phase 1.<sup>1</sup>

## 2 Planning context

### 2.1 Background

The 12 service profiles prepared in Phase 2 of the Infrastructure Renewal Planning Project for Rural and Remote Areas aim to apply the rural model of health service delivery described in *A definition of a rural model of health service delivery: a hub and spoke (service partner) model*<sup>1</sup> to 11 prioritised hub sites and one spoke site. The service profiles will map the current level and mix of clinical services provided at each site against the draft CSCF v3.0. This will include the core services of surgical and procedural, maternity, Emergency Department and general medical services.

This paper and the service profiles are not Health Service Plans and do not provide specific guidelines or strategies for future action relating to health services, rather they provide a current picture of services provided at each of the prioritised sites. Detailed consideration of future health services and capacity requirements will occur if the preliminary evaluation progresses to a business case.

### 2.2 Scope

In *A definition of a rural model of health service delivery: a hub and spoke (service partner) model*, 19 Queensland rural hub sites were identified. Of the 19 hub sites, 14 were classified as primary and five as secondary hub sites. The difference between primary and secondary hub sites is the level of health service activity and the role of the hub site in the District. Ten hub sites were prioritised because of the age and condition of the current infrastructure:

- |                    |                                     |
|--------------------|-------------------------------------|
| 1. Thursday Island | 6. Emerald                          |
| 2. Atherton        | 7. Biloela - secondary hub site     |
| 3. Ayr             | 8. Roma                             |
| 4. Charters Towers | 9. Charleville - secondary hub site |
| 5. Longreach       | 10. Kingaroy.                       |

An additional two facilities were subsequently added to the list: Mareeba Hospital, given its proximity to Atherton Hospital, and Sarina Hospital in the Mackay Health Service District (a spoke site within close proximity of Mackay Hospital). For the purpose of this document these sites will be referred to as the *prioritised sites*.

### 2.3 Policy and strategic context

The service profile is supported by *Towards Q2: Tomorrow's Queensland*,<sup>3</sup> the *Queensland Health Strategic Plan 2007–2012*,<sup>4</sup> the *Queensland Health Services Plan 2011–2026*<sup>5</sup> and various endorsed Queensland Health statewide service plans. These documents articulate the Queensland Government's commitment to improving access to safe and sustainable services and better meeting people's needs across the continuum. In addition, the More Beds for Hospitals Strategy<sup>6</sup> has been used as the basis for describing bed categories.

### **2.3.1 Council of Australian Government Health and Hospital Reform**

In April 2010, the Council of Australian Governments, with the exception of Western Australia, reached an agreement on health and hospitals' reform with the establishment of a National Health and Hospitals Network. The reforms are aimed at improving community health care, public hospital and mental health services and increasing the number of aged care places. It was agreed that the Commonwealth will become the majority funder of Australian public hospitals and that responsibility for hospital management will be devolved to new Local Hospital Networks. These reforms will potentially have a significant impact on the way Australia's, and therefore Queensland's, primary health and hospital systems are funded and managed, but until the reforms are in place their impact is largely unknown.

## 3 Statewide service issues

Phase 2 of the Infrastructure Renewal Planning Project for Rural and Remote Areas revealed a number of common statewide issues which are discussed below.

### 3.1 Surgical and procedural

Surgical and procedural services provided at rural hubs are usually provided as same day services to meet a recognised need in the community. Although these visits are arranged to meet patient needs, they are dependent on the availability of visiting specialists, travel options and alignment with specialist schedules of the larger hospitals. The frequency of surgical days and volume of surgical and procedural activity varies at each hub site across the state. The volume of activity is dependent on how many specialists visit, how often they visit and the type of activity that occurs as a result of their visit. In addition, surgical and/or procedural services cannot be provided without the provision of anaesthetic services at a draft CSCF v3.0 Level 3. Visiting surgical specialists need to be either accompanied by a specialist anaesthetist or have an anaesthetist available at the site.

This service model, where specialists fly in/fly out or drive in/drive out, often means that visiting specialists may not be available to provide patient after care, or to respond to emergency situations postoperatively. Intensive care is not available at these hospitals and if higher level care is required postoperatively the patient will need transfer to a hospital providing the needed level of care. All services will have local risk mitigation strategies, including the establishment of transfer protocols to higher level services, however, these may not be formalised.

