Service Plan 2010-2020:

Gascoyne Health District

WA Country Health Service – Midwest

Final Version

Endorsed 14th February 2011

Government of **Western Australia**
Department of **Health**
WA Country Health Service

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ACRONYMS

ACAT	Aged Care Assessment Team
ALOS	Average Length of Stay
CAP	Care Awaiting Placement
CHC	Carnarvon Health Campus
CSSD	Central Sterilising Supply Department
DOH	Department of Health
ED	Emergency Department
ERP	Estimated Resident Population
FTE	Full Time Equivalents
GP	General Practitioner
HACC	Home and Community Care
ICT	Information Communication Technology
MPS	Multi Purpose Service
MWCRCC	Midwest Commonwealth Respite and Carelink Centre
OATSIH	Office for Aboriginal and Torres Strait Islander Health
OOS	Occasions of Service
PATS	Patient Assisted Travel Scheme
PPH	Potentially preventable hospitalisations
RFDS	Royal Flying Doctor Service
SJA	St John Ambulance
SRG	Service Related Group
VMP	Visiting Medical Practitioner
WACHS	WA County Health Service

DEFINITIONS

Term	Meaning
Admitted Patient	An admitted patient is a person who has been assessed by the treating clinician as meeting at least one of the minimum criteria for admission and who undergoes the hospital's formal or statistical admission process as either a same day, over night or multiday patient.
Ambulatory Care Services	Any activity that is a *planned* "walk-in/walk-out" in one day presentation to hospital. Examples include outpatients, day procedures, wound care, renal care and dental.
Authorised	Authorised under the *Western Australia Mental Health Act, 1996* to accept involuntary admission to a Mental Health Unit. Unauthorised facilities cannot accept involuntary admissions.
Bed-day	A hospital bed occupied for all or part of a day.
Catchment Area	Catchment area refers to the geographical area that a health service will primarily provide services to. It is usually bounded by one or more local government areas.
Clinical Support Services	Includes services to support the operations of clinical services. Includes Pharmacy, Medical Imaging and Pathology.
Corporate and Support Services	Includes corporate support, Information and Communication Technology (ICT), Supply Department, site maintenance, kitchen services and laundry services.
Culturally secure	Services or facilities that are culturally appropriate and meet local cultural needs.
Functional Model of Care	Service facility/operational ideas and concepts identified during the service planning process that relate directly to the planned model of clinical care. Functional models of care assist to guide the facility design team during later stages of the planning process.
Length of stay	The number of days spent in hospital by a patient for a single admission. Calculated as date of separation minus date of admission.
Model of Care	A model of care is a framework that establishes how particular health care services will be delivered. The model of care stipulates the key features of a service such the key aim/focus of care provided; type of specialist and general services provided; the preferred strategy for patient management and flow; and the relationships required with other stakeholders to deliver care. One of the key features of the Service Plan is the future model of care. The model of care forms the foundation for workforce and master planning.
Multi-day Stay Patient	A patient is deemed to have been overnight or multi-day stay patient if in retrospect, it can be seen that the patient was admitted to, and separated from, the hospital on different dates. Therefore , a booked same day patient who is subsequently required to stay in hospital for one night or more is an overnight patient; a patient who dies, is transferred to another hospital or leaves of their own accord on their first day in the hospital is a same day patient even if the intention at admission was that they remain in hospital at least overnight.
Role delineation	Indicates the level of service provided by a hospital, as outlined in the *Clinical Services Framework 2010 -2020*.

Term	Meaning
Same day patient	A same day patient is a patient who is admitted and separated on the same day. May be either a booked or an emergency patient. A patient cannot be both a same day patient and an overnight or multi-day stay patient at the one hospital. Thus emergency treatment provided to a patient who is subsequently classified as an overnight of multi-day stay patient in the same hospital shall be regarded as part of the overnight of multi-day stay patient episode of care. The category of same day is determined retrospectively; that is, it is not based on the intention to admit and separate on the same date. Rather, a patients is deemed to have been a same day patient, if in retrospect, it can be seen that the patient was admitted to, and separated from, the hospital on the same date. Therefore patients who die, transfer to another hospital or leave of their own accord on their first day on the hospital are included, and booked same day patients who are subsequently required to stay in hospital for one night of more are included. Examples of same day activity include renal dialysis, colonoscopy and chemotherapy.
Separation	*Separation* is the most commonly used measure to determine the utilisation of hospital services. A separation equates to a patient leaving a healthcare facility because of discharge, sign-out against medical advice, transfer to another facility/service or death. Separations, rather than admissions, are used because hospital data for inpatient care are based on information gathered at the time of discharge.
Service Planning	Service planning is a process of: 1. Documenting the demographics and health status of a health service's catchment area; 2. Recording the current status and projected future demands for the health service. 3. Evaluating the adequacy of the existing health service to meet the future demands. The process involves analysis of current and future population and service data and consultation with a range of internal and external stakeholders to develop the future model of care for the services delivered from the identified health campus or site. The key deliverable or outcome of service planning is a Service Plan.
Service Plan	A Service Plan will outline the current and preferred future profile for services operating from an identified health campus or site. It will include the context for service delivery including the population profile, future demand, existing policies and strategies and the preferred future model of care.

1 EXECUTIVE SUMMARY

The purpose of this Service Plan is to establish the health service delivery strategy for the Gascoyne Health District within the WA Country Health Service's Midwest region.

Strategic Directions for Service Delivery

A number of national and state-wide strategic frameworks have guided the planning process for the development of this plan including the establishment of the following strategic directions for service delivery in the Gascoyne:

1. Continuum of care
2. Demand management
3. Focus on non-inpatient care
4. Delivering care closer to home
5. Aboriginal health
6. Aged care services
7. Workforce
8. Partnerships with primary care
9. ICT

Key Features of the Catchment Area influencing Delivery of Services

The Gascoyne Health District incorporates the shires of Carnarvon, Exmouth, Shark Bay and Upper Gascoyne. At the time of the 2006 ABS Census the Gascoyne had a population of 8,887 which is anticipated to grow to over 12,600 by 2021[1]. The town of Carnarvon is the major hub for the Gascoyne with smaller townsites at Exmouth, Coral Bay, Denham, Gascoyne Junction and a remote Aboriginal community, Burringurrah, located 480km east of Carnarvon.

A review of the demography and epidemiology of the District reveals the following key considerations in planning for healthcare services:

- The ageing population (55% growth is forecast in the 70+ age group between 2011 and 2021) will place added pressure on district health services to manage health conditions more commonly seen in older age groups.
- While 19% of the Gascoyne population identified as Aboriginal in the 2006 Census, Aboriginal people account for more than one-third of hospital separations within Carnarvon Hospital.
- One third of Carnarvon's population live in the most disadvantaged 10% of districts in Australia. The level of socioeconomic disadvantage across the District suggests that there are pockets of the community that have difficulty accessing mainstream services, either due to living in remote areas, lack of transport or financial difficulties.

[1] ABS Population Projections Series B+

- The level of remoteness reinforces the need to ensure that health services are appropriately resourced and configured to provide adequate and timely responses to the health needs of the communities.
- The cyclone season runs from mid December to April peaking in February and March. The development of the offshore oil and gas industries, and more recently, the tourism industry in the area has increased the damage potential of cyclones in the district.

Current Service Profile

Healthcare Services within Gascoyne Health District include Carnarvon Health Campus (CHC); a Multi Purpose Service (MPS) at Exmouth; nursing posts at Coral Bay and Burringurrah; a Silver Chain nursing post at Denham; a range of community based services, including population health and mental health services; and a number of 'health partners'. The Carnarvon Medical Service Aboriginal Corporation (CMSAC) is a key health partner who provides healthcare services to the Aboriginal people residing in Carnarvon and surrounding areas.

CHC is regarded as an Integrated District Health Service and provides support to the smaller hospitals and remote clinics within the district. For more specialised care, patients are referred to the Midwest Regional Resource Centre in Geraldton or to metropolitan tertiary hospitals.

Carnarvon Hospital currently provides 25 acute inpatient beds via an integrated General Ward. This ward includes ten day beds, a dedicated palliative care bed and a four bed maternity wing. The hospital also provides a 16 bed residential aged care wing which includes a dedicated respite bed. Carnarvon manages the majority of the demand for inpatient services within the District (77% in 2008/09). Exmouth MPS manages the remainder of the inpatient activity through eight inpatient beds. Exmouth is the only other facility in the District that currently provides residential aged care places with three residential care beds, including one respite bed.

Proposed Directions for Service Delivery

An analysis of the healthcare services provided across the District has led to the development of proposed models of care for each service area. The following overarching priorities have been developed:

- Explore the notion of a 'one stop shop' for all ambulatory type health services as a way of integrating operations and assisting the patient to navigate the continuum of care, particularly for those patients presenting with multiple co-morbidities.
- Collaborate with health and community partners to increase awareness of health promotion issues and chronic disease management.
- Introduce models of care that improve access to services for groups who have difficulties accessing acute and primary health care services (e.g. rural and remote communities; elderly; young mothers; Aboriginal communities and those living with a disability).
- Enhance Aboriginal health initiatives consistent with 'Closing the Gap' and other local priorities and build the capacity of Aboriginal health initiatives by attracting and retaining positions and leadership roles for Aboriginal people.

- Improve the level of integration and cooperation between the Community Mental Health Team, Alcohol and Other Drug Team, GPs, Geraldton based psychiatrists and other stakeholders to better meet the acute care needs of mental health patients across the Gascoyne.
- Provide staff assisted renal dialysis in Carnarvon through a four chair satellite outreach service (WACHS Renal Dialysis Plan 2010-2021).
- Develop a two chair public dental service in Carnarvon and expand the existing service at Exmouth to two chairs.
- Explore the feasibility of introducing a dedicated midwife service at Carnarvon, along with Cancer Care and Aged Care Coordinators for the District.
- WACHS to enter into a Multi Purpose Service (MPS) agreement with the Commonwealth Government for the provision of residential aged care services in Carnarvon. This will be dependent on the allocation of adequate capital funding from the WA Government. Recurrent MPS funding would be provided by the Commonwealth.

The strategic directions for service delivery outlined in this Service Plan will enable the Gascoyne Health District to better manage demand for services, improve efficiencies in patient care, meet the needs of the local catchment area and ensure alignment with existing policies and strategies.

The Plan will also assist in informing the development of future business cases for the potential redevelopment of services. Ongoing planning processes will need to address the current and forecast rate of population growth across the region and explore opportunities for public, private and non-government partnerships. In addition, it is recommended that a 'community engagement' model is adopted as the project progresses to ensure the development of culturally secure services for all Gascoyne residents.

2 INTRODUCTION

2.1 Purpose

The primary purpose of this Service Plan is to provide the service delivery strategy for the delivery of health services to the catchment area of the Gascoyne Health District, part of the WA Country Health Service's Midwest region.

The Service Plan is a guide for service development until 2020. The Plan should be regularly monitored and reviewed to ensure services are responsive to the changing demographics and needs of the Gascoyne catchment area, policy developments, medical advancements and available recurrent funding.

The planning processes undertaken to develop this document form the initial step in establishing an optimal strategy and master plan to potentially redevelop WACHS Gascoyne Health Services, including the Carnarvon Health Campus. The ultimate goal in any future service development will be to provide optimal services and facilities that support and enable the future model of care for health services as described in this Service Plan.

2.2 Objectives

The objectives of this document are to:

- Outline the planning context for the development of this Service Plan and the strategic directions for service planning within the Gascoyne District;
- Provide an overview of the catchment population including the demography and epidemiology of the area;
- Outline the current scope of health care services in the Gascoyne, including the external services that work in partnership with WACHS;
- Define the current and projected demand for healthcare services across the catchment area and establish the key directions for future health care delivery in each service category; and
- Outline the range of factors that will influence the ability to implement the proposed service delivery strategies and models of care.

2.3 Consultation Processes to Develop the Service Plan

The consultation process undertaken in the development of this service plan involved the following key activities:

2.3.1 Meeting with WACHS Area Program Leads (August 2010)

The service planning consultants engaged with the WACHS Area Programme Leads at the commencement of this project to discuss their role in providing advice on strategic directions, innovations and service models that will assist in guiding development of the Service Plan.

Written information was requested from each Program Lead relating to the following:

- Strategic state and national policy directions for the relevant program area including links to or provision of relevant documents where available.
- Key strategic service directions and service priorities for WACHS over the next few years in relation to the relevant program area which are not already contained within the WACHS Strategic Plan - Revitalising Country Health Service.
- The key elements of contemporary service delivery models for the relevant program area.

2.3.2 Round 1: Consultation and Service Planning Workshops and Site Visits (6th – 9th September 2010)

This visit to the Gascoyne region included the following:

'Kick off' meeting:

This meeting included members of the Project Working Group, Senior Managers at a Regional and District level and senior managers from Carnarvon Hospital, Exmouth MPS, Population Health Services and Community Mental Health.

The purpose of the kick-off meeting was to:

- introduce Aurora and the role of Aurora in developing the Service Plan;
- describe how the Service Plan fits into the greater WA Health planning process;
- outline the consultation process and expectation of workshop participants; and
- answer any questions on the Service Planning process.

Carnarvon and Exmouth Workshops

Staff from clinical, clinical support, patient support, administration and facility management areas were invited to participate in structured user group workshops facilitated by the service planning consultants. A standard format was used for each group with set questions that elicited responses relating to what aspects of service delivery currently work well in the Gascoyne, the identified shortcomings associated with health service delivery in the district and how services could be improved. These workshops also provided an opportunity to raise staff awareness of the service planning process and the project givens and constraints.

A service planning questionnaire was distributed to local staff prior to the workshops. The questionnaire invited staff to comment on the aspects of service delivery that are working well, current issues and challenges facing the local area, gaps in service delivery and suggestions for strategies to improve healthcare service delivery for local residents.

Carnarvon and Exmouth Consultation Meetings

External Health Partners, representing the Carnarvon Medical Service Aboriginal Corporation (CMSAC), Fire and Emergency Services, Royal Flying Doctor Service, St John Ambulance Service, Police, Silver Chain, Carnarvon and Exmouth Shire representatives, the General Practice Networks and General Practitioners were invited to structured workshops where the service and facility planning process was described and their input sought.

In addition to this, the Operations Manager conducted two workshops with external stakeholders to brief and engage them on the service planning process. One of these briefing workshops was held in the local MPs office and one at the local senior citizens centre.

2.3.3 Round 2: Feedback and Validation meetings (11th – 12th October 2010)

The analysis of data collected from the round one user consultations was presented to Gascoyne staff, including Exmouth and Carnarvon staff, during a series of validation meetings held, in Carnarvon, on 11th and 12th October 2010.

Approximately twenty key staff, from round one, attended the validation meetings where the 'Gascoyne Health District Service Planning - High Level Summary of September 2010 Workshops' was discussed. The key issues were supported by all attendees. There were two additional issues identified by staff, which were a) the need for a Diabetic Educator in Carnarvon and b) the growing demand for cancer patients being managed and supported in the community while they receive their treatment 'closer to home'.

The key issues from round one and the additional issues from the validation meetings have been addressed further in this Service Plan.

3 BACKGROUND: PLANNING CONTEXT AND STRATEGIC DIRECTIONS

3.1 National, State and Local Health Policy

Planning for the WACHS Midwest region has been guided by a range of National, State and Local Government policies, including:

- A National Health and Hospitals Network for Australia's Future - Delivering the Reforms.
- Health Activity Purchasing Intentions 2010- 2011
- WA Health Clinical Service Framework 2010-2020;
- WA Health Network Models of Care;
- WACHS Strategic Plan, Revitalising Country Health Service 2009-2012;
- Primary Health Reform in Country WA 2010-2012;
- Operational Plan 2010/11 WA Country Health Service; and
- WACHS Midwest Clinical Services Plan (2008)

These reform policies acknowledge that meeting future demand is not purely about increasing the capacity of facilities. Meeting demand is moreso reliant on reconfiguring service delivery to ensure patients are managed more efficiently and safely.

3.1.1 A National Health and Hospitals Network for Australia's Future - Delivering the Reforms

This report, released in July 2010, outlines a National plan for health reform for Australia. The document outlines Government activities over coming months and years, including timelines and major milestones to implement the reforms agreed by the Council of Australia Governments (COAG) in April 2010.

Key components of the health reform program include:

- The Commonwealth will become the dominant funder of hospital services and have full policy and funding responsibility for general practice (GP), primary health care and aged care.
- The Commonwealth will leverage its funding responsibility to deliver more coordination, control and accountability at a local level.
- Central to these reforms is a focus on prevention, improved health outcomes for Australians and better availability and delivery of their care.
- A national performance, funding and reporting framework will be implemented to make the system more transparent and drive improvements across all aspects of the health care system.
- Implementation of the reforms will be driven across eight streams: Hospitals, Primary Health Care, Aged Care, Mental Health, National Standards and Performance, Workforce, Prevention, and eHealth.

All signatories to the National Health and Hospitals Network Agreement have affirmed that the implementation of this reform will be underpinned by the following principles:

- an effective health system that meets the health needs of the community requires coordination between hospital care, GP and primary health care and aged care to minimise service duplication and fragmentation;
- Australians should be able to access transparent and nationally comparable performance data and information on hospitals, GPs and primary care, aged care services and other health services;
- governments should continue to support diversity and innovation in the health system, as a crucial mechanism to achieve better outcomes;
- these reforms should be delivered with no net increase in bureaucracy across Commonwealth and state and territory governments, as a proportion of the ongoing health workforce;
- all Australians should have equitable access to high quality health care, including those living in regional and remote areas; and
- Australia's health system should promote social inclusion and reduce disadvantage, especially for Aboriginal Australians.

The full list of recommendations can be viewed at: *http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/DeliveringTheReforms*

3.1.2 Health Activity Purchasing Intentions 2010 – 2011

WA Health has embarked on an Activity Based Funding (ABF) and Activity Based Management (ABM) reform agenda. This programme will be implemented over the next three years.

ABF means that health services will be funded based on expected activity

ABM is the approach that WA Health will use to link planning, budgeting and funding allocations, plus manage future activity and the provision of financial resources to meet future real health need.

3.1.3 WA Clinical Services Framework 2010-2020

Service and facility planning should also align with the new WA Clinical Services Framework 2010 -2020 which provides a guide for planning health care services throughout WA. The framework:

- describes the role delineation for metropolitan and WACHS hospitals (excluding WACHS small hospitals);
- defines the projected bed numbers for metropolitan and WACHS hospitals to 2021 (excluding WACHS small hospitals); and
- outlines additional National, State and bi-lateral policies pertinent for service and facility planning in WA.

The Framework clearly defines the types of services to be delivered at each site. Carnarvon Hospital is to remain as an Integrated District Health Service, operating predominantly at a level three. The level of service delivery is anticipated to increase at Carnarvon for a small number of services:

Table 1: Proposed changes to the role delineation for Carnarvon

Hospital Service	2007/08	2014/15	2020/21
Adult Mental Health Services – emergency (hospital based)	3	4	4
Adult Mental Health Services – inpatients	3	4	4
Disaster preparedness and response services	3	4	4

Source: WA Health Clinical Services Framework 2010-2020

The level of service delivery is detailed in Appendix 2 of the Framework.

The following services will not be provided at Carnarvon Hospital:

Table 2: Clinical services not provided at Carnarvon and location of access for Gascoyne residents

Clinical Service	Location of service for Gascoyne residents
Radiation oncology	Perth
Ophthalmology	Geraldton
Orthopaedics	Geraldton
Vascular surgery	Geraldton
Neurosurgery	Geraldton
Dedicated after hours GP clinics	Geraldton / Perth
Adult, Child and adolescent authorised mental health inpatient services	Perth
Intensive Care Unit (ICU) / High Dependency Unit (HDU)	Perth (ICU), Geraldton (HDU)
Neonatal and Paediatric ICU	Perth
Critical Care Unit (CCU)	Perth

Source: WA Health Clinical Services Framework 2010-2020

Demand modelling undertaken during the development of the Clinical Services Framework (2009) recommends the following future bed profile.