The layout or placement of surgical treatment areas in rural hub sites is often outdated, with dysfunctional Operating Theatre Suites unable to accommodate current surgical functions and processes. Stage 2 recovery areas are often in other clinical areas and may not be located in close proximity to theatres and medical staff. Recovery spaces and waiting areas are generally insufficient for the number of patients scheduled on visiting specialist lists, regardless of the frequency of those visits. This presents challenges for managing patient care and can create both patient and staff safety concerns.

Due to scheduling requirements there are often difficulties in providing adequate numbers of treatment spaces. Treatment spaces in the Emergency Department or other areas, including hallways or transit areas, are often used to meet this need. As a result routine care is often disrupted, delayed, or managed in inappropriate places.

There are also workforce challenges—in the last few years many specialists who were willing to travel have retired or reduced the number of clinics for which they will travel. Replacement specialists have become increasingly difficult to identify.

## 3.2 Maternity

Women and their families who live in rural Queensland often need to travel long distances from their homes in order to access maternity services. Many are required to stay in town near the hospital at which they will birth, from 36–38 weeks gestation. Their length of stay in hospital is often longer than for women delivering in metropolitan hospitals, as services are not available close to their homes should a post-natal problem arise. Hospital stays may be further increased if there is no residential accommodation available close to the hospital.

Ideally antenatal and postnatal care should be provided as close to home as possible with both hub and spoke services providing this service. Each hub should provide draft CSCF v3.0 Level 3 maternity services as a core service.<sup>2</sup>

Many of the rural hubs in Queensland suffer from outdated Maternity Departments with dysfunctional layouts, with treatment spaces often too small to meet the requirements for service provision. Additionally, many delivery suites are totally separate from maternity beds and other maternity treatment spaces causing patient and staff safety concerns and work inefficiencies.

Recruitment and retention of midwives to rural hub sites is often difficult, compounded by the fact that some nurses do not want to work with outdated models of care and poor infrastructure conditions. Some rural hubs have developed, or are in the process of developing, models of care to accommodate best practice and local needs. There is funding currently available from the Office of the Chief Nurse to assist with this. However, such improvements are often limited by the current configuration of maternity treatment spaces. This is a common issue across rural hub sites in Queensland.

Recruitment and retention of medical officers, particularly with obstetrics or anaesthetics qualifications, to rural hub sites is often difficult. This is compounded by the fact that training, supervision and upskilling opportunities can be difficult to access in the rural environment. A draft CSCF v3.0 Level 3 maternity service requires that medical officers with obstetrics and anaesthetic qualifications are available 24 hours a day. There needs to be sufficient capacity to backfill and relieve medical officers while on leave or participating in training and upskilling. There also needs to be sufficient capacity to supervise medical officers in training to support recruitment of replacement medical officers.

## 3.3 General medical

Primary medical care in rural towns is generally delivered by resident general practitioners and inpatient and outpatient care is delivered by Queensland Health employees. Specialist care is usually delivered by visiting specialists on an intermittent basis when there is patient need.

Over 70 per cent of doctors working in rural areas are in private practice. However the public health system is an integral and essential component in delivering health services. The best outcomes for rural communities are achieved where there is close cooperation and communication between the public and private sectors.

Although there has been a 4.5 per cent increase in the number of general practitioners in rural and remote Queensland, including areas of geographic disadvantage, many are temporary residents, are not rural proceduralists, are working reduced hours or are about to retire. Training options are then further reduced if there are no or limited general proceduralists available to supervise rural training general practitioners.

As medical practices need to be financially sustainable, increasingly resident rural general practitioners are not seeing new patients and do not bulk bill for their services.

The result is that Queensland Health rural hospitals become the default alternative for primary medical care. This is demonstrated by the rising number of triage category four and five presentations to Emergency Departments in most rural hospitals, despite a lack of corresponding population growth.

As most rural hospitals do not have an Outpatients Department, Emergency Departments routinely provide a broad range of primary medical care, including general practice clinics, nurse practitioner clinics, community health clinics and also provide visiting specialist clinics on designated days. As a consequence, it becomes a challenge to provide adequate consultation space on a regular basis for these primary medical services, particularly when visiting specialists are present.

To address some of the medical workforce shortages in the rural environment, Queensland Health supports the Rural Generalist Pathway which is delivering an increasing supply of junior and senior medical officers for rural and regional areas. Rural generalists have advanced specialist skills mainly in obstetrics, anaesthetics and surgery, however, the numbers in training will not meet demand in all rural towns and hospitals.