Table 3: Proposed total bed numbers for Carnarvon Hospital – as defined in the WA Health Clinical Services Framework 2010-2020

Bed Numbers	2007/08	2014/15	2020/21
Carnarvon Hospital			
Multiday	16	16	17
Sameday	10	10	10
Residential Aged Care	15	15	15
Total Beds on Site	**41**	**41**	**42**

Source: WA Health Clinical Services Framework 2010-2020

In addition, it is proposed that a four chair satellite outreach renal dialysis service will be developed in Carnarvon (WACHS Draft Renal Plan -2010).

There is no intention to develop mental health beds at Carnarvon Hospital.

The future bed numbers of small hospitals are not considered in the Clinical Services Framework (2009).

3.1.4 WA Health Networks

Health Networks in WA were established after a major review of health services in 2003 with the aim of enabling a new focus across all clinical disciplines towards prevention of illness and injury and maintenance of health.

The major functions of Health Networks are to plan and develop:

- evidence based policy and practice
- statewide clinical governance
- transformational leadership and engagement
- strategic partnerships

The models of care provide the potential to bring about vast improvements in the support available to clinicians and specialists and in the coordination of patient treatment across the State and within regional areas.

Network membership is drawn from key stakeholders and clinical experts from within Western Australia. WACHS, including the representatives from the Midwest, is actively involved in the establishment of these clinical networks.

3.1.5 Revitalising Country Health Service 2009-2012

The Strategic Plan outlines four revitalising directions that will underpin how WACHS will seek to improve the health of country Western Australians over the next three years. The revitalising directions include:

1. **A fair share for country health.** Securing a fair share of resources and being accountable for their use.
2. **Service delivery according to need.** Improving service access based on need and improving health outcomes.
3. **'Closing the Gap' to improve Aboriginal health.** Improving the health of Aboriginal people.
4. **Workforce Stability and Excellence.** Building a skilled workforce and a safe and supportive workplace.

The initiatives proposed in this Service Plan align with these proposed these four directions. The strategic plan can be viewed at:

http://www.wacountry.health.wa.gov.au/uploaddocs/booklet%20final.pdf

3.1.6 Primary Health Reform in Country WA 2010-2012

The document, Primary Health Reform in Country WA 2010-2012, outlines a proposal to reform the way in which primary health care services are funded and delivered in rural and remote WA.

The paper reports that the current models of funding and delivering primary health care services are failing rural and remote communities, leading to poorer health outcomes, extensive service inefficiency and fragmentation, ineffective use of public hospitals and inadequate funding for primary health care. New approaches are therefore required that address the barriers of multiple funders and providers and increase primary health care resources in communities where they are most needed.

A six-point Country Primary Health Plan, consistent with the intentions outlined in the National Health and Hospital Reform Commission, has been developed. The Plan, outlined below, is based on joint funding, evidence based regional planning, multi-disciplinary teams providing coordinated services across the care continuum and improved community to hospital linkage and care.

Six Point Country Primary Health Plan:

- Two different regional funding models for the north and south of the State.
- A strong governance and engagement framework.
- Workforce development and reform.
- Integrated service models suited to regional needs.
- Better use of technology and E-health.
- Addressing six key health priorities through primary health care. The six health priorities are maternal and child health; chronic disease primary mental health; communicable disease; environmental health; dental health and aged care.

3.1.7 Operational Plan 2010/11 WA Country Health Service

Building on the Revitalising Country Health Service 2009-2012 and other WACHS strategic planning documents, this operational plan provides a summary of the 13 prioritised actions/project, plus five additional organisational priorities.

The Operational plan identifies the project sponsor and support for each action.

Prioritised Actions
1. Improve services to Aboriginal communities and boost Aboriginal employment opportunities
2. Strengthen and improve access to emergency department services
3. Revitalise community and stakeholder partnerships and communication
4. Introduce new models of care that improve services and the health and well being of country people
5. Link alcohol , drug and mental health services and strengthen prevention and mental health promotion
6. Work with communities so that health and hospital services match health needs
7. Improve access of communities in rural and remote WA to primary health care services
8. Improve country aged care services
9. Develop a financial resource model to improve funding of country health services
10. Develop a secure electronic clinical information system, Telehealth and e-health

Prioritised Actions
11. Stabilise and skill the workforce , and provide a safe and supportive workplace
12. Establish the WA Centre for Country Health Service Research and Education
13. Develop the WACHS permanent employees housing accommodation strategy
Additional Organisational Priorities
1. Implement pharmacy reform
2. Improve patient safety and quality
3. Strengthen financial management, information and reporting
4. Develop and implement a WACHS strategic information management plan
5. Progress priority capital developments and the service plans that inform them, and capital transition plans

3.1.8 WACHS Midwest Clinical Services Plan (2008)

The key priority areas for service delivery, as outlined in the WACHS Midwest CSP are as follows:

- Investment in Early Intervention and Primary Health Care programs;
- Focus on Early Years strategies;
- Prevention and promotion strategies to tackle the increasing problems associated with diabetes and lifestyle related disease including alcohol and other drug misuse, smoking and obesity;
- Regional Workforce Development Strategy incorporating Health Workforce principles and increasing Aboriginal workforce participation;
- Establishment of Medi Hotel facilities;
- Developing and facilitating partnerships and strategies to improve health outcomes for the Midwest population;
- Building and developing Ambulatory Care services; and
- Progression of regional development projects.

Gascoyne specific initiatives proposed in the WACHS Midwest CSP include:

- Evaluate the joint social work service in Carnarvon between WACHS, CMSAC and the Midwest Division of General Practice;
- Increasing shared and collaborative services with Aboriginal medical services.
- Women's and children's services have been identified as a priority need for the Gascoyne. Proposed strategies include:
    - Increasing the child health and community midwife resources;
    - Improving linkages and pathways from maternity to child health to school health services;
    - Increasing services for sexual health clinical services and health promotion;

Service Planning Implications:

- Determine the models of care for clinical services anticipated to increase in service delivery as described in the *WA Clinical Services Framework* (2009).
- Implement Activity Based Management strategies.
- Align service planning and facility planning with the four directions of the WACHS *Revitalising Country Health Service (2009 – 2012)* Strategic Plan (2009).
- Align service planning with priorities identified in the WACHS Operational Plan 2010/11
- Align culturally appropriate models of care with the WA Health Networks in determining the future models of care.
- Promote coordination between hospital care, GP and primary health care and aged care to facilitate the provision of a seamless continuum of care where service duplication and fragmentation are avoided.
- Develop and facilitate strategic partnerships.
- Focus on improving the health status of local Aboriginal people.
- Develop ambulatory care services and health prevention and promotion strategies to tackle local issues.
- Focus on workforce development and reform, including increasing Aboriginal workforce participation.

3.2 Existing Commonwealth or State Government Commitments

Gascoyne Revitalisation Plan

The 2010-2011 State Budget includes funding of $131 million for the Gascoyne Revitalisation Plan, which aims to address key infrastructure and services across the district, including water; power; health; community development and town centre revitalisation; tourism; maritime; and housing and land availability. The Plan will fund 20 initiatives identified by the four local government authorities of Carnarvon, Exmouth, Shark Bay and Upper Gascoyne. It includes funding of $20.8 million for the Carnarvon Hospital redevelopment and $8.1 million for Exmouth Hospital.

COAG National Partnership Agreement – Aboriginal Health Funding

Under the COAG National Partnership Agreement, funding of $9.48 million has been allocated for improving the health of Aboriginal people living in the Midwest region. This funding commitment is to 2013/14 and will aid the following nine key health initiatives that were agreed through the Yamatji Aboriginal Health Planning Forum:

- Funding of $838,950 will be allocated to WA Country Health Service – Midwest to develop strategies to reduce the prevalence of smoking among Aboriginal youth and families and smoking indoors at home and in vehicles, in order to reduce the incidence of smoking related illness.
- The Midwest GP Network will be given $400,000 to support the installation of clinical management systems for local GPs and other primary health care providers. This will enable integrated electronic patient record sharing between WA Country Health Service – Midwest, health service providers and Aboriginal people and reduce duplication for service providers and clinical risk for patients.
- Funding of $2,326,124 will be provided to WA Country Health Service – Midwest in partnership with the Geraldton Regional Aboriginal Medical Service (GRAMS) and the Carnarvon Medical Service Aboriginal Corporation (CMSAC) to expand and improve the management and coordination of chronic disease across the Midwest region by developing a model of care coordination through partnerships with service providers.
- Funding of $1,849,644 will be provided to recruit gender specific Aboriginal liaison officers to work within the Geraldton Hospital, the Murchison and Gascoyne Districts Health Services and with GRAMS and CMSAC. This will develop the capacity to deliver coordinated and culturally secure care necessary to meet the needs of Aboriginal clients.
- GRAMS and CMSAC will be provided with $1,074,916 to engage youth and industry partners to identify and implement programs to promote social and emotional wellbeing in Aboriginal youth across the region.
- CMSAC will be provided with $697,569 to develop a family-based chronic disease outreach program in partnership with WA Country Health - Midwest.
- WA Country Health Service - Midwest will be provided $921,290 to address the current Aboriginal Sexually Transmitted Illnesses (STI) rates, which are four times higher than for the non-Aboriginal population. This will involve

the development of collaborative strategies promoting easy and fast access to screening, treatment and contact tracing and an increase in the delivery of sexual health promotion to young people.

- Funding of $465,108 will be provided to CMSAC to expand the existing multi-agency collaborative strategy that focuses on strengthening networks and resource sharing to increase antenatal and postnatal contacts for Aboriginal people.
- WA Country Health Service – Midwest will receive funding of $912,248 to employ additional health staff to provide services to Aboriginal children aged 0-5 years who are at risk of learning delays.

Medicare Section 19.2 Exemptions Initiative

To improve access to primary care in rural and remote areas, the Government allows Medicare benefits to be claimed for bulk-billed, non-admitted, non-referred professional services provided in emergency departments and outpatient clinics at some small rural hospitals. This includes nursing and allied health services.

To be eligible, a locality must:

- have a population of less than 7,000 people;
- not be in a major city; and
- be in an area of workforce shortage.

The initiative assists state and territory governments improve access to primary health care services and supports workforce retention in rural and remote communities. Benefits include increased access to bulk billed services, shorter waiting times, greater continuity of care, increased access to clinics which better manage chronic conditions and improved workforce retention.

Through the exemption initiative Exmouth Hospital has increased its ability to provide new and enhanced services to the community. Revenue from the program is spent on improving primary health services.

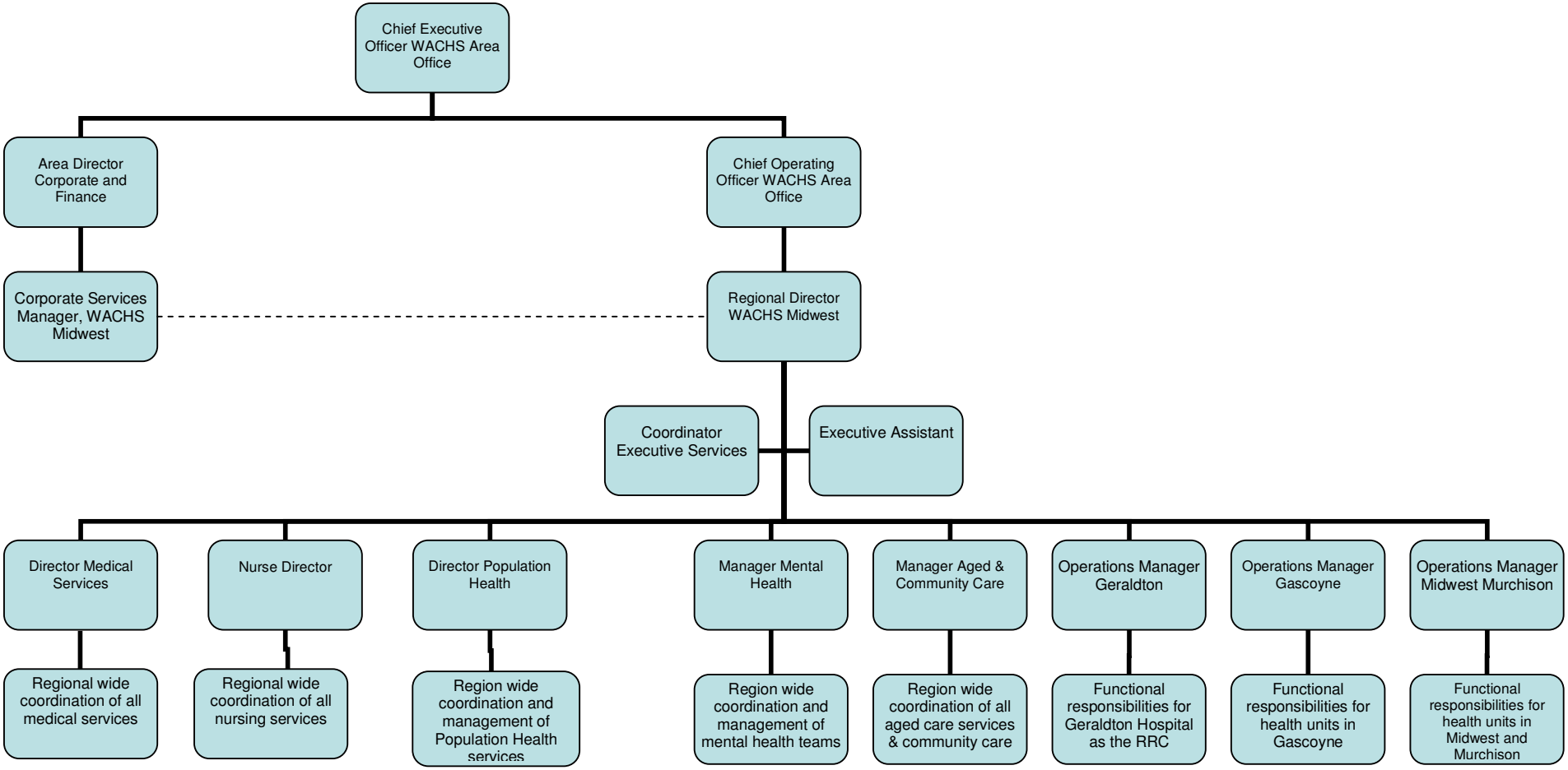
On October 13th 2010, Carnarvon Hospital was also granted a section 19.2 exemption.

3.3 Governance

The WACHS – Midwest services in Carnarvon are ultimately accountable to the Chief Executive Officer, WACHS – Area Office and line managed by the Regional Director, WACHS – Midwest.

Several services in Carnarvon operate within a regional model, with line management provided from Geraldton. The existing WACHS governance structure for the Midwest in summarised in Figure 1.

Figure 1: Existing Governance Structure for WACHS – Midwest (as of July 2010)



3.4 Key Drivers for Change and Strategic Directions for Service Delivery

3.5 Key Drivers for Change

The catchment population, current and projected activity data, and other qualitative information have been analysed, with consideration of the planning context outlined above, to identify the following key drivers for developing future models of care and service delivery strategies for WACHS Gascoyne:

- Changing demographics in the Gascoyne district, particularly relating to forecast growth in the older age groups and the growing tourism industry.
- Increasing demand for healthcare services and changing consumer expectations.
- The need to meet the current and future health needs of the catchment area.
- Lifestyle risk factors, high Aboriginal hospitalisation rates and higher mortality rates for Aboriginal people.
- Reported lack of accessibility of some healthcare services for Gascoyne district residents.
- Workforce shortages.

3.6 Key Priorities identified by the District

The Gascoyne District Health Advisory Council (DHAC) identified the following eight key priorities through informal discussions with the community and a health service initiated community survey of health needs:

- Aged care: residential and home care needs
- Patient Assistance Travel Scheme(PATS): Transport Issues
- Drug and alcohol problems: counselors and programs
- Dental service availability
- Frequency of visiting medical services
- Choice of General Practitioner
- Ambulance Service volunteers
- Mental Health services

3.7 Strategic Directions for Service Delivery

These drivers for change and identified priorities for the District have informed the development of a number of key service delivery strategies for the Gascoyne:

- Continuum of care
- Demand management
- Focus on non-inpatient care
- Delivering care closer to home

- Aboriginal health
- Aged care services
- Workforce
- Partnerships with primary care
- ICT

3.7.1 Continuum of Care

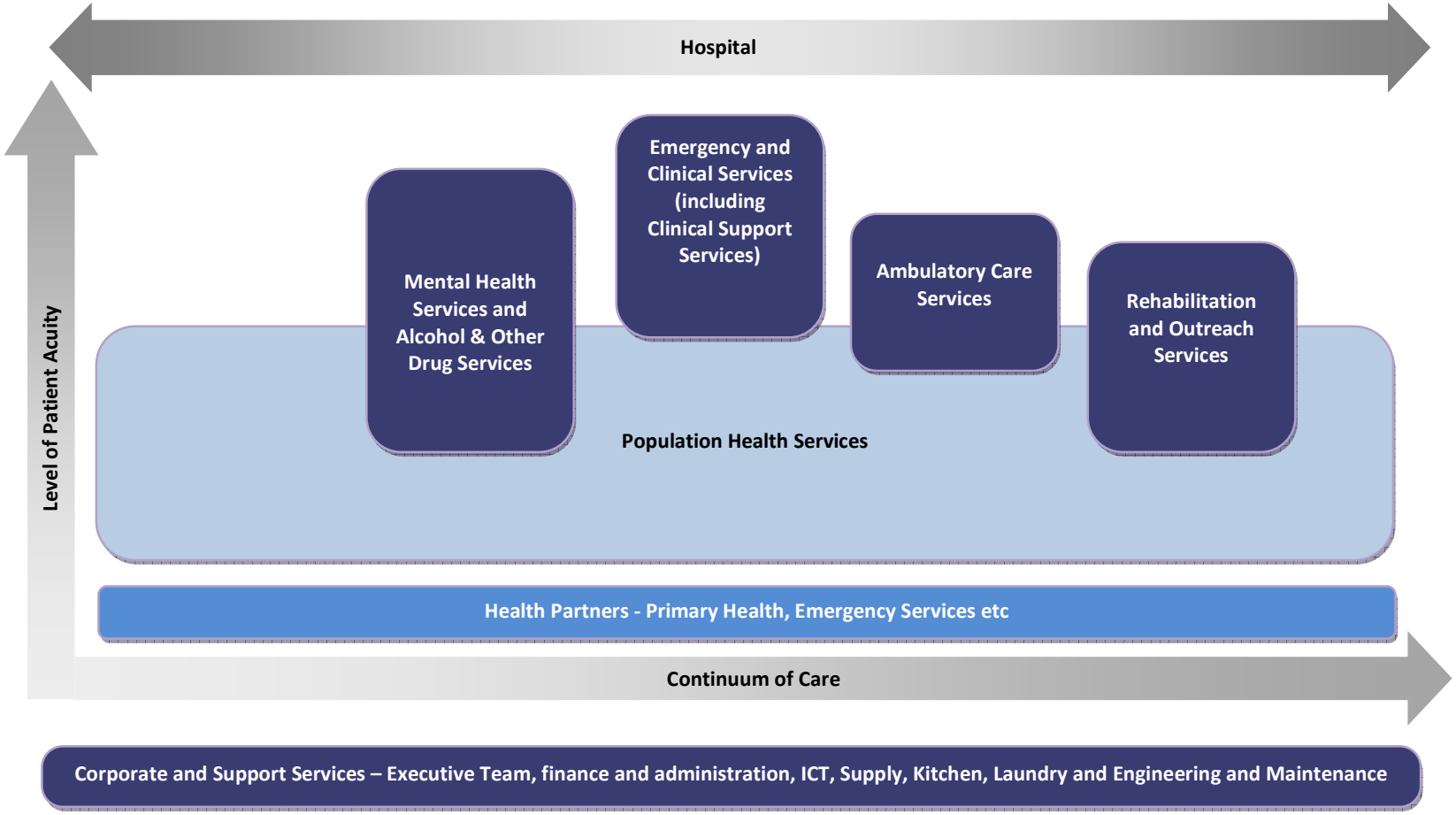
The delivery of healthcare services must have a strong focus on the patient/client across the continuum of care which encompasses the coordination/provision of health promotion, early intervention, diagnosis, treatment, rehabilitation and palliation. The delivery of services is based on the multi disciplinary model of health care with a continuum of integrated services, through nursing, medical, allied health and community providers working collaboratively to meet the patient's needs.

The WA Health Networks are developing models of care which, when implemented, will transform the WA public health system. These models refocus WA Health across the broad spectrum of health, with an emphasis on supporting the population to stay healthy as well as making their journey through the health system as efficient and effective as possible.

WACHS Midwest services are working with external agencies (known as 'Health Partners') to provide a continuum of care that offers a range of health services for all ages in the community. The continuum of care aims to enable health consumers to access appropriate services in an appropriate setting that are responsive to their age, ethnicity and health needs.

Figure 2 maps out the range of healthcare services delivered along the continuum of care. The Health Partners who directly assist in service provision are also highlighted and described further in Section 0. This includes emergency service agencies and primary health care agencies, including general practitioners and Aboriginal Medical Services.

Figure 2: WACHS Gascoyne: Continuum of Care (Conceptual)



3.7.2 Demand Management

A key focus of the reform agenda is the appropriate management of health system demand through the provision of effective, high quality, sustainable and coordinated patient-focussed services. This system wide demand management will be achieved through the implementation of strategies that:

- Reduce demand, slow the rate of demand, increase and better manage variations in demand; and
- Enhance the capacity of services to meet demand.

Key demand strategies that are currently being implemented across the Midwest and will continue to be enhanced throughout the region include the following:

Strategies that Reduce Demand
▪ Early Intervention in management of chronic disease through enhancement of CDM programs;
▪ Strengthening and expanding Hospital at Home (HAH), Hospital in the Home (HITH) services; Rehabilitation in the Home (RITH) and Hospital in the Nursing Home (HITNH);
▪ Development and implementation of non-admitted patient clinical pathways;
▪ Strengthening partnerships with primary care providers, including local general practitioners and Aboriginal Medical Services;
▪ Reduce ALOS by improving admission and discharge processes and inpatient ward efficiency;
▪ Develop outreach service to residential aged care facilities to avoid inappropriate emergency department presentations or hospital admissions;
▪ Delivery of safe, high quality, evidence-based health care in the community that includes health promotion and early intervention.
Strategies to Enhance the Capacity of Hospitals to Meet Demand
▪ Re-design of processes to ensure patient flow is maximally efficient;
▪ Increased use of outpatient strategies such as “hot” clinics and ‘fast track” ED streams to facilitate the rapid assessment and management of common conditions;
▪ Streaming of patients as soon as possible after admission;
▪ Implementation of new and more efficient technologies and systems;
▪ Examine and adjust models of service delivery to shift elective treatments towards same-day;
▪ Ambulatory Surgery Initiative (ASI) – Medicare funded;
▪ Investigate other models of inpatient care such as medi-hotels;
▪ Development of models of care that incorporate common care pathways and criteria for treatment and management on a region wide basis.
▪ Increasing the utilisation of the Enhanced Medicare items in partnership with the GP Network to improve the management of chronic disease in the region.

3.7.3 Focus on Non Inpatient Care

Further development of Ambulatory Care Services and new outpatient models of care will be explored to reduce the pressure on hospital beds and the number of triage category four and five ED presentations. Where clinically appropriate, care will be provided on a same day, ambulatory and diagnostic and treatment basis in suitably designed facilities.

In addition to this, programs are being established where acute/post acute care can be delivered to suitable, consenting patients in their home as an alternative to inpatient (hospital) care. The essential focus of services is to provide the most appropriate care setting, avoid hospital admissions or reduce patient length of stay through the immediate provision of multidisciplinary care. In a shared care model the GP and the multidisciplinary team work closely together to manage the patient in the community.

3.7.4 Delivering Care Closer to Home

Improving access to healthcare services for regional residents is a key service planning principle for WACHS. Healthcare services need to be planned to enable delivery of services as close to patients' homes as possible, while preserving the safety, quality and sustainability of services.

The range of services to be delivered at local, regional and Statewide levels will be informed by the role delineation described in the WA Clinical Services Framework 2010-2020.

In promoting improved access for regional residents to the right healthcare service at the right time, suitable public transport options are required, along with an efficient emergency transport/retrieval service, including RFDS and ambulance services.

3.7.5 Aboriginal Health

Achieving improvement in Aboriginal health status remains one of the most complex and challenging tasks faced by the Western Australian Government. Contributing to this is the fact that provision of better health services must happen alongside improvements in other key areas such as housing, education, employment and economic development.

There is a significantly higher proportion of Aboriginal persons residing in the Gascoyne district in comparison to the state average. The burden of disease incurred in the Aboriginal community remains higher than for the non-Aboriginal community which suggests that access to health services and health programs by Aboriginal people requires attention, and that the efficacy of these services and programs can be improved.

One of the key directions for improving the health status of the Aboriginal community is to promote Aboriginal focused early intervention and preventative community and outreach services as culturally sensitive alternatives to hospital based care. This approach needs to address the significant Aboriginal lifestyle issue of alcohol abuse given its association with diabetes, cancer, cardiovascular disease and unintentional and intentional injury.

The need to develop and support Aboriginal health workers and Aboriginal health staff is another key direction for the delivery of healthcare services in WA. Improving general workforce retention is also a means of improving Aboriginal health services, as longer serving staff gain credibility with their target population which in turn improves access and service efficacy. The *WACHS Aboriginal Employment Strategy 2010 – 2014* outlines five key strategies:

- Increase employment opportunities to attract and retain Aboriginal staff.
- Focus on workforce skill development.
- Develop a workforce culture and environment that supports the employment and retention of Aboriginal people.
- Redesign the workforce to enable employment and new work roles.
- Plan for workforce needs and evaluation of initiatives.

The *WACHS Strategic Plan, Revitalising Country Health Service 2009-2012*, identifies as a key action the need to 'improve services to Aboriginal communities and boost Aboriginal employment opportunities' across the State. The WA Country Health Service aims to deliver on this action through a range of workforce and program strategies including implementing the National Partnership Agreements as follows:

- Implement the Aboriginal Early Childhood Development National Partnership Agreement for WA through developing and implementing a suite of maternal and child health strategies through the Aboriginal health planning forums.
- Implement the Closing the Gap on Aboriginal Health National Partnership Agreement for WA though developing and implementing a suite of strategies to meet the 5 outcomes areas:
- Tackling smoking
- Primary health care that can deliver
- Fixing the gaps in patient journey
- Making Aboriginal health everyone's business
- Transition to adulthood.
- Develop the regional Reconciliation Action Plan.

The Gascoyne Health District will also be involved in the development of a *Reconciliation Action Plan* for the Midwest region. These are being developed by each of the WACHS regions with the aim of outlining the key actions required to close the significant life expectancy gap between Aboriginal and non-Aboriginal people.

3.7.6 Aged Care

Aged Care is an integral and growing component of the healthcare system. The demand for aged care services in the Gascoyne is expected to continue expanding due to the growth in the older age groups, the increasing prevalence of chronic disease and increasing consumer expectations.

The proportion of residents in the Gascoyne aged over 70 years is anticipated to increase from 7% at the time of the 2006 Census to over 10% by 2021 (ABS population projections, Series B+).

Growth in the Gascoyne Aboriginal population in the age range of 45+ years is also significant given Aboriginal people qualify for aged care services from this age.

The provision of aged care inpatient services will need to align with national and state wide directions for Sub Acute care, which aims to provide rapid and early access to rehabilitation, geriatric evaluation management and psychogeriatric care.

There is a complex range of community based services provided for the elderly residents of the Gascoyne. These are provided by both WACHS and a number of external healthcare partners. WACHS community aged care services for the Gascoyne are currently coordinated from Geraldton, however based on the forecast growth in elderly residents it may be necessary to provide some level of coordination specific to the Gascoyne district. This will focus on improving the older person services provided across the care continuum, in particular care provided in the community to avoid unnecessary hospitalisations and maintain wellness.

There are a limited number of residential aged care options available in the district and it acknowledged that the current number of residential aged care beds do not meet demand. Private residential aged care providers have indicated that they are not interested in developing and operating residential care facilities in Carnarvon due to financial viability concerns. Due to the lack of private sector interest, it is proposed that WACHS enter into a Multi Purpose Service (MPS) agreement with the Commonwealth for the provision of residential aged care services in Carnarvon. This will be dependent on the allocation of adequate capital funding from the WA Government. Recurrent MPS funding would be provided by the Commonwealth.

3.7.7 Workforce

It is acknowledged that the fundamental issue in sustaining service delivery in the Gascoyne district is the ability to attract and retain staff and visiting specialists.

Workforce planning for the area is part of the overall WACHS Midwest workforce planning process that has its foundation in the National Health Workforce Strategic Framework.

The Midwest region experiences some difficulty attracting and retaining skilled staff including allied health, specialist nursing and midwifery staff and specialist medical staff (even on a visiting basis). Key factors, highlighted by staff and health partners that adversely impact on workforce attraction, retention and service sustainability are:

- Remoteness of towns;
- Availability and affordability of local housing;
- Shared accommodation arrangements;
- Availability of private and public transport options;
- Housing proximity to the workplace (in the absence of transport);
- Attractiveness of salaries offered in the health sector when compared to the local mining and energy sector;
- Available funding for housing for medical and nursing staff under the Government Regional Officer's Housing (GROH) initiative; and

- Current models of care and the low volume casemix makes recruiting specialist nursing (operating theatre) and midwifery staff difficult as these staff prefer to work in their area of specialty.

These issues and concerns for staff retention impact all areas of service delivery and were highlighted in all consultation workshops. Specific strategies identified to address these critical workforce issues include the following:

Strategies Addressing Workforce Issues
▪ Improve short and long term housing options for staff. ▪ Build the capacity of Aboriginal health initiatives in the Gascoyne Health District by attracting and retaining positions and leadership roles for Aboriginal people. ▪ Modify governance structures where possible to support collocation models and regional service integration. ▪ Develop employment arrangements that support the introduction of flexible service models such as mobile clinical teams; ▪ Extend the use of Telehealth to increase remote access to specialist services for staff support and education. ▪ A commitment to redesign workflows and change skill mix as needed to better align available staff skills with patient needs. ▪ Develop organisational policies and a workforce culture and environment that supports innovation and continuous improvement.

Many of these proposed strategies are designed as an interim step to stabilise the Midwest health workforce while medium to long term whole of Government and WACHS wide solutions are developed and implemented.

3.7.8 Partnerships with Primary Care

It is proposed that WACHS services within the Gascoyne Health District will work to develop partnerships with primary healthcare providers in the area. These partnerships will promote integrated care by providing an environment in which the hospitals, health professionals and community based services work together in a seamless and coordinated manner. Greater integration between hospitals and the primary health providers will support the demand management strategies outlined above through improved discharge processes and avoiding unnecessary admissions.

3.7.9 Information Communication Technology (ICT)

More and more, ICT is being recognised for its importance in underpinning health reform and particularly innovative models of care.

Improvements in ICT will be guided by the technology division of WA Health. The aim of this division is to promote health reform through the appropriate use of ICT. The focus for the future is the use of "technology enablers" that can deliver improvements in health care via electronic patient records; clinical

decision support; telehealth; imaging; internet enabled applications; and e-business.

The use of these enablers assumes the following future directions for healthcare delivery:

- Demand for high resolution images, video streaming and bandwidth intensive applications will increase in the future.
- Future bedside patient services will include video streaming and internet access, therefore any cabling and communications infrastructure needs to cater for this type of service.
- Voice over IP (VoIP) will be adopted as the appropriate communications infrastructure within new or refurbished hospitals. Wireless communications that support mobile workers, as well as cater for mobile phones, will operate seamlessly within the wireless networks within the building.

These enablers will impact upon clinical workflow and business practices including how and where healthcare is delivered. They will provide for an improved interface between hospitals, general practice and other health practitioners (including private and non-government sectors). This is particularly relevant within rural areas where large geographical distances often exist between service providers. The provision for the development of advanced networking capabilities, wireless messaging and system integration for rural areas will thus enable point of service data capture regardless of the venue and the ready availability of a consolidated data source.

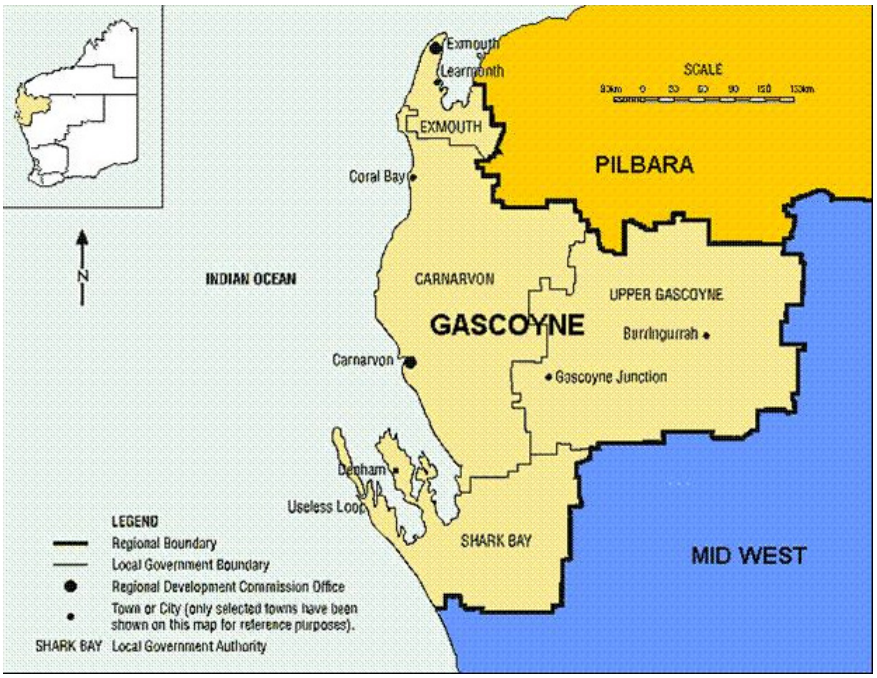
In addition to providing an essential support to the innovative services, the ICT strategy is viewed as a method of attracting and retaining staff to a safe and appealing work environment.

4 DEMOGRAPHICS & EPIDEMIOLOGY

The future models of care for WACHS services in the Gascoyne district will need to be responsive to the needs of the local catchment area and the political, social and economic context from which services operate, including the availability of the resident or visiting workforce. The following section provides an overview of the Gascoyne Health District catchment area, along with a description of the demography and other factors that influence the health status of the local residents. This information on the population's health needs informs the types and locations of services required in the Gascoyne district over the next 10 to 20 years.

4.1 Catchment Area

Figure 3: Gascoyne Health District



Source: DoH WA Country Health Service

The Gascoyne Health District is located in the north west of the WACHS Midwest health region. The district includes over 600 km of Indian Ocean coastline, extends approximately 500km inland and has a total area of 137,938 km² (including islands). The coastal area incorporates internationally recognised features such as the Ningaloo Reef, the Shark Bay World Heritage Area, Monkey Mia, and Coral Bay. The hinterland includes the Kennedy Range and Mt Augustus.

The Gascoyne has a diverse economy. Tourism is a major industry, due to the warm, dry climate and the long coastline. During the tourist season, particularly between May and September, the population swells by up to 70%.

Pastoralism is an important industry, and represents the region's main land use (84% of the Gascoyne's land area is covered by Pastoral leases). The Gascoyne also has a substantial mining sector, mainly based on extraction of salt and gypsum.

Local Government Areas and Key Centres

The Gascoyne District is defined by the Shires of Carnarvon, Exmouth, Shark Bay and Upper Gascoyne. The town of Carnarvon is the major hub for the Gascoyne Health District with smaller townsites at Exmouth, Coral Bay, Denham and Gascoyne Junction. Burringurrah is a remote Aboriginal community, located 480km east of Carnarvon.

4.2 Demographics

The demographics of the Gascoyne health district will influence the type of services and the models of care delivered at health campuses across the area. This section highlights the population growth, gender, age distribution and cultural diversity of the area that will need to be considered in determining the future Gascoyne models of care.

4.2.1 Population and Population Growth

The Estimated Resident Population (ERP) of Gascoyne declined by 4.5% between 2003 and 2008 (from 10,124 to 9,668)[2]. This was in contrast to the 11.2% increase for the State.

The Australian Bureau of Statistics (ABS) Census collects both the number of residents of an area and also the number of people in the area on the Census night (August), as shown in Table 1. In August 2006 (peak tourist season) there was an additional 74% of people in the Gascoyne district on Census night than are usually resident (15,435 compared with 8,887).

Table 4 Gascoyne district Census counts, by SLA, 2006

Area	Total Census night count	Resident count	Percentage of additional people (non-residents) in the Gascoyne region on census night
Carnarvon (S)	8,664	5,683	52.5%
Exmouth (S)	4,219	2,062	104.6%
Shark Bay (S)	2,043	855	138.9%
Upper Gascoyne (S)	509	287	77.4%
Gascoyne	**15,435**	**8,887**	**73.7%**

Source: ABS Census 2006.

[2] ABS. 2009. Population by Age and Sex, Western Australia, Cat. No. 3235.0. Accessed via DoH Epidemiology Branch

The ABS produces different population projections based on different assumptions of births, deaths and migration. WA Health has endorsed the use of the ABS series B+ population projections, rebased to the 2009 ERP. Based on these projections the resident population of the Gascoyne health district is projected to increase by 7.9%, from 11,729 in 2011 to over 12,600 by 2021, as shown in Table 5. This level of growth is markedly lower than the expected 20.3% growth of the State for the same time period[3].

Table 5 Gascoyne population projections, 2011 to 2021

Area	2011	2016	2021	Growth (2011-2021)	Average annual growth
Carnarvon (S)	7,485	7,794	8,095	8.2%	0.8%
Exmouth (S)	2,640	2,706	2,772	5.0%	0.5%
Shark Bay (S)	1,157	1,195	1,219	5.4%	0.5%
Upper Gascoyne (S)	448	509	569	27.0%	2.4%
Gascoyne	11,729	12,204	12,655	7.9%	0.8%

Source: ABS Series B+ projections

The Upper Gascoyne is expected to have strong growth of 27.0% between 2011 and 2021, however this shire area starts from a very low population base.

Implications for service planning:

The Gascoyne health district has a low projected population growth. However, the large number of tourists between May and September will require consideration when planning for health services across the district, particularly for ED and ambulatory care type services.

4.2.2 Gender distribution

In the 2008 ERP there were more males than females in Gascoyne (53.1% compared with 46.9%) and this gender imbalance is projected to remain in the future, as shown in Table 6.

[3] DoH, 2010. ABS Series B+ Population Projections.