### **3.4 Emergency Department**

All rural hub services provide emergency services at draft CSCF v3.0 Level 3. In the draft CSCF v3.0 Emergency Care Centre is the terminology used to describe emergency services at Level 3. However, for the purposes of this document, and in line with the More Beds for Hospitals Strategy,<sup>6</sup> emergency services will be referred to as an Emergency Department.

Most rural Emergency Departments have inadequate treatment spaces and dysfunctional layouts for managing the increasing volume of presentations that hub sites are experiencing. The physical layout of the infrastructure at most hub hospitals does not support best practice models of triage and emergency treatment.

Triage spaces in rural hub sites are inappropriate for operational purposes with many lacking any view of waiting rooms with staff unable to observe waiting patients and act with immediacy when required. Often there is no triage desk or triage is not immediately evident to patients. Due to lack of security many Emergency Departments become thoroughfares, resulting in a lack of treatment spaces that afford privacy to patients.

There are no safe rooms in rural emergency departments where a patient presenting with a mental health problem could be assessed in an environment considered safe for the patient, other patients and staff. Although the rural hubs will not have a specialist mental health service, there is an expectation that patients presenting with a mental health issue will be able to be managed safely until transfer out to a higher level service when required.



At most rural Emergency Departments there are staffing issues because rural hub hospitals do not always staff their Emergency Departments 24 hours a day. Ward staff are often used for Emergency Department activity after hours, as well as being deployed to assist Emergency Department staff when busy. This can lead to patient and staff safety concerns both in the ward and in the Emergency Department. In contrast, because of staffing constraints, Emergency Departments that operate limited hours often use the ward as the Emergency Department after hours, a situation which is detrimental to patients and staff safety, and the ward becomes a thoroughfare at all hours of the night disturbing patients. To maintain safety and functionality of these acute clinical areas, it is evident that a closer connection between ward areas and emergency areas is required, even if this model of staffing is improved.

In addition, most rural Emergency Department space is also used as an Outpatient Department. This becomes a problem when visiting specialists make use of all available consultation rooms. This is particularly apparent when the numbers of triage category four and five presentations make up the majority of presentations to rural Emergency Departments and the consultation rooms are required for routine activity.

### **3.5 Conclusion**

It is essential that all core services are planned and coordinated to ensure that staffing and supporting services are available to meet the minimum requirements as defined in the draft CSCF v3.0. In order to implement the recommendations from Phase 1 of this project to support all hub hospitals to provide Level 3 surgical and procedural services, maternity services and Emergency Department (as described in the draft CSCF v3.0) investment will be needed to ensure each hub site:

- meets minimum clinical staffing requirements
- applies appropriate clinical guidelines and governance reflecting accepted standards of care
- has available appropriate infrastructure, equipment and clinical support services
- establishes referral protocols.

## 4 Service profiles

### 4.1 Clinical service capability

The *Clinical Service Capability Framework for Public and Licensed Private Health Facilities Version 2.0*<sup>7</sup> is currently being revised by Queensland Health. The revised version draft CSCF v3.0<sup>2</sup> is expected to be endorsed by December 2010 and will include six levels of service capability (Attachment A).

To inform the service profiles clinical services have been mapped against the draft CSCF v3.0 (as at December 2009) to produce a service capability gap analysis for each prioritised site. This assessment is indicative only, based on the information available at the time, and will be formally reviewed against the draft CSCF v3.0 when it is endorsed.

### 4.2 Methodology

Endorsed Queensland Health service planning benchmarks have been used for calculating the number of beds required. Where these are not available the Victorian Normative Benchmarks have been used. Careful consideration has been given to the application of the benchmarks in the rural health service environment.

Future requirements for overnight and same-day beds have been developed using activity projections from the acute Inpatient Modelling tool (aIM). The aIM tool is endorsed by Queensland Health to provide projections for inpatient separations and beddays based on hospital activity data. The aIM projection data provides for acute activity but does not provide procedural activity, sub- and non-acute care, mental health, and outpatient same day activity (including chemotherapy). The methodology used to project this activity has been outlined in the relevant sections. As a result, only acute activity is included in the overnight bed projections. Beds have generally been calculated by incorporating Queensland Health endorsed service planning occupancy rates adapted for the rural health service environment.