Table 6 Gascoyne population projections by gender, 2011 to 2021

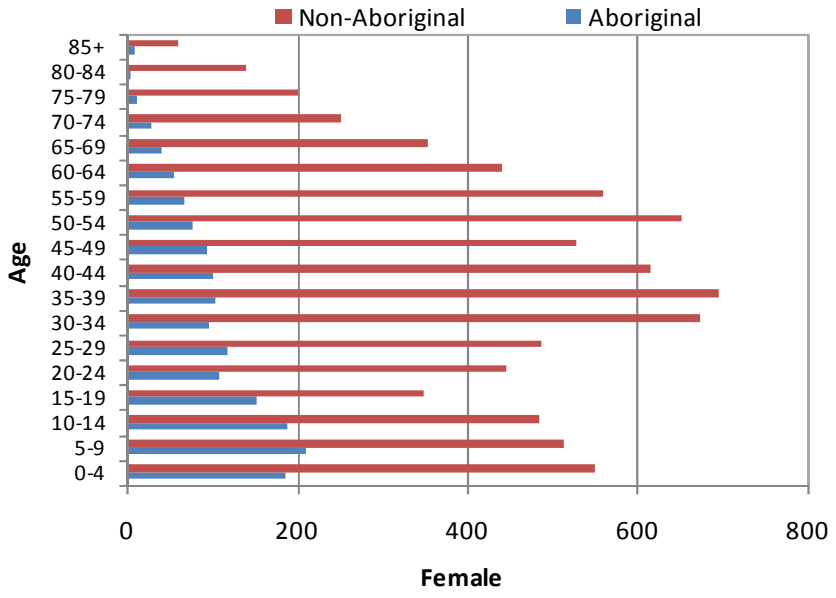
Area	Gender	2011	2016	2021	Growth (2011-2021)	Average annual growth
Carnarvon (S)	Female	3,579	3,761	3,933	9.9%	0.9%
	Male	3,905	4,034	4,163	6.6%	0.6%
Exmouth (S)	Female	1,219	1,252	1,297	6.4%	0.6%
	Male	1,421	1,454	1,475	3.8%	0.4%
Shark Bay (S)	Female	579	596	618	6.8%	0.7%
	Male	578	599	601	3.9%	0.4%
Upper Gascoyne (S)	Female	216	248	284	31.6%	2.8%
	Male	232	261	285	22.7%	2.1%
Gascoyne	Female	5,593	5,857	6,132	9.6%	0.9%
	Male	6,136	6,348	6,523	6.3%	0.6%

Source: ABS Series B+ projections

4.2.3 Age distribution

The Gascoyne district region currently has a similar overall age distribution to the state and is anticipated to grow in a similar manner to the state. However, as demonstrated in the figure below the age distribution for the Aboriginal population is different to the non-Aboriginal population.

Figure 4 Age Distribution Aboriginal and Non-Aboriginal Population in the Gascoyne Health District



Source: 2008 ERP, provided by DoH Epi Branch.

The dependency ratio is a ratio of those typically not in the labour force to those in the labour force and is calculated by dividing the number of people under 15 or over 64 years of age by the number of people aged 15 to 64 years. In the 2008 ERP the dependency ratio of the Gascoyne district was greater than that of the State (0.50 compared with 0.46). The ratio for the Gascoyne is anticipated to increase to 0.59 by 2021.

The proportion of residents who are aged 70 years and over is anticipated to increase from 7.3% in 2011 to 10.3% in 2021, reflecting an increasing longevity. With this increase there will be an additional 500 older adults aged 70 years and over between 2011 and 2021, as shown in Table 7. This 55.4% growth is much larger than the 7.9% growth for all ages.

Table 7 Gascoyne older adult population projections, 2011 to 2021

Area	Age	2011	2016	2021	Growth (2011-2021)	Average annual growth
Gascoyne	70-84 yrs	725	846	1,106	52.6%	4.3%
	85 yrs+	117	168	201	72.4%	5.6%
	Total	842	1,014	1,308	55.4%	4.5%

Source: ABS Series B+ projections

Implications for service planning:

The ageing population will place added pressures on health services to manage health conditions commonly seen in older adults e.g. chronic disease, falls, dementia and cancers, and indicates an increasing need for community, primary health, cancer care and residential aged care services.

4.2.4 Cultural diversity

Aboriginal people

In the 2006 Census 15.3% of Gascoyne residents identified themselves as being Aboriginal and/or Torres Strait Islander. This proportion was four times that of the state (3%). As shown in Table 8 the Upper Gascoyne Shire had the highest proportion (56.1%) and Exmouth Shire the lowest (1.3%).

Table 8 Gascoyne district proportion of usual residents identifying as Aboriginal and/or Torres Strait Islander, by SLA, Census 2006

Area	Identifying as Aboriginal and/or Torres Strait Islander
Carnarvon (S)	19.1%
Exmouth (S)	1.3%
Shark Bay (S)	10.4%
Upper Gascoyne (S)	56.1%
Gascoyne	15.3%

Source: ABS Census 2006.

Ethnicity

In the 2006 Census 15.5% of the Gascoyne residents reported being born overseas. This proportion was almost half that of the state (27.1%). As shown in Table 9 the Upper Gascoyne Shire had the lowest proportion of overseas born (4.2%). One-third (32.6%) of the Gascoyne residents born overseas were born in the United Kingdom.

Table 9 Gascoyne district proportion of usual residents born overseas, by SLA, Census 2006

Area	Born overseas
Carnarvon (S)	15.6%
Exmouth (S)	16.3%
Shark Bay (S)	16.4%
Upper Gascoyne (S)	4.2%
Gascoyne	15.5%

Source: ABS Census 2006

4.3 Health status and health service needs

4.3.1 Determinants of Health

There are many factors that influence a person's health, including genetics, lifestyle and environmental and social factors. These factors may have a positive or a negative impact. The following section describes the current health status of the region and summarises the factors (or determinants of health) that will influence the health status of residents now and into the future.

- Level of disadvantage experienced in the community (according to the Socio-Economic Indexes for Areas)
- Level of remoteness experience by the area (according to the Accessibility Remoteness Index of Australia)
- Climate
- Lifestyle behaviours

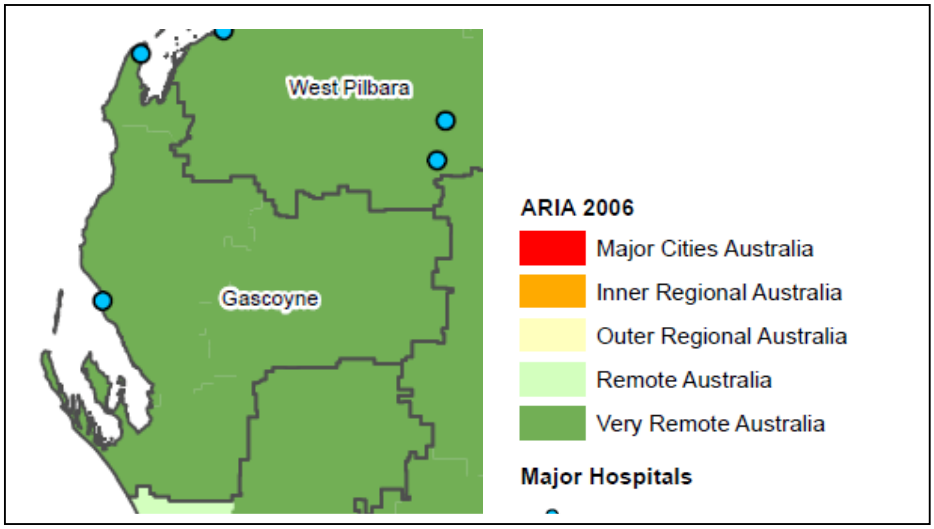
The factors highlighted influence the demand for health services and should be considered when designing the future models of care.

4.3.2 Remoteness

Remoteness is measured by the Accessibility Remoteness Index of Australia (ARIA), where areas classified as very remote have very restricted accessibility of goods, services and opportunities for social interaction.[4] Based on the 2006 ARIA the Gascoyne health district is classified as very remote, as shown in Figure 5.

[4] DoHA, 2001. Measuring Remoteness: Accessibility/Remoteness Index of Australia (ARIA), 2001. http://www.health.gov.au/internet/main/publishing.nsf/Content/7B1A5FA525DD0D39CA25748200048131 (accessed October 5, 2010)

Figure 5 ARIA classification of the Gascoyne



Source: DoH Epidemiology Branch

The distances and approximate vehicle travel time between Perth and major Gascoyne towns are shown in Table 10.

Table 10 Distance and approximate travel time from Perth

Town	Hrs:mins	Kilometres
Carnarvon	9:45	904
Denham	10:40	833
Exmouth	12:30	1,261

Source: Tourism Western Australia[5]

4.3.3 Socio-Economic Disadvantage

The Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage is calculated by the ABS from responses to the Census. It includes 17 different measures including the level of education, income, rent and Aboriginality of an area. The index does not take into account accumulated wealth, infrastructure or differences in costs of living between areas. It has been shown that more disadvantaged areas have higher proportions of reported ill health or risk factors for ill health.

The baseline for the Index of Relative Socio-Economic Disadvantage is 1,000. A score above 1,000 indicates an area of socio-economic advantage, and a score below 1,000 indicates an area of disadvantage. The further the deviation away from 1,000, the greater the level of advantage or disadvantage.

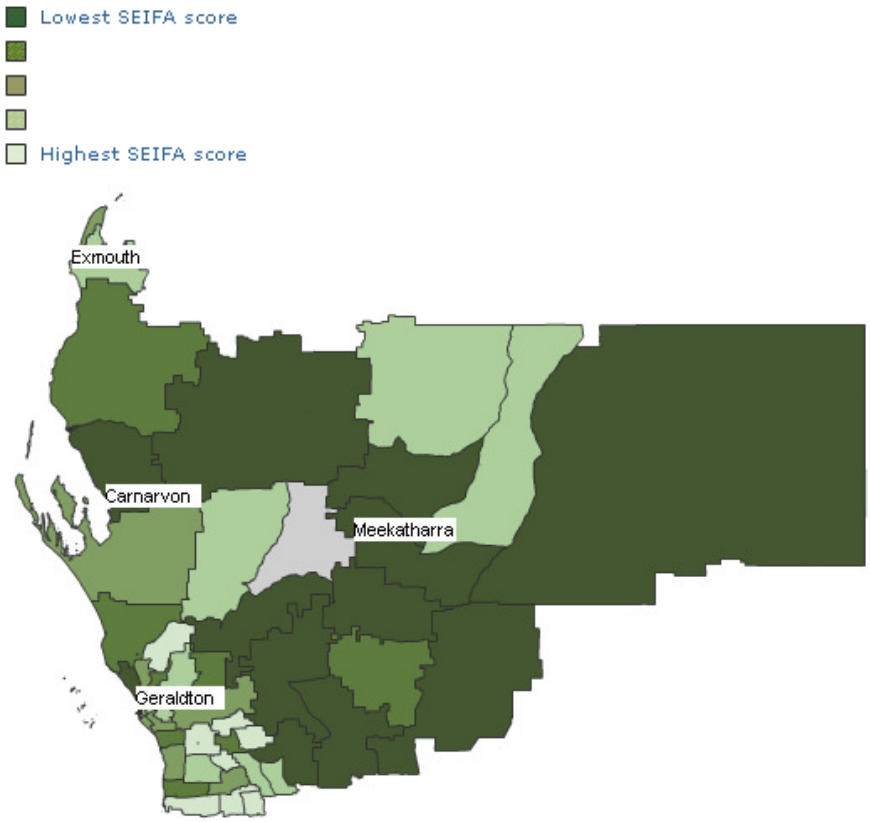
Within the Gascoyne health district the SLA scores ranged from 764 in the Upper Gascoyne to 1000 in Exmouth[6]. Scores are also measured by collection districts.

[5] *Tourism Western Australia. Travel Times and Distances. http://www.health.gov.au/internet/main/publishing.nsf/Content/7B1A5FA525DD0D39CA25748200048131 (accessed October 5, 2010)*

In the Gascoyne there are 34 collection districts, with scores varying between 443 and 1,063. Six of these are in the lowest 10% of collection districts in Australia.

An indication of the distribution can be seen in the map below.

Figure 6 SEIFA classification of the Midwest health region



Source: Australian Early Development Index website

Implications for service planning:

The SEIFA Index of Relative Socio-Economic Disadvantage shows that there are areas within the Gascoyne with differing levels of disadvantage. Services and programs will need to be flexible to target and respond to the needs of the more disadvantaged communities.

[6] *ABS. 2008. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), 2006. Cat. No, 2033.0.55.001. http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012006?OpenDocument*

4.3.4 Climate

The Gascoyne health district has a sub tropical climate with the average temperature ranging from 23 degrees Celsius in winter to 31 in summer for Carnarvon, and from 25 in winter to 37 for Exmouth[7]. The area experiences seasonal cyclones, rainfall and wind. The rainfall can create problems with mosquitoes and midges, while the dust and flies can impact health conditions, such as trachoma eye disease.

4.3.5 Self-reported Risk factors

Lifestyle behaviours are particularly important because of their relationship with chronic conditions that are considered to be preventable[8]. Prevention and management of these modifiable risk factors can therefore have a substantial effect on these preventable chronic conditions. Table 11 shows the relationship between these modifiable risk factors and the National Health Priority Areas[9].

Table 11 Chronic conditions and related modifiable risk factors

	Behavioural risk factors				Biomedical risk factors		
Chronic disease/ condition	Poor diet	Physical inactivity	Tobacco smoking	Excess alcohol use	Excess weight	High blood pressure	High blood cholesterol
Coronary heart disease	✓	✓	✓	✓	✓	✓	✓
Cerebrovascular disease	✓	✓	✓	✓	✓	✓	✓
Lung cancer			✓				
Colorectal cancer	✓	✓		✓	✓		
Depression				✓	✓		
Diabetes	✓	✓			✓		
Asthma			✓		✓		
COPD[a]			✓				
Chronic kidney disease	✓		✓		✓	✓	
Oral diseases	✓		✓	✓			
Osteoarthritis		✓			✓		
Osteoporosis	✓	✓	✓	✓			

(a) Chronic obstructive pulmonary disease

Source: AIHW 2002a.

Source: Reproduced from AIHW's Chronic diseases and associated risk factors in Australia.

[7] Australia's Coral Coast, n.d.. *Coral Coast weather and climate.* http://www.australiascoralcoast.com/en/about_the_coral_coast/Pages/Coral_Coast_weather_and_climate.aspx (accessed October 19, 2010)

[8] Joyce, S and Daly, A. 2010. *Health and Wellbeing of Adults in Western Australia 2009, Overview of Results.* http://intranet.health.wa.gov.au/epidemiology/docs/reports/WAHS/WAHS38.pdf (accessed September 9, 2010)

[9] AIHW.2006. *Chronic diseases and associated risk factors in Australia 2006. http://www.aihw.gov.au/publications/phe/cdarfa06/ (accessed October 4, 2010)*

Risk factor information is usually collected by population based surveys, such as the WA Health and Wellbeing Surveillance System (HWSS). The 2009 HWSS information has been analysed by the DoH Epidemiology Branch for adults aged 16 years and over and children aged 15 years (but not yet 16) in the Midwest health region[10,11]. Of particular note is that in 2009:

- One in five adults (20.3%) smoke.
- More than four in five adults (85.8%) and two in five children (46.5%) did not eat the recommended daily serves of vegetables.
- Nearly half (47.0%) the adults and one in three children (18.7%) did not eat the recommended daily serves of fruit.
- Nearly half the adults (49.9%) who drank alcohol drank at risk for long-term harm.
- More than half the adults (49.1%) and nearly half the children (55.7%) did not do sufficient physical activity.
- One in five adults reported having high blood pressure.
- One in five adults reported having high cholesterol.
- One in three adults (34.5%) and 19% of children reported height and weight measurements that classified them as obese. The prevalence of adult obesity was significantly higher than the State.

While many of the lifestyle behaviours of Midwest residents may not be significantly higher than the state, the prevalence is still important because these behaviours are modifiable risk factors for chronic conditions.

Information on the trend of these lifestyle and biomedical risk factors is not currently available for the Midwest health region, but it is available at the state level for adults aged 16 years and over[12]. Since 2002:

- There has been no significant difference in the prevalence of:
  - Drinking at risk for long or short-term harm.
  - Eating the recommended daily five serves of vegetables.
  - Eating the recommended daily two serves of fruit.
  - Smoking has been decreasing since 2002, but has remained fairly stable.
- The proportion of adults doing the recommended 150 minutes or more of moderate activity over five sessions decreased between 2003 and 2006, but has since increased.

[10] DoH Epidemiology Branch. 2010. *Adult Population Profile, Health and Wellbeing Surveillance System, 2009 Midwest-Murchison-Gascoyne health region*
http://intranet.health.wa.gov.au/epidemiology/docs/reports/WAHS/WAHS60.pdf

[11] DoH Epidemiology Branch. 2010. *Child Population Profile, Health and Wellbeing Surveillance System, 2009 Midwest-Murchison-Gascoyne health region*
http://intranet.health.wa.gov.au/epidemiology/docs/reports/WAHS/WAHS61.pdf

[12] Joyce, S and Daly, A. 2010. *Health and Wellbeing of Adults in Western Australia 2009, Overview of Results* .http://intranet.health.wa.gov.au/epidemiology/docs/reports/WAHS/WAHS38.pdf (accessed September 9, 2010)

- There has been no significant difference in the prevalence of:
  - Having ever had or currently having high cholesterol.
  - Having ever had or currently having high blood pressure.
- The proportion of adults classified as obese has increased over time.

While lifestyle risk factor information is not available for Aboriginal Midwest residents, at the national level Aboriginal people have been found to be twice as likely to smoke, to have poorer self-assessed health and to report higher levels of psychological stress as non-Aboriginal people[13].

Implications for service planning:

As excess body weight is linked with several chronic conditions, including coronary heart disease and some cancers, the increasing trend of obesity in adults may suggest an increase in these chronic conditions in the future. In addition, child obesity is known to be a strong predictor of adult obesity (http://www.asso.org.au/profiles/general/faq/persistence).

4.3.6 Health Status, Midwest health region residents

Self-reported chronic conditions

Chronic conditions refer to long-term conditions that last for six months or more[14]. Not all chronic conditions result in hospitalisations and so hospital data does not give the full picture. This type of information is usually collected by population based surveys, such as the WA Health and Wellbeing Surveillance System (HWSS).

The most prevalent chronic conditions for adults in the Midwest health region in 2009 were:

- One in four adults (21.2%) had arthritis;
- One in five adults (17.1%) had an injury in the last year that required treatment from a health professional;
- More than one in ten adults (12.9%) had a current mental health problem. Females reported more than twice the prevalence of men.

Information on the trend of these chronic conditions is not currently available for the Midwest health region, but it is available at the state level for adults aged 25 years and over. Since 2002:

- There has been no significant difference in the prevalence of:

[13] ABS, 2010. *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples, 2001.* Cat. No. 4704.0 http://www.abs.gov.au/AUSSTATS/abs@.nsf/lookup/4704.0Chapter1002010#life (accessed October 12, 2010)

[14] Joyce, S and Daly, A. 2010. *Health and Wellbeing of Adults in Western Australia 2009, Overview of Results* .http://intranet.health.wa.gov.au/epidemiology/docs/reports/WAHS/WAHS38.pdf (accessed September 9, 2010)

- Heart disease
- Stroke
- Diabetes
- Asthma
- Respiratory conditions other than asthma
- Current mental health condition

- There has been a significant decrease in the prevalence of:
  - Arthritis in males since 2003 and females since 2004
  - Injuries requiring treatment in the past year.

Implications for service planning:

The modifiable risk factors and self-reported chronic conditions should continue to be monitored and used as a guide for developing and sustaining public health programs and interventions within the Gascoyne health district.

Vaccination

Annual flu vaccinations and five yearly pneumonia vaccinations are recommended for all adults aged 65 years and over, children less than five years, Aboriginal people under five years and adults over the age of 15, all adults with chronic diseases and pregnant women. Between 2006 and 2009 72.8% of Midwest health region residents aged 65 years and over reported having a seasonal flu vaccination in the last year, which was similar to the State (75.3%). Just over one-third (36.6%) of older adults reported having a pneumonia vaccination in the last year, while half (50.5%) reported having a pneumonia vaccination in the last five years.

Self-reported service utilisation

The HWSS asks respondents about their health service use in the last year. In 2009:

- Nine in ten Midwest adults (87.8%) reported having used a primary health care service.
- Less than half the Midwest adults (46.4%) reported having used a dental health care service. This usage was significantly lower than the State.
- One in three adults (29.7%) reported having used a hospital based health care service.
- One in twenty adults (5.4%) reported having used a mental health care service (e.g. a psychiatrist, psychologist or counsellor).

Implications for service planning:

As the majority of Midwest residents use primary health care this presents an opportunity for chronic conditions and modifiable risk factors to be assessed. A greater focus on ambulatory and primary health care in partnership with other private and not-for-profit health providers is recommended.

While 12.9% of Midwest adults reported having being a current mental health problem, only 5.4% reported having used mental health services in the past year. This indicates the importance of intervention at the time of assessment

Mortality

Mortality is an important indication of the health of the population. The Australian Bureau of Statistics (ABS) provides the DoH Epidemiology Branch with death information each year. Between 2003 and 2007 there were 256 deaths of Gascoyne residents. As an older population is likely to have more deaths than a younger population, the mortality data was age standardised to remove the impact of differing age structures. There was no significant difference between the overall mortality rate (the number of deaths per 1,000 people) of Gascoyne residents compared with the state.

The leading cause of mortality is shown in Table 12. Four of the five leading cause of deaths of Gascoyne residents were similar to those of the State.

Table 12 Leading cause of mortality by area of residence, 2003- 2007

	Gascoyne		
	Rank	No.	% of deaths
Neoplasms	1	73	28.5
Diseases of the Circulatory System	2	71	27.7
Injury and Poisoning	3	37	14.5
Diseases of the Respiratory System	4	15	5.9
Endocrine, Nutritional and Metabolic Diseases	5	14	5.5

Source: ABS Mortality data

Avoidable Mortality

Each year people die from diseases that have medical interventions and/or effective public health programs[15]. These deaths are referred to as avoidable mortality (AM) and are classified into three categories related to the type of intervention. Primary intervention includes deaths that could potentially have been avoided via effective public health measures. Secondary intervention includes deaths that could potentially have been avoided by early intervention through primary health care services or early detection through screening.

[15] Hocking, S., Draper, G., Somerford, P., Xiao, J. and Weeramanthri, T. 2010 *The Western Australian Chief Health Officer's Report 2010. Perth: Department of Health WA. http://intranet.health.wa.gov.au/epidemiology/docs/Chief_Health_Officer's_Report.pdf*

Tertiary intervention includes deaths that could potentially have been avoided using medical or surgical techniques.

Between 1997 and 2007 there were 350 deaths of Gascoyne residents under the age of 75. Around two-thirds of these deaths (232 or 66%) were classified as avoidable. The leading causes of these deaths are shown in Table 13. Cancers and chronic conditions accounted for the majority of avoidable deaths. Ischaemic heart disease was responsible for one in five avoidable deaths (21%), followed by lung cancer (13%) and suicide and self-inflicted injuries (8%).

Table 13 Leading causes of avoidable mortality by intervention type, Gascoyne residents aged 0-74 years, 1997-2007

Rank	Condition	No. Deaths	Percent	Intervention Type		
				Primary	Secondary	Tertiary
1	Ischaemic heart disease	48	20.7	24	12	12
2	Lung cancer	30	12.9	29	0	2
3	Suicide and self-inflicted injuries	19	8.2	6	11	2
4	Colorectal cancer	17	7.3	10	5	2
5	Cerebrovascular diseases	12	5.2	4	6	2
6	Chronic Obstructive Pulminary Disease	12	5.2	5	6	1
7	Diabetes	10	4.3	8	1	1
8	Breast cancer (Females only)	8	3.4	2	3	2
9	Melanoma of skin	7	3.0	6	0	1
10	Alcohol related disease	6	2.6	4	0	2
	Total Avoidable Mortality	**232**	**66.3**	**126**	**57**	**49**
	Total Mortality	**350**				

Source: ABS Mortality Data

The use of primary interventions could potentially have avoided more than half (54%) the avoidable deaths (126), while 24% (57) could have potentially been avoided through the use of secondary interventions, such as primary health care services or early detection through screening. One-fifth (49) of the avoidable deaths could potentially have been avoided through the use of tertiary interventions, such as medical or surgical techniques.

Implications for service planning:

More than half the deaths of Gascoyne residents under the age of 75 could potentially be avoided through the use of primary health programs. With the increasing trend of obesity, heart disease may also be likely to increase in the future.

Emergency Department Presentations

Actual ED activity in Gascoyne hospitals and nursing posts (ie presentations of local residents and vistors) is presented in a subsequent section within this Service Plan. This section discusses the ED presentation rate of Gascoyne residents to any hospitals both within and outside the Gascoyne region as this, again, provides indications of the health of the local population.

ED presentations of Gascoyne residents have decreased over the last four years, from 1,470 presentations per 1,000 persons in 2004/05 to 1,224 presentations per 1,000 persons in 2008/09, a decrease of 16.8%.

However, while the number of presentations has decreased the rate of presentation of Gascoyne residents in each of the last five years has been more than three times that of the Western Australian residents and more than 1.5 times that of the Midwest health region. The higher ED presentation rate may be a reflection of the lack of GPs available in the Gascoyne district. When the data was age standardised to remove the impact of different age structures within the populations, the ED presentation rate of Gascoyne residents remained significantly higher than that of the state and the Midwest region.

In 2008/09 Gascoyne residents had a greater proportion of ED presentations with a triage category of 4 or 5 (semi or non-urgent) compared to the State (86% compared to 65%). In particular, triage 5 presentations (non-urgent) accounted for 44% of Gascoyne residents presentations, compared with 16% of the State. Gascoyne residents had a triage category 4 and 5 ED presentation rate that was significantly higher than that of the State and the Midwest region, strongly suggesting that Gascoyne residents are using ED services for care that would otherwise be undertaken by a GP.

In 2008/09 the leading cause of ED presentations of Gascoyne residents was for injuries, poisonings and toxic effects of drugs, followed by diseases and disorders of the skin, subcutaneous tissue and breast and diseases and disorders of the ear, nose, mouth and throat.

Table 14 Leading cause of Emergency Department presentation, Gascoyne residents, 2008/09

Major Diagnosis Category	Rank	No.	% of total
Injuries, poisonings and toxic effects of drugs	1	1,886	16
Diseases and disorders of the skin, subcutaneous tissue and breast	2	1,705	14
Diseases and disorders of the ear, nose, mouth and throat	3	1,650	14
Diseases and disorders of the musculoskeletal system and connective tissue	4	1,374	12
Diseases and disorders of the respiratory system	5	1,218	10
Diseases and disorders of the digestive system	6	1,134	10
Diseases and disorders of the eye	7	406	3
Diseases and disorders of the circulatory system	8	393	3
Diseases and disorders of the kidney and urinary tract	9	322	3
Diseases and disorders of the nervous system	10	314	3

Source: Emergency Department Data Collection

Gender

In 2008/09 females accounted for 48% of the ED presentations of Gascoyne residents, a similar proportion as in the Gascoyne population. This resulted in a similar ED presentation rate in both males and females (1,208 per 1,000 males compared with 1,242 per 1,000 females). In contrast, at the State level females had a lower ED presentation rate than males. When the ED presentation rate in the Gascoyne was age standardised to remove the possible impact of different age structures between the populations, there remained no gender difference.

Implications for service planning:

Gascoyne residents present at high rates to emergency departments, particularly in the less and non urgent presentations. This indicates a high need for increased primary health services, which will need to be taken into account in the planning of future services. An increase in the GP sector may help to alleviate some of this need but co-located and collaborative service models between GP primary care, other non government health providers (eg Silver Chain and Aboriginal organisation's) and WACHS ED and population health/primary health services is strongly recommended.

Hospitalisations

The hospitalisation (separation) rate of Gascoyne residents has remained stable over the last four years, at 316 hospitalisations per 1,000 people in 2004/05 to 298 per 1,000 in 2008/09. In each year the hospitalisation rate of Gascoyne residents has been lower that of the state and the Midwest region. As the rate refers to the number per 1,000 persons it is not related to the size of the population within a health district. When the data was age standardised to remove the impact of different age structures within the populations, the hospitalisation rate of Gascoyne residents remained significantly lower than that of the state and of the Midwest region.

In 2008/09 the leading cause of hospitalisation of Gascoyne residents was for factors influencing health status and contact with health, followed by diseases of the digestive system and injury and poisoning. The leading causes of hospitalisation of Gascoyne residents were similar to those of the state and the Midwest region.

Table 15 Leading cause of hospitalisations by area of residence, 2008/09

	Gascoyne		
	Rank	No.	% of total
Factors Influencing Health Status and Contact with Health*	1	408	14
Diseases of the Digestive System	2	330	12
Injury and Poisoning	3	296	10
Neoplasms	4	237	8
Pregnancy, Childbirth and the Puerperium	5	220	8
Symptoms, Signs and Abnormal Clinical and Laboratory Findings	6	195	7
Diseases of the Circulatory System	7	189	7
Diseases of the Musculoskeletal System and Connective Tissue	8	169	6
Diseases of the Respiratory System	9	165	6
Mental and Behavioural Disorders	10	129	5
Diseases of the Genitourinary System	11	109	4
Diseases of the Skin and Subcutaneous Tissue	12	79	3
Diseases of the Eye And Adnexa	13	76	3
Diseases of the Nervous System	14	68	2
Endocrine, Nutritional and Metabolic Diseases	15	59	2
Infectious and parasitic diseases	16	38	1
Diseases of the Blood	17	38	1
Diseases of the Ear and Mastoid Process	18	30	1
Conditions Originating in the Perinatal Period	19	18	1
Congenital Malformations	20	10	0

**Includes: Health services for examination and investigation, reproduction, specific procedures, and other circumstances, and potential health hazards related to communicable diseases, socioeconomic and psychosocial circumstances, family and personal history (International Classification of Disease - ICD10).*

Source: WA Hospital Morbidity Data System

Gender

In 2008/09 females accounted for 45% of Gascoyne resident hospitalisations and a similar proportion (48%) of the Gascoyne population. There was no significant difference in the age standardised hospitalisation rate of females compared to males (285 per 1,000 females compared with 306 per 1,000 males). In contrast, a higher hospitalisation rate was found in females compared with males in the Midwest region and the State.

Both male and female Gascoyne residents had a lower hospitalisation rate compared with the State (306 per 1,000 males compared with 352 per 1,000 males and 285 per 1,000 females compared with 398 per 1,000 females). When the hospitalisation rate was age standardised to remove the possible impact of different age structures between the populations, the rate remained lower, suggesting the finding is not a result of a different age structure. Similarly both the male and female rates for Gascoyne residents were significantly lower than those of the Midwest region.

Potentially preventable hospitalisations

Many hospitalisations result from conditions where hospitalisations could potentially be prevented by the use of preventive care and early disease management. These hospitalisations are known as Potentially Preventable Hospitalisations (PPH) and are grouped into three major categories acute, chronic and vaccine preventable[16]. Public health measures have the greatest influence on vaccine preventable and chronic conditions.

In 2008/09 PPH accounted for 2,306 hospitalisations (9%) of Midwest residents and 272 hospitalisations (10%) of Gascoyne residents, a similar proportion to that of the State. Of the PPH of Gascoyne residents, vaccine preventable conditions accounted for 3%, acute preventable accounted for 49% and chronic conditions accounted for 49%. (Note: a single hospitalisation can exist in more than one category).

Acute preventable accounted for a greater proportion of Gascoyne resident PPHs compared with the Midwest region (35%) and the State (30%). This category includes the following conditions: dehydration and gastroenteritis, pyelonephritis, perforated/bleeding ulcer, pelvic inflammatory disease, ear, nose throat infections, dental conditions, appendicitis, epilepsy and gangrene.

Implications for service planning:

One in ten hospitalisations of Gascoyne residents could potentially be avoided through the use of preventative care, primary care and early disease management.

4.3.7 Health Status, children

Self-reported chronic conditions

The most prevalent chronic conditions for children in the Midwest in 2009[17] were:

- One in five children (19.1%) had an injury in the last year that required treatment from a health professional;
- One in ten children (10.0%) had asthma.

[16] Hocking, S., Draper, G., Somerford, P., Xiao, J. and Weeramanthri, T. 2010 *The Western Australian Chief Health Officer's Report 2010. Perth: Department of Health WA. http://intranet.health.wa.gov.au/epidemiology/docs/Chief_Health_Officer's_Report.pdf*

[17] DoH Epidemiology Branch. 2010. *Child Population Profile, Health and Wellbeing Surveillance System, 2009 Midwest-Murchison-Gascoyne health region*
http://intranet.health.wa.gov.au/epidemiology/docs/reports/WAHS/WAHS61.pdf

Vaccination

The child vaccination information for the Midwest region is shown below in Table 16. In the Midwest region a higher proportion of 12 and 24 month olds have been vaccinated compared with 60 and 72 month olds. In general a lower proportion of Aboriginal children have been vaccinated compared with non-Aboriginal children.

Table 16 Child vaccination proportion, Midwest region residents, 2004/05 – 2008/09

Year	12 months	24 months	60 months	72 months
2004/05	91%	94%	-	84.6%
2005/06	89%	93%	-	78.5%
2006/07	89%	91%	-	83.7%
2007/08	86%	92%	74%	-
2008/09	87%	93%	77%	-

Source: Australian Childhood Immunisation Register

Australian Early Development Index

The Australian Early Development Index (AEDI) measures how young children are developing when they first enter full time school. A teacher completes a checklist for each child and the scores of all children across Australia are ranked in each of the five areas, or domains, of early childhood development. Children ranked in the bottom 10% are classed as "developmentally vulnerable", those in the top 75% are classed as "on track" and those in between are classed as "at risk"[18].

- In Carnarvon (89 children) there are 23.8 per cent of children developmentally vulnerable on one or more domain/s of the AEDI and 17.9 per cent are developmentally vulnerable on two or more domains[19].
- In Exmouth (31 children) there are 32.3 per cent of children developmentally vulnerable on one or more domain/s of the AEDI and 22.6 per cent are developmentally vulnerable on two or more domains[20].

Self-reported service utilisation

In 2009 there were no significant differences in the reported health service utilisation in the last year of Midwest residents compared to the state. In the last year:

- Two-thirds of children (68.6%) reported having used a primary health care service.
- Fifty-nine percent of children reported having used a dental health care service.

[18] Australian Early Development Index, 2009. http://www.rch.org.au/aedi/about.cfm?doc_id=13152
[19] Australian Early Development Index, 2009. *AEDI Carnarvon Community, Western Australia*.http://maps.aedi.org.au/lga/wa/51540
[20] Australian Early Development Index, 2009. AEDI Exmouth Community, Western Australia. http://maps.aedi.org.au/lga/wa/53360

- One in five children (23.7%) reported having used a hospital based health care service.
- One in ten children (11.9%) reported having used a mental health service

Residents of regional areas are more likely to use dental services for treatment, rather than for regular check-ups, which may result in more severe dental problems that are harder to treat[21].

Implications for service planning:

As the majority of Gascoyne children use primary health care this presents an opportunity for chronic conditions and modifiable risk factors to be assessed.

Only 59% of Gascoyne children reported having used a dental health service in the last year reflecting potentially limited availability or access to public or private dental health care.

Mortality

The Australian Bureau of Statistics (ABS) provides the DoH Epidemiology Branch with death information each year. Between 1997 and 2007 there were 14 deaths of Gascoyne children under the age of 15 years.

Emergency Department Presentations

There has been no trend in the ED presentation rate of Gascoyne children aged 14 years and under over the last four years. In 2008/09 the ED presentation rate was 1,427 per 1000 children.

In 2008/09 there were 3,049 ED presentations of Gascoyne children under the age of 15 years, accounting for 25.8% of the ED presentations of Gascoyne residents. In each of the last five years the ED presentation rate of Gascoyne children was significantly higher than that of the Midwest region and the State.

Implications for service planning:

Gascoyne children have a greater need for ED services, which will need to be taken into account in the planning of future services. An increase in the GP sector may help to alleviate some of this need.

[21] Perozzi, C, 2009. *Dental Services in Country Western Australia, February 2009.*Perth: Western Australia

Hospitalisations

In 2008/09 there were 264 hospitalisations of Gascoyne children under the age of 15 years, accounting for 9% of the hospitalisations of Gascoyne residents. There was no significant difference in the hospitalisation rate of Gascoyne children compared with the Midwest region and the State.

In 2008/09 the leading causes of hospitalisation for Gascoyne children were for diseases of the respiratory system, followed by injury and poisoning and diseases of the digestive system. These mirrored those of the state.

Potentially preventable hospitalisations

Potentially Preventable Hospitalisations (PPH) and are grouped into three major categories acute, chronic and vaccine preventable. In 2008/09 Potentially Preventable Hospitalisations (PPH) accounted for 43 hospitalisations (16%) of Gascoyne children aged 14 years and under, a similar proportion to the Midwest region and to the State. Of these, acute preventable accounted for 79% and chronic conditions accounted for 19%, similar proportions to the State. The acute category includes the following conditions: dehydration and gastroenteritis, pyelonephritis, perforated/bleeding ulcer, pelvic inflammatory disease, ear, nose throat infections, dental conditions, appendicitis, epilepsy and gangrene.

Implications for service planning:

Sixteen percent of hospitalisations of Gascoyne children aged 14 years and under were potentially preventable reflecting a need for greater child and community health and primary care services.

4.3.8 Health Status, Aboriginal residents

Mortality

Aboriginal people have a significantly lower life expectancy compared with their non-Aboriginal counterparts, with the gap at the national level estimated to be 11.5 years for males and 9.7 years for females[22]. Between 2003 and 2007 there were 65 deaths of Aboriginal Gascoyne residents (26% of the deaths in the Gascoyne district).

From 1998 to 2007 Aboriginal residents of the Midwest region had a similar mortality rate for all conditions compared with the State Aboriginal population. However, Aboriginal residents in the Midwest had a significantly higher mortality rate compared with non-Aboriginal residents of the Midwest.

[22] ABS, 2010. *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples, 2001.* Cat. No. 4704.0 http://www.abs.gov.au/AUSSTATS/abs@.nsf/lookup/4704.0Chapter1002010#life (accessed October 12, 2010)

Avoidable Mortality

Between 1997 and 2007 there were 119 deaths of Aboriginal Gascoyne residents under the age of 75. Aboriginal Gascoyne residents had a greater proportion of deaths classified as avoidable (72% or 89 deaths) compared with non-Aboriginal Gascoyne residents (63%). The use of primary interventions could have potentially avoided half (50%) of the avoidable deaths, while 28% could have potentially been avoided through the use of secondary interventions, such as primary health care services or early detection through screening. One-quarter of the avoidable deaths could potentially have been avoided through the use of tertiary interventions, such as medical or surgical techniques.

Emergency Department Presentations

There has been no discernable trend in the ED presentation rate between 2004/05 and 2008/09. In each of the last five years the ED presentation rate of Gascoyne Aboriginal residents has been significantly higher than the State rate of Aboriginal residents, even when the different age populations have been taken into account. Similarly the ED presentation rate was significantly higher than Midwest Aboriginal residents.

In 2008/09 Gascoyne Aboriginal people accounted for 29.6% of Gascoyne resident ED presentations, but only 17.3% of the Gascoyne population. As a result the ED presentation rate of Aboriginal Gascoyne residents was twice as high as the non-Aboriginal Gascoyne residents (2,111 per 1,000 people compared with 1,039 per 1,000 people). This difference remained when the different age structures of the population were taken into account.

In 2008/09 Aboriginal Gascoyne residents had a higher proportion of ED presentations with a triage category of 4 or 5 (semi or non-urgent) compared to the State Aboriginal population (86% compared to 75%). Triage 5 presentations (non-urgent) accounted for 41% of Aboriginal Gascoyne residents presentations, suggesting that Gascoyne residents are using ED services for care that may otherwise be undertaken by a GP.

Implications for service planning:

Gascoyne Aboriginal residents utilise emergency services at a far higher rate than non-Aboriginal people and than the State Aboriginal population. This needs to be addressed in the planning of future services e.g. more Aboriginal targeted and primary care, population health and child and maternal health services. Future services planning needs to ensure all services are accessible to and culturally appropriate for the Aboriginal residents.

Hospitalisations

In each of the last five years Aboriginal Gascoyne residents had a much higher hospitalisation rate compared to non-Aboriginal Gascoyne residents. Aboriginal Gascoyne residents had a lower hospitalisation rate compared with the State Aboriginal residents (376 per 1,000 people in 2008/09 compared with 750 per 1,000 people). When the hospitalisation rate was age standardised to remove the possible impact of different age structures between the populations the rate remained lower. Similarly, the hospitalisation rate of Aboriginal Gascoyne residents was lower than for Aboriginal residents of the whole Midwest region.