Rural hospitals often have relatively low-average annual bed occupancy rates. These rates are low to allow for the impact of peak occupancy rates on days when visiting specialists are present. Peak occupancy rates are not always evident as bed counts are done at midnight and most of the visiting specialist activity is done as same day, only two to three days a week. In addition, the endorsed benchmarks (85% occupancy rate) will not enable growth in services or efficient management of visiting specialists until there is infrastructure change or improvement. As a result, the Steering Committee for the Infrastructure Renewal Planning Project for Rural and Remote Areas decided that the previous occupancy rate of 70 per cent for overnight activity in rural facilities should also be applied as a comparison for calculating future bed requirements.

Population benchmarks for mental health, palliative care and rehabilitation have not been used. There are no designated bed types in rural hospitals as all overnight beds are multipurpose and can be assigned locally for specific use, including mental health, palliative care and rehabilitation.

Hospital treatment spaces are defined using the following four categories from the More Beds for Hospitals Strategy.<sup>6</sup>

- Category A: Beds:
  - A1 overnight beds
  - A2 same-day beds
  - A3 bed alternatives
- Category B: Emergency Department treatment bays
- Category C: Operating and intervention rooms
- Category D: Consultation/treatment/procedure rooms.

#### **4.2.1 Surgical and procedural**

Visiting specialists—some of who may arrive on the same day— require consultation rooms and Operating Theatres to provide services (refer 3.1).

As mentioned in Sections 3.3 and 3.4, there is generally no designated space allocated for Outpatient Departments in rural hospitals. As a result, it becomes a challenge to provide additional consultation rooms for visiting specialists.

Consultation room need has been calculated using a combination of activity including primary medical services, population growth and specialist visits' clinic sessions and average length of visit (20 minutes). Additional consideration has been given to the minimum number of rooms required by each visiting specialist. These rooms would then be used for other local outpatient services on the days when there are no visiting services.

Adequate numbers of beds/bed alternatives are also required for scheduled theatre and procedure lists. The number of beds/bed alternatives required for the activity generated by a visiting service needs to meet the requirements of the specialist/s on the day of visit, and varies between rural sites. Therefore, when calculating the number of rooms required for a specialist visit, an actual count of consultation rooms and beds/bed alternatives required on the day is needed. This is over and above the number required on any given day for routine activity. For surgical and procedural services the following methodology has been applied:

- acute overnight services operate for a site – specific number of days of surgical activity a year at 85 per cent occupancy. Occupancy rates of 70 per cent have also been included (as per section 4.2, at the request of the Project Steering Committee)
- acute same day services operate for a site – specific number of days of surgical activity a year (which will be < 250 days) to accommodate an average 1.7 patients a day (occupancy rate will be 1 if the list is only a half day list). This applies to both paediatric and adult services
- paediatric overnight admissions operate for a site – specific number of days of surgical activity a year at 75 per cent occupancy rate. As with adult services, occupancy rates of 70 per cent have also been included (as per section 4.2, at the request of the Project Steering Committee)

#### **4.2.2 Maternity**

Queensland Health maternity benchmarks are under development so the Victorian Normative Benchmarks have been used to calculate the numbers of birth suites required. The bed projections for maternity have been calculated using aIM data. The aIM data uses the Medium Series population projections to calculate the projected activity for bed numbers. Postnatal and antenatal beds have been calculated on maternity services operating 365 days a year at 75 per cent occupancy with consideration for bed requirements on days when there are visiting specialists completing elective surgery lists.

Birth suite activity incorporates both birthing and non-birthing activity at all Levels of service. Where a Level 3 maternity service is provided there should be one birth suite for every 250 births. A second minor delivery suite should be available for multipurpose maternity use. This second delivery suite can be used when there are two women in labour, as an antenatal assessment room, a procedure room for visiting obstetricians/gynaecologists, or for high acuity care prior to transfer out to a higher level service.

Consultation rooms for maternity services have been calculated on a combination of population growth, requirements by the visiting specialist services and growth in outpatient occasions of service.

In conjunction with maternity services, Level 3 neonatal services are required to provide routine care for unqualified babies and qualified neonates who require resuscitation and management while awaiting transfer out, and management of back transferred babies. Additionally, neonates who require low risk care may be managed in this level of facility, either after being born there or as a back transfer from a higher level service. To calculate these cot numbers, the Victorian Normative Benchmarks have been used.