In 2008/09 the leading causes of hospitalisation differed between Aboriginal and non-Aboriginal Gascoyne residents. Injury and poisoning, followed by diseases of the digestive system were the leading causes of hospitalisation of Aboriginal Gascoyne residents.

From 2004 to 2008 Aboriginal residents in the Midwest had a significantly lower hospitalisation rate for kidney disease compared with the State Aboriginal population[23]. The rate for other conditions was similar to the State Aboriginal population. The hospitalisation rates of diabetes, cardiovascular disease, respiratory disease, injury and poisoning, mental health conditions, kidney disease, alcohol-related conditions, tobacco-related conditions and other drug-related conditions were significantly higher in the Midwest Aboriginal residents compared with the Midwest non-Aboriginal residents**Error! Bookmark not defined.**.

Potentially preventable hospitalisations

In 2008/09 PPH accounted for a greater proportion of hospitalisations of Aboriginal Gascoyne residents compared with non-Aboriginal residents (15% compared with 8%), which was similar to the Midwest region, but less than for the State. In the Midwest region chronic conditions accounted for 73% of the PPHs. This category includes asthma, congestive heart failure, diabetes (including renal dialysis), COPD, angina, iron deficiency anaemia, hypertension, nutritional deficiencies and rheumatic heart disease.

Implications for service planning:

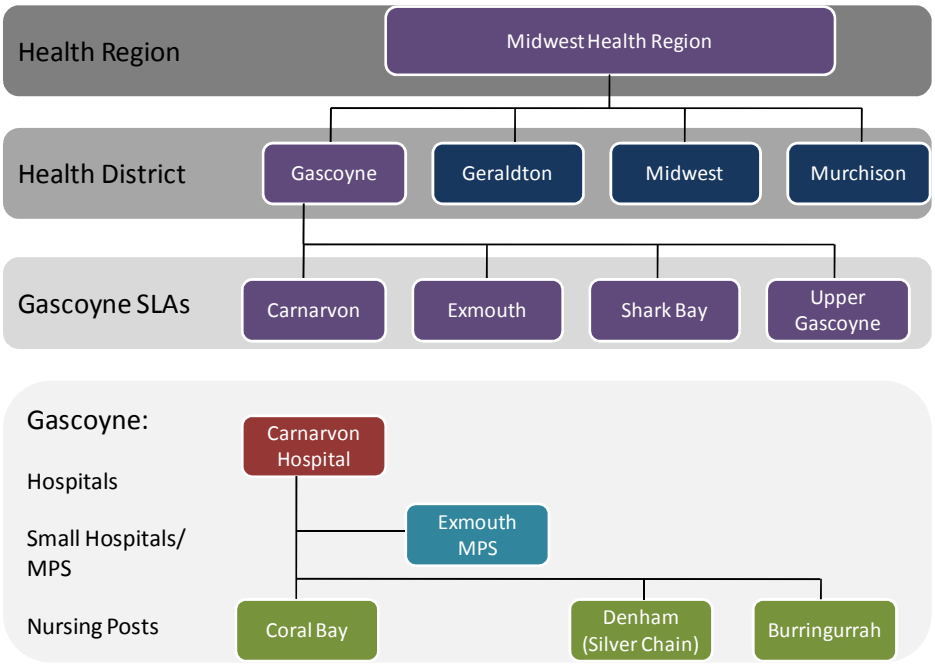
Aboriginal residents have a greater need for health care services compared with their non-Aboriginal counterparts. In particular, Aboriginal residents in the Midwest region have higher hospitalisation rates of diabetes, cardiovascular disease, respiratory disease, injury and poisoning, mental health conditions, kidney disease, alcohol-related conditions, tobacco-related conditions and other drug-related conditions compared with Midwest non-Aboriginal residents. Future services planning needs to address this with targeted interventions and accessible, culturally appropriate services for the Aboriginal residents.

[23] Carlose, N., Crouchley, K., Dawson, S., Draper, G., Hocking, S., Newton, B. and Somerford, P. 2009. *Midwest Aboriginal Health Planning Forum Data*. Perth: Western Australia

5 CURRENT WACHS SERVICE SCOPE

The Gascoyne Health District forms part of the WACHS Midwest Health Region's integrated network of services.

Figure 7: WACHS Gascoyne – Network of Health Services



Geraldton Health Campus is the 'hub' for health services in the Midwest Health Region and is recognised as a Regional Resource Centre under the WA Health Clinical Services Framework. A range of regional services are coordinated from Geraldton to support the integrated district health service at Carnarvon and a range of small hospitals, multi-purpose services and nursing posts located across the four health districts comprising the Midwest Region.

The Gascoyne Health District includes the Carnarvon Hospital, Exmouth Hospital (MPS), nursing posts at Coral Bay and Burringurrah and the Silver Chain nursing post at Denham.

As part of the integrated 'hub and spoke' model of service delivery, Carnarvon Hospital provides support to the Exmouth MPS and the three nursing posts. Gascoyne residents requiring more specialised care are transferred to Geraldton Health Campus and if required to metropolitan tertiary hospitals. This level of integrations enables WACHS-Midwest to:

- provide appropriate and safe care in suitably equipped and appropriately resourced facilities, according to the acuity of the patients; and
- provide care closer to home where possible – reducing the need to travel to Perth for treatment.

A summary of the health care facilities within the Gascoyne District are summarised below. Staffing profiles for each facility are attached at Appendix 1.

Carnarvon Health Service

Carnarvon Health Campus is designated as an Integrated District Health Service under the WA Health Clinical Services Framework.

Table 17: Service Profile for Carnarvon

Service	No. of beds / bays / Key service elements
Inpatients	15 overnight beds
Day surgery	10 day surgical beds
Residential aged care	16 beds (15 residential care, 1 respite care)
Emergency Services	3 treatment bays, 1 resuscitation bay
Maternity Services	Maternity centre including 1 birthing suite, 4 single maternity rooms (included in overnight beds)
Outpatient services	Antenatal, postnatal care, wound management, allied health, visiting medical specialists.
Population Health	Child health, community health, school health, continence management and education, sexual health, chronic disease management, health education/promotion, injury prevention, HIV/AIDS, women's health, drug and alcohol. Allied Health - Occupational Therapy, Physiotherapy, Speech Therapy, and Dietetics located at the hospital. Health promotion services and community health staff are accommodated in the Community Health building which is located in a separate building on the health campus.
Midwest Community Mental Health Team	Mental Health practitioners located on site. Five program areas: adult, child and adolescent, older adult, youth counselling and Aboriginal mental health.
Clinical Support Services	Medical Imaging, Pathology and Pharmacy.

Source: WACHS Midwest

Carnarvon Hospital underwent a Stage 1 redevelopment in 2008 that consisted of:

- the creation of a dedicated maternity area;
- a palliative care suite with ensuite and private outdoor area;
- upgrade of the general ward roof to meet cyclone standards; and
- upgrades to improve the hospital's fire safety and cyclone compliance.

Building Management and Works were engaged in 2010 to project manage the installation of a CT scanner. It is anticipated that the scanner will be operational by December 2010.

Exmouth MPS

Exmouth became a Multi Purpose Service in 2009, providing integrated health and aged care services for the local residents of Exmouth and Coral Bay.

Table 18: Service Profile for Exmouth

Service	No. of beds / bays / Key service elements
Inpatients	8 overnight beds
Residential aged care	2 residential care beds and 1 flexible use bed for respite / Care Awaiting Placement
Emergency service	2 treatment bays, 1 resuscitation room
Outpatient services	Wound management, lesion removal, asthma education, allied health, visiting medical specialists.
Population Health	Community health nurse, immunisations, diabetes education, women's health, chronic disease coordinator. Allied Health - Social Worker (funded by the GP Network), therapy assistant are located on site. Visiting allied health practitioners from Carnarvon.
Dental services	Dentist and dental nurse based in Exmouth
Community Mental Health	Part time resident Mental Health Nurse based in Exmouth.
Clinical Support Services	XRay, Ultrasound, Pathology collection service
Community aged care	6 Community Aged Care Packages (CACP)
HACC	Home Help, MOW, Gardening, Personal care, Nursing & Centre Based Day Care (CBDC)

Source: WACHS Midwest

Nursing Posts

Table 19: Service Profile for the Gascoyne Nursing Posts

Nursing Post	No. of beds / bays / Key service elements
Coral Bay	• Acute and Emergency service with evacuation via RFDS and SJA • Resident Aboriginal Health Worker/assistant • Resident Registered Nurse • Visiting physiotherapy clinic once per month, other visiting allied health services from Carnarvon available on request • Visiting child and adolescent mental health worker • Visiting physician, ENT and audiologist, ophthalmologist, optometrist and paediatrician • Visiting GP from Exmouth • Monthly visiting service from the Midwest Community Drug Service Team
Burringurrah	• Acute and Emergency service with evacuation via RFDS and SJA • Visiting Aboriginal Health Worker Service (due to inability to recruit resident for over three years) • Remote Area Nurse Service supported by RFDS during periods of vacancy. • Visiting allied health services from Carnarvon as requested (currently approximately four times per year): physiotherapy, OT, speech pathology • Visiting population health staff: communicable disease and community health nurse (immunisations, trachoma screening. • Visiting GP from Carnarvon 1 day/fortnight • Visiting Mental Health • Plan to resume a frequent visiting service from the Midwest Community Drug Service Team by February 2011
Denham	• Resident Silver Chain Nurse • Emergency evacuation via RFDS • Visiting medical practitioner from Carnarvon 2 days/week • Visiting allied health services from Carnarvon – currently once per month (physiotherapy, OT, speech pathology) • Monthly visiting service from the Midwest Community Drug Service Team

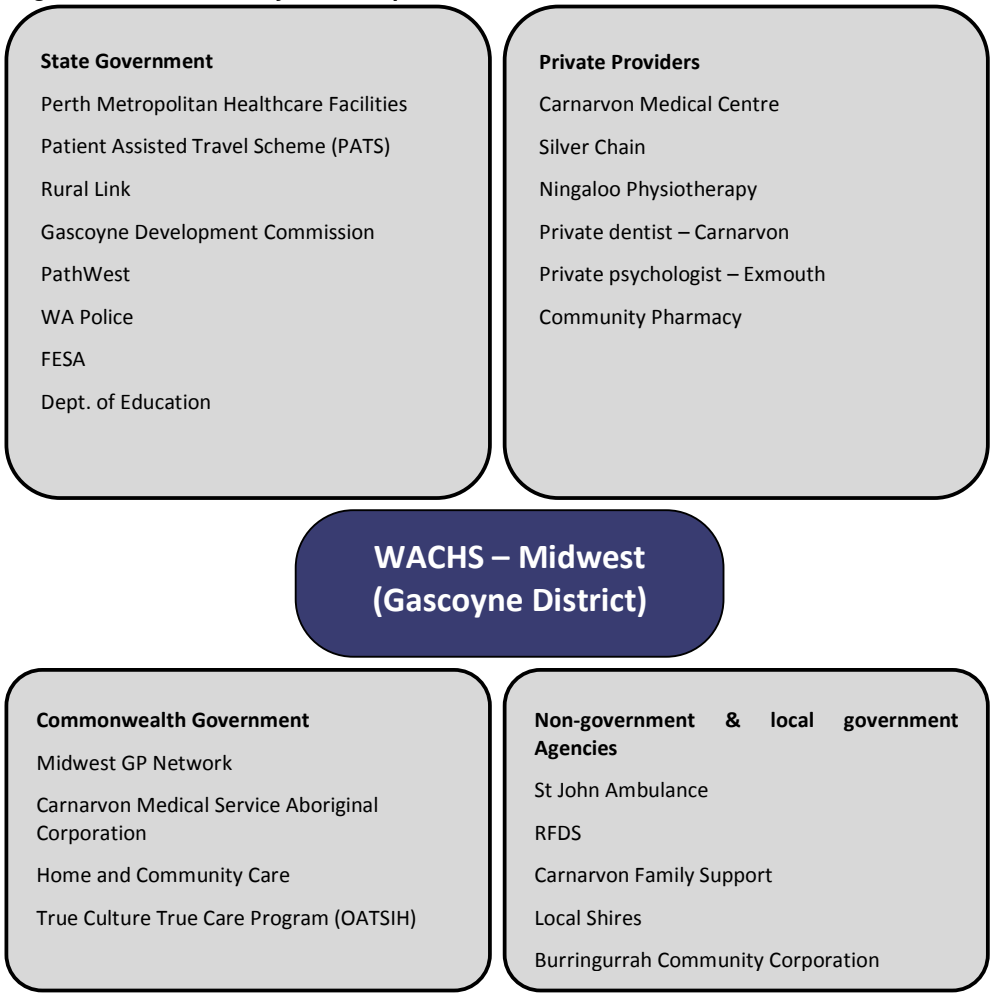
Source: WACHS Midwest

6 HEALTH PARTNERS

In addition to the WACHS services described above, a range of healthcare services are also provided by other State and Commonwealth government funded agencies, non-government organisations and private providers.

These services have partnerships with the WACHS Gascoyne District in providing direct care, support or health programs for health consumers. Their role is highlighted below.

Figure 8: WACHS Gascoyne health partners



Description of health partners:

- WACHS Midwest has a number of linkages with **metropolitan healthcare services** and will continue to explore and further develop these links for the benefit of Midwest clients and staff.
- **WA Police** and **Fire and Emergency Services (FESA)** work together with WACHS Gascoyne, **Royal Flying Doctors Service (RFDS)** and **St John Ambulance** to coordinate emergency management responses for the Gascoyne Health District.

- **Rural Link** provides a specialist after-hours mental health telephone service for the rural communities and health services of WA.
- The **Gascoyne Development Commission** is a WA Government statutory authority dedicated to the economic and social development of the Gascoyne Region.
- The **Carnarvon Medical Centre** has three rural general practitioners, one of whom has practiced locally for eight years. These doctors perform home visits and participate in the on-call roster at Carnarvon Hospital. It is acknowledged that the medical workforce in Carnarvon has been stable for the last two years and that this stability has greatly enhanced the provision of care.
- The Carnarvon Medical Centre also offers allied health services, including podiatry, physiotherapy, counseling, optometry, and pathology.
- **Silver Chain** operate the nursing post at Denham and provide HACC services, Community Aged Care Packages (CACP)and Extended Aged Care at Home (EACH) for the Carnarvon community and surrounding areas.
- The **Midwest GP Network** has a number of partnerships with WACHS Midwest to complement the work of local GPs. The GP Network provides access to allied health services, chronic disease management programs and community health initiatives.
- The **Carnarvon Medical Service Aboriginal Corporation** is staffed by three medical officers and four Aboriginal Health Workers (AHW) and provides healthcare services to the Aboriginal people residing in Carnarvon and surrounding areas. The service is also open to non Aboriginal clients. The AHWs provide foot and diabetes clinics. The AMS has just commenced providing social work services. In addition, a range of visiting specialists are engaged: podiatry - monthly, dentist - monthly, child health - half a day per week, psychologist - one day per week and antenatal programs in partnership with Carnarvon Hospital. The CMSAC also provide HACC services and a monthly GP clinic at Gascoyne Junction. The AMS clinic manages, on average, 80 patients per day, Monday – Friday.
- The **True Culture True Care (TCTC)** program is funded by the **Office for Aboriginal and Torres Strait Islander Health (OATSIH)** and provides services with the aim of improving health outcomes for Aboriginal mothers and babies in the Gascoyne.
- **Carnarvon Family Support** provides a women's refuge for those affected by domestic violence or homelessness; Family Violence Prevention Legal Service; Sexual Assault Response Service and emergency relief; information, advice and advocacy and supportive group meetings.
- **Local councils** are health partners on a number of fronts including environmental health, health promotion, youth support, harm minimisation, and community development.
- **Burringurrah Community Corporation** is a separate entity to the Upper Gascoyne Shire and is a key health partner.
- The **Department of Education** is a health partner throughout district for services such as Dental Health, trachoma screening, school health and protective behaviours.

7 CURRENT AND FUTURE CLINICAL SERVICE DELIVERY PROFILE

The following section details the current and projected demand for services in the Gascoyne Health District. Future models of care are proposed to manage demand for services, improve efficiencies in patient care, meet the needs of the local catchment area and ensure alignment with existing policies and strategies. The information will provide guidance for services in the District as they work towards consolidating improved models of care and will assist in informing the development of future business cases for the potential redevelopment of services.

Sections 7.1 and 7.2 provide an overview of current activity for District and a description of patient flows both within the region and outflows to other regional and metropolitan healthcare facilities.

The remaining sections outline each service area including the current service profile, recent historical activity, forecast demand projections where available, proposed future models of care and recommended service delivery strategies.

It is important to acknowledge that implementing the recommendations will be dependent on the availability of funding and the degree to which the staff and specialists can be attracted and retained to deliver the services.

7.1 Overview of Activity for the Gascoyne Health District

Table 20 highlights that there were 1,597 separations from WACHS Gascoyne hospitals in 2008/09. 1,318 (83%) of these separations involved residents of the District. The majority of separations were from Carnarvon Hospital (77%). Of the 1,236 separations at Carnarvon Hospital, 89% involved residents of the Gascoyne Health District.

Table 20: WACHS Gascoyne Health Service supply of services (2008/09)

Hospital	Separations, by Resident Grouping					% of Total Separations
	Carnarvon	Exmouth	Shark Bay	Upper Gascoyne	Other SLA residents	
Carnarvon	993	49	16	36	142	77%
Exmouth	11	213	0	0	137	23%
Total	1,004	262	16	36	279	**100%**

Source: HMDS, via Clinical Modelling Unit, extracted 1st September 2010

7.2 Patient Flow

7.2.1 Demand for health services by residents of the Gascoyne Health District

In 2008/09, approximately 2,850 separations from all WA private and public hospitals involved residents of the Gascoyne Health District.

Of these separations:

- 46.3% were from WACHS Gascoyne hospitals;
- 7.0% were from other WACHS Midwest hospitals (including Geraldton);
- 26.6% were from metropolitan hospitals; and
- 18.7% were from private health facilities.

The data is presented in the next Table.

7.2.2 Self Sufficiency of WACHS Gascoyne hospitals

'Self sufficiency' is a calculation used to identify the proportion of resident separations that are managed by Carnarvon and Exmouth hospitals.

The overall self-sufficiency of WACHS Gascoyne hospitals in 2008/09 was 57% (excluding private facilities). This indicates that 57% of Gascoyne Health District residents (public patients) received care from a WACHS Gascoyne facility.

Due to the level of remoteness and availability of onsite specialists, a country health service will not achieve 100% self sufficiency. Highly acute patients will continue to be transferred to Perth where tertiary or highly specialised services and medical equipment are located.

Table 21: Gascoyne resident total separations, by health facility (2008/09)

Area	Hospital	Residents' Total Separations 2008/09	% of Total Public & Private Separations
WACHS Midwest	Geraldton	188	6.6%
	Carnarvon	1,094	38.4%
	Exmouth	224	7.9%
	Other Midwest	10	0.4%
Sub-total (Midwest)		**1,516**	53.2%
Other WACHS Regions	Other	45	1.6%
Sub-total (WACHS)		**1,561**	54.8%
South Metropolitan Health Service	All	359	12.6%
North Metropolitan Health Service	All	320	11.2%
Child and Adolescent Health Service	All	78	2.7%
Sub-total (metro)		**757**	26.6%
Total Public Patients		**2,318**	**81.3%**
Private Facilities*	Metro	429	15.1%
	Rural	103	3.6%
Total (Private and Public)		**2,850**	**100.0%**

Source: HMDS, via Clinical Modelling Unit, extracted 1st September 2010 (Excludes unqualified neonates (newborn babies) and boarders, who are admitted to hospital, but do not receive any clinical care.

**Private facilities may also include public patients.*

7.2.3 Assumptions for future patient flows

The modelling undertaken by the WACHS Planning Team to project inpatient activity for the Gascoyne region is based on the following assumptions:

- Workforce Reform - it is anticipated that WACHS will be able to increase its retention rate of general specialists at all WACHS Regional Resource Centres and Integrated District Health Services with the exception of the Wheatbelt region. This translates to an assumption that by 2016/17 WACHS Midwest will retain 85% of admissions relating to SRGs for general medicine, general surgery, orthopaedics, gynaecology, obstetrics, drug and alcohol and acute psychiatry.
- Increase WACHS self sufficiency for renal dialysis services - it is assumed that by 2011/2012 there will be 85% retention of renal dialysis patients for the Midwest region, therefore fewer WACHS patients will need to relocate to Perth. The satellite dialysis service will continue to operate at Geraldton (with an expanded number of sessions to increase capacity). A four chair satellite outreach services is proposed for Carnarvon.

Based on these assumptions, it is anticipated that the self-sufficiency of WACHS Midwest Hospitals will significantly increase from the rate of 57% being achieved in 2008/09. However, rather than aiming for an overall proposed level of self-sufficiency, the focus will be for the Midwest to achieve a target level of retaining 85% of admissions relating to the several core specialty areas outlined above.

The specific inpatient service areas are analysed in greater detail in the following sections.

7.3 Acute Inpatient Care

7.3.1 Overview of Current Service Profile

Carnarvon Hospital

Carnarvon Hospital employs three salaried medical officers. The salaried medical officers are GP trained with speciality training, providing medical services cover for the Carnarvon Hospital, ED and inpatient areas.

Medical staff residents in Carnarvon are also employed by the Aboriginal Medical Service and there is also a private GP clinic (Carnarvon Medical Centre). The Carnarvon medical workforce has been stable for the last two years.

Doctors at the AMS do not admit patients under their care at the hospital – i.e. these patients are managed by the salaried medical officers. The GPs at the Carnarvon Medical Centre, however, do admit patients when they act as sessional doctors.

The acute facility at Carnarvon Hospital was renovated in 2008 and is the only part of the hospital designed to withstand cyclone force conditions. Staff report that there are no problems accessing acute care beds.

There is a 25 bed acute integrated general inpatient ward (paediatric, maternity, medical and surgical); a16 bed aged care wing which includes one respite bed; theatre complex and emergency department.

Table 22: Carnarvon Hospital: overview for 2008/09

ED OOS	Inpatient (acute care)				
	Seps	Beddays	Average bed occup-ancy	Number of beds	Occup-ancy Rate*
8,746	1,335	3,187	8.7	25	35%

In addition to the ED OOS there were 3,902 outpatient presentations seen in ED.
Data excludes unqualified neonates. Activity relating to the Permanent Care Unit (PCU) is also excluded.
Boarders are included and account for 7% of activity in 2008/09
**The acute bed count include 10 surgery beds, which are only used for 2-4 days a month.*
Data Source: ED data is from the Emergency Department Data Collection. Inpatient separations and bed days are from the WA Hospital Morbidity Data System via Clinical Modelling

Although the coding of 2009/10 data was not yet complete at the time of writing, preliminary data demonstrates an increase in inpatient separations of approximately 14% and in increase in ED OOS of 2% between 2008/09 and 2009/10.

Exmouth MPS

Exmouth MPS is staffed 24 hours a day with nursing and support staff. The roster is a 2:2:2 roster with two nursing staff in each of the morning/day and night duty shifts. An additional registered staff member is rostered to provide support in the practice nurse position. The Clinical Nurse Manager is rostered Monday to Friday.

Salaried GPs are based at the MPS, providing hospital and GP services, along with a visiting service (regular clinic) at Coral Bay

Table 23: Exmouth Hospital: overview for 2008/09

ED OOS	Inpatient (acute care)				
	Seps	Beddays	Average bed occup-ancy	Number of beds	Occup-ancy Rate
5,702	402	889	2.4	8	30%

Data excludes unqualified neonates. Borders are included and account for 7% of activity in 2008/09.
In addition to the ED OOS there were 9,612 outpatient presentations seen in ED.
Data Source: ED data is from the Emergency Department Data Collection. Inpatient separations and bed days are from the WA Hospital Morbidity Data System via Clinical Modelling

The preliminary data for 2009/10 demonstrates an increase in inpatient separations of approximately 14% and in increase in ED OOS of 4% between 2008/09 and 2009/10.

7.3.2 Summary of Projected Service Profile

The projected demand for inpatient services at Carnarvon is based on the ABS Series B+ population forecasts. Detailed projections for the WACHS small hospitals, based on ABS Series B+ modelling, have not been undertaken. However, an estimation of future activity can be sourced for Exmouth Hospital from the AIM (Hardes) 2007/08 modelling tool, which was based on ABS Series C.

The activity projections presented below for Carnarvon Hospital incorporates the assumptions outlined in Section 7.2.3. The data for Exmouth hospital, however, represents a status quo model, i.e. forecast population growth and demographic trends in the absence of strategies to change the existing referral patterns and/or service mix.

Table 24: Projected demand: Inpatient Activity WACHS Gascoyne (2011/12–2020/21)

Hospital	2008/09		2011/12		2016/17		2020/21	
	Seps	Beddays	Seps.	Beddays	Seps.	Beddays	Seps.	Beddays
Carnarvon	1,236	2,998	1,814	4,767	3,053	6,042	3,796	6,890
Exmouth	361	836	436	1,448	480	1,612	529	1,773
Total	1,597	3,834	2,113	5,870	3,387	7,262	4,184	8,267

Excludes unqualified neonates. Boarders are included.
Source (Carnarvon): WACHS Area Office. Inpatient Demand Modelling Pivot – based on ABS Series B+;
Source (Exmouth): AIM (Hardes) 2007/08 modelling tool – to be used as a guide only

By 2021, it is projected that the number of beddays at Carnarvon will be approximately 6,890. If the number of acute care beds remains at 25, then Carnarvon Hospital will need to operate at occupancy rate of over 75%. Based on the modelling undertaken, the WA Clinical Services Framework recommends an increase in overnight bed numbers from 15 to 17 beds and the number of sameday beds to remain at 10. This will provide a total complement of 27 acute care beds. In addition, as outlined in section 7.5, it is proposed that a four chair satellite outreach renal dialysis service be developed in Carnarvon (WACHS Draft Renal Plan -2010).

For Exmouth Hospital to meet the demand for acute inpatient services by 2021, assuming an ongoing complement of 8 inpatient beds, an occupancy rate of approximately 60% will be required.

7.3.3 Medical Services

Current Service Model

Medical services to Carnarvon and Exmouth hospitals are provided by the local salaried GPs and a range of visiting medical specialists providing:

- General medicine
- Cardiology
- Gerontology
- Dermatology
- Paediatrics
- Rheumatology
- Urology
- Orthopaedic (outpatients)
- Opthomology (outpatients)
- Immunology (services needs of HIV cohort)
- Palliative Care

- Gynaecology
- ENT
- Radiology

The activity for inpatient medical services in Carnarvon and Exmouth hospitals is outlined in the tables below. The data shows that there was a 12% decrease in multi-day admissions for medical services at CHC between 2006/07 and 2008/09. However, there has been a 5% increase in same-day medical admissions over the same period.

Table 25: Medical services activity for Carnarvon Hospital (2006/07 – 2008/09)

Hospital	Number of separations			% change
	2006/07	2007/08	2008/09	
Same-day	139	150	146	5%
Multi-day	601	606	528	-12%
Total	740	756	674	-9%

Data Source: Hospital Morbidity Data System via Clinical activity modelling
Excludes unqualified neonates and boarders.

Due to the low patient volumes, activity for Exmouth hospital has been grouped into medical/surgical/other activity. Based on the service mix at Exmouth, it is acknowledged that the activity largely relates to medical admissions. The grouping excludes activity relating to obstetrics, paediatric, mental health, non-acute and boarders.

An increase in same-day admissions occurred between 2006/07 and 2008/09, however overall activity has been steady over this period.

Table 26: Medical/Surgical/Other services activity for Exmouth Hospital (2006/07 – 2008/09)

Hospital	Number of separations			% change
	2006/07	2007/08	2008/09	
Same-day	55	93	76	38%
Multi-day	215	199	198	-8%
Total	270	292	274	1%

Data Source: Hospital Morbidity Data System via Clinical activity modelling
Excludes unqualified neonates and boarders.

Projected Service Profile

In line with population growth, the number of medical admissions to Carnarvon Hospital is anticipated to grow steadily in future years, as outlined in Table 27.

Table 27: Projected medical activity for Carnarvon Hospital (2011/12 – 2020/21)

	Number of separations		
	2011/12	2016/17	2020/21
Total Medical Activity	769	864	984

Source: WACHS Inpatient Demand Modelling Pivot. Projections based on ABS Series B+ population projections
Excludes unqualified neonates, boarders and projections for renal dialysis.

7.3.4 Surgical Services

Current Service Model

Almost all of the surgical services provided in the Midwest are provided at the Geraldton Hospital, with some low risk elective procedures undertaken in Carnarvon. The number of operations in Carnarvon average around 30 cases a month.

The salaried medical officers in Carnarvon provide anaesthetics and some minor surgery. Surgical services are also provided by the following visiting surgical specialists:

- General surgery (monthly, outpatients and surgery);
- Gynaecology (monthly, outpatients and surgery);
- Ophthalmology (monthly, outpatients and minor procedures only);
- ENT (should be three – four monthly, presently no service); and
- Orthopaedics (three monthly, outpatients only)

Pre-admission and Pre-anaesthetic clinics provided by the hospital, are run by the Operating Theatre coordinator.

Minor elective surgical day only procedures, for example removal of lesions and wound repair, are undertaken by the GPs at Exmouth. No major elective or non-elective surgery is undertaken.

The multiday and same-day surgical activity for Carnarvon Hospital from 2006/07 to 2008/09 is outlined below. Surgical activity increased significantly over this time period.

Table 28: Surgical Services for Carnarvon Hospital (2006/07 – 2008/09)

Hospital	Number of multi-day separations			% change
	2006/07	2007/08	2008/09	
Same-day	50	105	102	104%
Multi-day	23	64	43	87%
Total	73	169	145	99%

Data Source: Hospital Morbidity Data System via Clinical activity modelling

Projected Service Profile

It is proposed that the number of same-day surgical admissions at Carnarvon Hospital will increase by 115% between 2008/09 and 2020/21. Multi-day surgical activity will remain relatively stable at approximately 65 separations per year.

Table 29: Projected surgical activity for Carnarvon Hospital (2011/12 – 2020/21)

Carnarvon Hospital	Number of separations		
	2011/12	2016/17	2020/21
Same-day surgical activity	143	182	219
Multi-day surgical activity	66	64	66
Total surgical activity			

Source: WACHS Inpatient Demand Modelling Pivot. Projections based on ABS Series B+

Identified Issues and Challenges – Medical & Surgical Inpatient Services

- Staff report limited understanding from Perth metropolitan hospitals about the lack of community supports available in the Gascoyne when patients are discharged.
- The existing 25-bed overnight capacity at Carnarvon Health Campus will be adequate to meet demand however the four-bed rooms that currently exist will need to be remodeled which will require refurbishment or redevelopment of the ward areas.

Proposed Service Model / Key Service Strategies

Medical & Surgical Services
Recommendations
A designated day surgery unit is required to enhance bed efficiency and throughput and provide a more comfortable path for patients. The provision of a day surgery unit would allow a reconfiguration of acute hospital beds that may be utilised to provide a more appropriate level of care.
The model whereby GPs and visiting medical specialists provide medical services will continue. Increases in service delivery will be dependent on the availability of visiting specialists and other private providers.
Review the patient care pathway for medical and surgical services WACHS Midwest given the inclusion of the CT Scanner at Carnarvon.
Ensure subsequent service and facility planning processes include a focus on engaging with the local Aboriginal people to facilitate the development of culturally secure services where Aboriginal people feel welcomed and comfortable accessing local healthcare facilities.

7.3.5 Obstetrics Services

Current Service Model

The majority of high risk deliveries for Gascoyne district residents are managed in Perth.

Carnarvon Hospital has the capacity to provide normal risk obstetric care under the following model:

- obstetric care is provided via a multidisciplinary model (midwives, salaried doctors, Aboriginal Medical Service);
- the service is a shared care model and conducts clinics at the Carnarvon Health Campus and home visits as required;
- mobile clinics are provided in the community for Aboriginal pregnant women;
- an on call roster for doctors exists to provide seamless out of hours medical cover;
- GP surgeons provide cover for caesarean sections, both elective and emergency with GP anesthetic support; and
- midwifery led antenatal classes are held throughout the year.

As the service only delivers low risk women, it is important early in pregnancy for high risk women to be identified and provided with appropriate support, including a defined and planned care pathway to delivery in Geraldton or the metropolitan area.

There is no capacity for deliveries at Exmouth hospital.

A Mothers and Babies program, branded the True Culture True Care (TCTC) program commenced in July 2009 with the aim of improving health outcomes for Aboriginal mothers and babies in the Gascoyne. The program is funded by the Office Aboriginal and Torres Strait Islander Health (OATSIH) and involves the following areas of focus:

- antenatal care;
- breast feeding;
- child hearing checks;
- child health checks; and
- school readiness that includes teaching protective behaviors and working with the Early Years Team.

The program is funded to be staffed by one FTE Clinical Manager, one FTE community midwife and one FTE Aboriginal Health Worker. Advice from OATSIH in October 2010 is that this funding will be recurrent.

Historical and projected number of deliveries at Carnarvon Health Campus, including vaginal and caesarean deliveries, are outlined in the table below. A steady increase in deliveries is forecast, however this will be dependent on the growth in population relating to young families and will require monitoring.

Table 30: Recent and projected deliveries at Carnarvon Hospital (2007/08 – 2009/10)

	Historical			Projected		
	2007/08	2008/09	2009/10	2011/12	2016/17	2020/21
Number of Deliveries	112	77	107	132	138	144

Source: HCARe & TOPAS via ATS Data Warehouse & WACHS Inpatient Demand Modelling Pivot (based on ABS Series B+)

Identified Issues and Challenges

- With an ageing midwifery workforce, difficulties retaining midwives and growing consumer expectations, sustainable models of midwifery care need to be considered for Carnarvon. At present the midwives work across both general and obstetrics areas.
- Ordering of routine ultrasounds can only be made by Medical Officers. This potentially creates barriers to access and care, especially for Aboriginal women.

Proposed Service Model / Key Service Strategies

Obstetrics Services
Recommendations
At the time of writing this Service Plan, a review considering the feasibility of transitioning to an alternative midwifery led model of care service was being undertaken. Midwives at present are employed to work in Midwifery and General areas.
WACHS to investigate the potential for midwives to change the current restrictions on ordering of routine ultrasounds with the Radiological Council of WA.

7.3.6 Paediatrics Services

Current Service Model

Visiting paediatrics services are provided monthly to Carnarvon and approximately every three to four months to Exmouth. The paediatrician previously visited Burringurrah, however the transient nature of the population makes planning the delivery of this service difficult as there was frequently very few or no patients. This is being monitored and the paediatrician is able to attend Burringurrah if/as required.

There is an inpatient Paediatric Ward at Geraldton, however the majority of paediatric patients presenting to Gascoyne facilities are transferred to Perth if they require inpatient admission.

Paediatric inpatient activity across the Gascoyne has remained relatively steady in recent years, as outlined in Table 31

Table 31: Paediatric Services activity, by WACHS Gascoyne hospital (2006/07 2008/09)

Hospital	Number of separations		
	2006/07	2007/08	2008/09
Carnarvon	115	138	121
Exmouth	29	18	36

Data Source: Hospital Morbidity Data System via Clinical activity modelling

Projected Service Profile

Paediatrics activity at CHC is projected to remain relatively static between 2011/12 and 2020/21. However activity will be dependent on the growth in population relating to young families and will require monitoring as planning processes continue.

Table 32: Projected paediatrics activity for CHC (2011/12 – 2020/21)

Carnarvon Hospital	Separations		
	2011/12	2016/17	2020/21
Paediatrics	155	154	151

Source: WACHS Inpatient Demand Modelling Pivot. Projections based on ABS Series B+ population projections. Includes ages 0 – 14 inclusive. Data excludes unqualified neonates and boarders.

Proposed Service Model / Key Service Strategies

Paediatric Services
Recommendations
The current visiting model for paediatrics services is anticipated to continue.

7.3.7 Mental Health Services

Current Service Model

There are no authorised or secure inpatient mental health beds within the Gascoyne District. Highly acute mental health clients are held on the general ward area until transfer to Perth, usually by RFDS.

Mental health clients on the ward are managed by salaried doctors and nursing staff in conjunction with the Central West Mental Health team. Community Mental Health Services are described in section 7.5.5.

As outlined in the table below, Mental Health inpatient activity in Carnarvon decreased between 2006/07 and 2008/09, while activity increased at Exmouth.

Table 33: Mental Health Inpatient activity, by WACHS Gascoyne hospital (2006/07 2008/09)

Hospital	Number of separations		
	2006/07	2007/08	2008/09
Carnarvon	100	92	86
Exmouth	30	35	36

Data Source: Hospital Morbidity Data System via Clinical activity modelling

Projected Service Profile

Minimal growth in mental health inpatient activity is expected for Carnarvon. This is due to planned improvements in the community based management of these clients despite the general trend for increasing demand for mental health services.

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Table 34: Projected mental health activity for CHC (2011/12 – 2020/21)

Carnarvon Hospital	Separations		
	2011/12	2016/17	2020/21
Mental Health	103	107	112

Source: WACHS Inpatient Demand Modelling Pivot. Projections based on ABS Series B+ population projections

Key Issues and Challenges

- Staff report delays in transferring mental health patients by RFDS to authorised metropolitan inpatient facilities.
- There is no inpatient mental health unit in Geraldton
- Transfer of mental health patients to the metropolitan area for inpatient care can be traumatic for patients and family and may result for the patient (both Aboriginal and non-Aboriginal) in a feeling of dislocation due to cultural insecurity.
- There is a need to work collaboratively with the local drug and alcohol team to address significant co-morbidity issues using a brief intervention model during inpatient admissions.
- A lack of dedicated resources means that mental health promotion and illness prevention programmes are minimal and difficult to sustain.
- High number of Aboriginal clients requires ongoing cultural awareness orientation and training for all staff.

Proposed Service Model / Key Service Strategies

Mental Health Services
Recommendations
There are no plans to have dedicated authorised mental health beds at Carnarvon. The health service is considering the development of an Acute Psychiatric Unit (APU) in Geraldton. Transfers of highly acute mental health patients to Perth will continue.
With improved ED configuration, Carnarvon Hospital will need to review the model of care for holding acute mental health patients until transfer is possible. The review should focus on ensuring a safe and efficient environment for the workforce, the patient, other patients and visitors. This would include determining the best location for observation beds for mental health patients awaiting transfers.
It is proposed that the level of integration and cooperation between the Community Mental Health Team, Alcohol and Other Drug Team, GPs, Geraldton based psychiatrists and other stakeholders will improve to better meet the acute care needs of mental health patients in Carnarvon.
Develop improved mental health promotion and illness prevention programmes in conjunction with the Alcohol and Other Dugs team and Population Health.

7.3.8 Alcohol and Other Drug Services

Current Service Model

There is no dedicated inpatient drug and alcohol service in the Gascoyne. There is, however, a Community Drug Services Team located on the Carnarvon Health Campus, as described in Section 7.5.6.

Patients are admitted for inpatient detoxification on a case by case basis.

7.3.9 Palliative Care

Current Service Model

There is a Palliative Care Coordinator and Cancer Care Coordinator based in Geraldton.

Community palliative care in Carnarvon is provided through a contract with Silver Chain. Care coordination is provided by hospital inpatient nursing staff through team meetings and Cancer Link meetings via videoconference. In Exmouth, palliative care service provision is guided through the community care program where registered nursing staff provide domiciliary based services and support to clients and families.