##### **Projected requirements**

There is a need to have accurate birth projections and a rigorous methodology to calculate maternity projections. Birth projections, as outlined in the Medium Series population projections and used in health service planning, consistently underestimate the expected number of live births (even in low population growth areas such as rural health service districts). The High Series population projections for Statistical Local Areas more closely approximate projected birth numbers and current/future fertility rates e.g. 2011/12 birth numbers were reached in 2008.

The High Series birth projections have been included in the profile for information only. However, to calculate future requirements for overnight and same day maternity beds, activity projections from aIM have been used. The aIM tool is endorsed by Queensland Health to provide projections for inpatient separations and beddays based on hospital activity data. Maternity beds have been calculated incorporating Queensland Health endorsed service planning occupancy rates.

#### **4.2.3 General medical**

At most rural hospitals there is inadequate space to accommodate the growing volume of outpatient general medical care. Calculating the requirements for consultation rooms in Outpatient Departments is usually based on inpatient activity in larger metropolitan hospitals. However, this is problematic in rural hospitals as the vast majority of patients remain outpatients, or may be inpatients at a facility providing higher level services before transferring back to their local community.

Numbers of consultation rooms have been calculated using a combination of activity, average time of an appointment, hours of a session, population growth and the visiting specialist's requirements for consultation rooms on the day of the visit (as discussed in 4.2.1). Where an adult inpatient episode of care occurs, beds have been calculated at 85 per cent occupancy rates.

The medical benchmarks used are:

- acute overnight medical services operating 365 days a year at 85 per cent occupancy (have also included 70% occupancy rate as per section 4.2, at the request of the project Steering committee)
- acute same day medical services operating 250 days a year to accommodate an average 1.7 patients a day (adult and paediatric combined).

#### **4.2.4 Emergency Department**

The Australian College of Emergency Medicine Benchmarks have been used in determining Emergency Department numbers.

Treatment places have been calculated using the following interim Queensland Health service planning benchmarks:

- total treatment places – one place per 1,300 annual attendances
- resuscitation bays – one bay per 15,000 annual attendances - minimum of one treatment space
- isolation rooms – one room per 10,000 annual attendances
- triage categories 1–3 and 4–5 are used to differentiate between consult rooms and acute treatment spaces (trolley spaces—not resuscitation cubicles—can also be used as observation beds)
- a range of treatment spaces are required as a minimum to provide emergency patient care including treatments, procedures and plastering
- isolation rooms, mental health, interview and paediatric treatment spaces are included as part of the total number of treatment places where required
- treatment places have not been allocated on the basis of age of patients for rural hub hospitals.

#### **Projected attendances**

Projected Emergency Department attendances are calculated for the hub hospital catchment and reflect recent trends and projected population growth, specifically:

- The rate of growth in Emergency Department attendances between 2004/05 and 2008/09 has been compared with population growth over the same period.
- Where it has been identified that Emergency Department attendances have been increasing at a greater rate than population growth, the identified excess has been added to the projected population growth rate up to 2016 to identify the total expected growth rate in Emergency Department attendances. From 2016 it is assumed that alternative models of care and Queensland State and Federal Government rural health initiatives will be in place and absorb some of the presentations that are currently presenting to rural Emergency Departments.
- The total expected growth rate has then been applied to the base year (2008/09) Emergency Department attendances to project future attendances.

- In some instances, because of data collection processes, the data showing the number of Emergency Department presentations is known to be incorrect, however, there is no way of calculating the deficit.

Most of the rural hub hospitals have demonstrated growth in Emergency Department attendances, which has exceeded population growth. As such, future Emergency Department attendances were projected by applying the projected population growth rate to the base year (2008/09) attendances.

### **4.3 Assumptions**

The development of projections requires planners to make a number of assumptions about the future.

The activity projections used to calculate bed requirements assume:

- no change to current service models or patient flows except where indicated
- no change to public-private service arrangements
- no significant change to visiting surgical services
- visiting specialists require capacity to deliver their services on the day of visiting—a combination of consultation clinics and procedural/operating space
- that scheduling is not always under the control of the site being visited
- rural services generally have lower average bed occupancy rates with peak occupancy rates occurring when visiting specialists are present for scheduled procedural lists (overnight and same day procedures).

## 5 References

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