Inpatient Palliative care is modelled on the Liverpool Care Pathway, a multidisciplinary template which outlines best practice for care of the dying irrespective of diagnosis or the setting of care. Clients can be admitted to the Carnarvon or Exmouth hospitals for acute care relating to symptom control and associated sequelae. They can also be admitted as part of the respite services.

Key Issues and Challenges

- The current palliative care coordination system is under resourced and lacks expertise. There is a reported need for at least one FTE of dedicated Cancer/Palliative Care coordination for the Gascoyne District.
- At the time of the writing of this Service plan, there is a strategic planning process being undertaken for the Midwest Regional Cancer Centre and Regional Services.

Proposed Service Model / Key Service Strategies

Palliative Care Services
Recommendations
Recommend recurrent funding for one FTE of dedicated Cancer/Palliative Care coordination for the Gascoyne district.
The Regional Coordinators are currently mapping cancer services for the whole region and the implications for the Gascoyne will need to be addressed once this has been finalised.
Address issues arising from the new model of care being developed for WACHS palliative care services, as outlined in the WACHS Operational Plan 2010-2011.

7.3.10 Aged Care

The Carnarvon Health Campus currently provides 15 residential aged care beds and one respite care bed. The residential care wing of the hospital is not fit for purpose and one of the key strategies for the Gascoyne District Health Service is to provide a dedicated residential aged care service with sufficient capacity to meet demand.

Although the intention was to attract a private aged care provider to develop and operate an aged care facility in Carnarvon, it has been confirmed that private providers are not interested in pursuing this due to financial viability concerns. It is therefore proposed that WACHS enter into a Multi Purpose Service (MPS) agreement with the Commonwealth for the provision of residential aged care services in Carnarvon. This will be dependent on the allocation of adequate capital funding from the Commonwealth Government. Recurrent MPS funding would be provided by the Commonwealth.

This is outlined in further detail in Section 7.6.

7.4 Emergency Services

Current Service Profile

Carnarvon

The Carnarvon Hospital ED has a salaried doctor-led model of care and is staffed for ten hours a day, seven days a week with the remainder of the day covered by on call doctors. There is 24 hour on call for anaesthetics, obstetrics and minor surgery. The model of care involves GPs and registered nurses working together to deliver emergency care within their scope of practice.

Upon arrival, patients are triaged and attended to by nursing staff and/or a GP in a consult room or treatment bay. More recently, patients assessed to require wound management are referred to a wound care service available three days per week.

Medical and nursing staff at Carnarvon Hospital will arrange transfers of acutely ill patients directly with RFDS predominately from ED or ward areas to Perth. On occasion, Carnarvon receives transfers via local ambulance services from Shark Bay.

Table 35 outlines the historical and projected number of presentations to Carnarvon Hospital's Emergency Department. In recent years, the number of presentations to the CHC Emergency Department has remained relatively steady. Preliminary analysis of data from 2009/10 (awaiting coding completion at the time of writing) reveals an increase in presentations between 2008/09 and 2009/10 of 2%.

Significant growth in ED activity growth is forecast to 2020/21 in line with the population projections for the district (ABS Series B+). Although it is projected that the number of ED presentations will increase by 28% between 2011 and 2021, the presentations for triage 5 categories are anticipated to decrease due to local GPs managing a greater volume of these presentations.

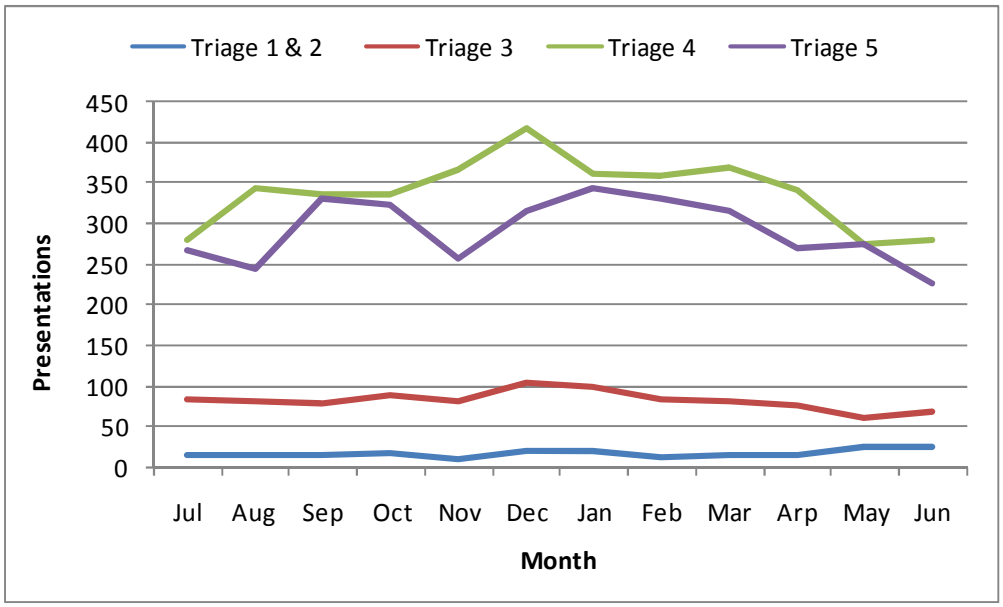
Table 35: Carnarvon Health Campus: current and projected ED activity, by triage category.

Triage	Historical presentations			Projected Activity		
	2006/07	2007/08	2008/09	2,011	2,016	2,021
Triage 1	9	11	7	13	16	21
Triage 2	171	155	195	247	334	438
Triage 3	1,364	1,028	986	1,397	1,728	2,083
Triage 4	4,564	4,196	4,060	5,359	6,842	8,377
Triage 5	2,759	4,493	3,498	3,018	2,477	1,922
Total	8,867	9,883	8,746	10,034	11,397	12,841

Source: Emergency Department Data Collection; WACHS ED Projections Pivot (Based on ABS Series B+)

The number of presentations to the Carnarvon Emergency Department is relatively stable throughout the year.

Figure 9 Presentations in Carnarvon Hospital by triage, 2008/09



Source: Emergency Department Data Collection

Exmouth

Exmouth has a 24 hour nurse triage service with on call support from salaried medical staff (GPs). The Exmouth GPs provide on-call telephone advice for emergency presentations to the Coral Bay nursing post. If required patients from Coral Bay are sent by road ambulance to Exmouth or by RFDS to Carnarvon or Perth.

The historical and projected number of emergency presentations to Exmouth MPS are outlined below. Emergency presentations are projected to increase by 17% between 2011 and 2021. As with Carnarvon, the number of presentations for triage 5 categories is anticipated to reduce significantly due to the planned increase in management of these presentations by local GPs.

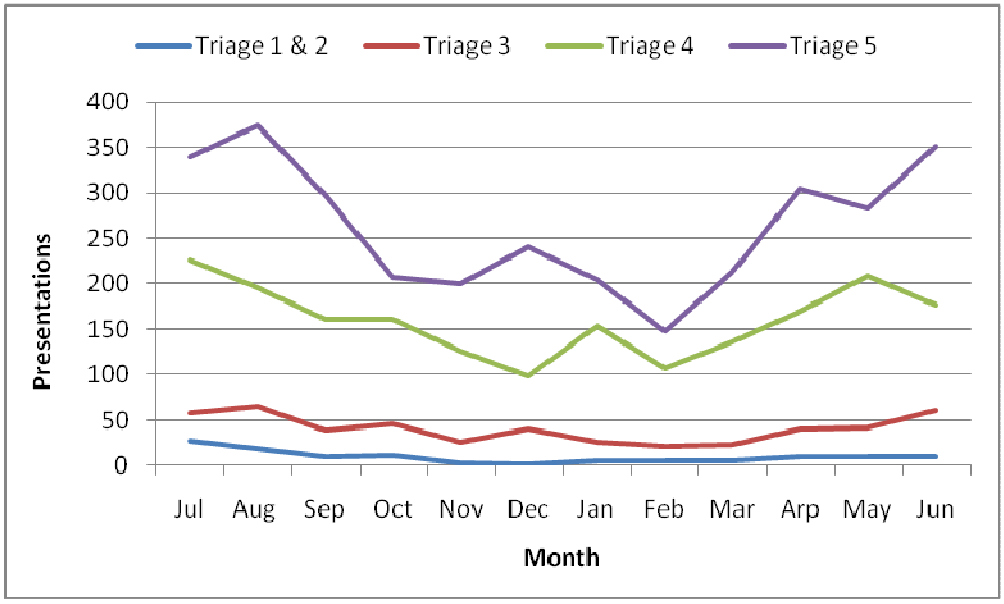
Table 36: Exmouth MPS: current and projected ED activity, by triage category.

Triage	Historical presentations			Projected Activity		
	2006/07	2007/08	2008/09	2,011	2,016	2,021
Triage 1	8	6	5	4	4	5
Triage 2	120	240	123	152	202	259
Triage 3	439	530	490	669	837	1,013
Triage 4	1,529	1,685	1,916	2,498	3,273	4,082
Triage 5	2,759	2,850	3,168	2,810	2,338	1,803
Total	4,855	5,311	5,702	6,132	6,654	7,161

Source: Emergency Department Data Collection; WACHS ED Projections Pivot (Based on ABS Series B+)

There is a notable seasonal trend associated with the presentations to Exmouth ED, as demonstrated in Figure 10.

Figure 10 Presentations in Exmouth hospital by triage, 2008/09

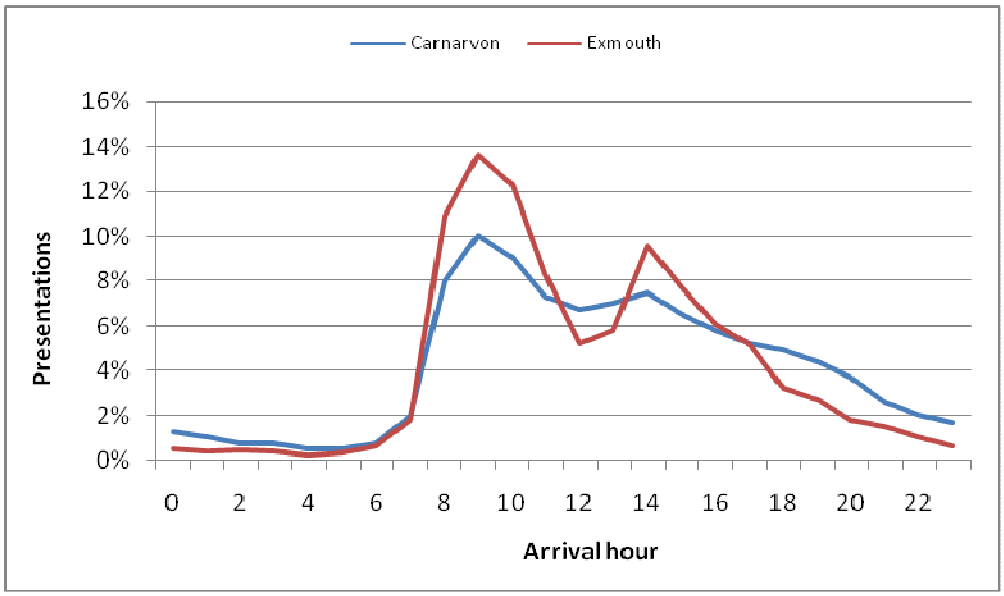


Source: Emergency Department Data Collection

Presentations to Carnarvon and Exmouth hospitals by arrival hour and day

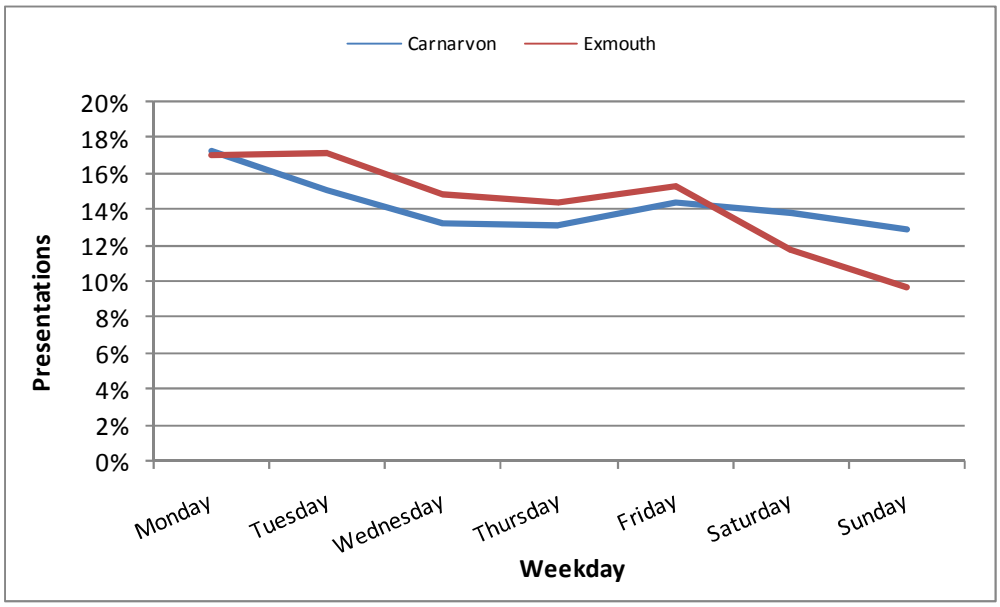
The following figures demonstrate the trends in emergency presentations by arrival hour and day of the week. It is noted that similar trends have occurred between 2004/05 and 2009/10.

Figure 11 Presentations in Carnarvon and Exmouth hospitals by arrival hour, 2008/09



Source: Emergency Department Data Collection

Figure 12 Presentations in Carnarvon and Exmouth hospitals by arrival day, 2008/09



Source: Emergency Department Data Collection

Coral Bay and Burringurrah Nursing Posts

The number of emergency presentations to Coral Bay and Burringurrah nursing posts in 2008/09 was 488 and 110 respectively. Accurate data relating to the years prior to 2008/09 is not available for the nursing posts. The percentage of the presentations in 2008/09 relating to triage 4 and 5 categories was 89% for Coral Bay and 92% for Burringurrah.

Ambulatory Other Domiciliary (AOD) Presentations

It is acknowledged that a significant number of ED presentations are GP, nursing and allied health type assessments. This is reportedly due to a community expectation by some patients of not wanting to wait longer than a day to see a GP. These presentations are categorised as AOD (Ambulatory Other Domiciliary) and are not included in ED statistics.

The total number of AOD presentations for each Gascoyne facility in 2008/09 is outlined below:

Table 37: Ambulatory Other Domiciliary Presentations (2008/09)

	Carnarvon	Exmouth	Coral Bay	Burringurrah
AOD (2008/09)	36,784	19,224	424	1,826

Source: AOD pivot

It is proposed that in the future these patients will be managed in an ambulatory care setting rather than the emergency departments.

Emergency Transfers via RFDS

The following table outlines the number of RFDS transfers that occurred in 2008/09 relating to Gascoyne residents.

Table 38: RFDS Transfers 2008/09

	Life Threatening	Urgent	Non-urgent	Total
RFDS Transfers	18	82	89	189

Source: RFDS

Summary of Projected Service Profile

Demand modelling by WACHS Area Office shows that the current number of ED treatment spaces at Carnarvon Health Campus (one resuscitation bay and three treatment bays) will be insufficient to meet future demand.

Exmouth MPS currently has one resuscitation bay and two treatment bays. The requirement for three bays is projected to continue to 2020/21. Emergency Department treatment space is projected to increase by one to meet demand.

The projected demand and treatment space requirements for Carnarvon and Exmouth hospital are highlighted in the Table below.

Table 39: Projected demand: Emergency Department Services, WACHS Gascoyne (2011/12 - 2020/21)

Hospital	2011/12		2016/17		2020/21	
	Present.	bays	Present.	bays	Present.	bays
Carnarvon	10,033	4	11,396	5	12,841	6
Exmouth	6,132	3	6,654	3	7,161	3
Total	16,165	7	18,050	8	20,002	9

Source: WACHS ED Projections Pivot (Based on ABS Series B+)

The following benchmarks were applied in calculating the projected number of WACHS ED bays required.

Table 40: ED Planning Benchmarks

Measure	Treatment Space	Benchmark	Source
ED Attendances (all ages)	Fast Track	1/3000 yearly T4 and T 5 attendances	Adapted from Emergency Demand Treatment Space Calculator, The Advisory Board Company, 2009
	General ED	1/1000 yearly T 2 and T3 attendances	
	Trauma/Critical Care	1/500 yearly T1 attendances	

Source: WACHS Planning Team

Identified Issues and Challenges

Carnarvon

- The Clinical Services Framework recommends that Carnarvon maintain a level 3 ED service.
- Potential hazards such as cyclones and the level of remoteness reflect Carnarvon Hospital's classification as a Group 3 facility for disaster preparedness. This has implications for ED service delivery and facility configuration.
- The waiting room for ED is often congested and patient confidentiality at triage is an issue
- The current ED has one resuscitation bay and three treatment bays which is insufficient for the level of activity managed by ED. One bay has been set up in a corridor adjacent to the main ED room.
- There are insufficient consult rooms for the number of GPs employed
- There is limited access to clerical support and medical records after-hours.
- The design of the ED does not facilitate efficient or safe patient and staff flows within the department and between ED and medical imaging and inpatient services.
- It is reported that the number of Ambulance service volunteers is reducing. The sustainability of the St John Ambulance volunteer workforce is an issue identified across the district.

Exmouth

- It is reported that the number of Ambulance service volunteers is reducing. The sustainability of the St John Ambulance volunteer workforce is an issue identified across the district.

Nursing Posts

- Nurse escorts provided out of Coral Bay and Exmouth have an impact on the health service given the towns are 150km apart.
- Coral Bay Nursing Post currently provides services from two shop fronts in the shopping centre that do not meet contemporary standards.

- Coral Bay has increased the number of caravan licenses resulting in an increase in the number of tourists over the Christmas period. This may impact on demand for services provided by this nursing post.
- At the time of writing this Service Plan, one of the Registered Nurses at Coral Bay was about to be awarded Nurse Practitioner Status.

7.4.1 Key Service Strategies / Proposed Models of Care

Emergency Services
Recommendations
The current doctor led model of care at CHC to continue. Future models of care would need to consider the role of nurse practitioners across the health service.
A Full-time Nurse Practitioner could provide advanced nursing assessment, diagnosis, care and intervention to patients and families within the scope of practice of a Nurse Practitioner in emergency care.
At the time of writing, a submission was with the Commonwealth proposing to bill Medicare under Exemption 19(2) of the Medicare act for GP services on the Carnarvon Hospital site. This model would improve access to GP services and promote a greater level of integration between GP services, ED, ambulatory care and community mental health services.
The transfer of patients via RFDS to Perth or Geraldton and from surrounding areas will continue, with potentially more transfers to Geraldton through a dedicated clinical coordination service that operates in conjunction with the RFDS.
Explore opportunities to increase clerical and ICT support within the Carnarvon ED and increase the use of Telehealth technology to support ED practice.

7.5 Ambulatory Health Care Services

Ambulatory Health Care Services is a broad title that generally refers to the planned services provided to patients who are able to 'walk in and walk out' on the same day e.g. procedural day surgery, outpatient services, community based clinic services (child health, school health, community health) and community based programmes such as community mental health services.

Ambulatory Care facilities are usually staffed by nurses and allied health with procedural or specialist medical input provided in a planned and structured way. Depending on resourcing and availability, community based mental health services will provide varying levels of crisis/emergency response.

Ambulatory Care Services provided for Gascoyne residents are outlined below.

7.5.1 Outpatient Services

The following outpatient services are provided at Carnarvon through visiting medical specialists: endoscopy, gastroenterology, gynaecology, general surgery, ear/nose/throat (ENT), radiology, ophthalmology, geriatric medicine, general medicine, urology, dermatology, rheumatology and echo-cardiology.

Visiting specialists also attend Exmouth to provide ENT, endoscopy, opthalmology, gynaecology, general medicine, paediatrics and dermatology outpatient services. A number of specialists also attend the nursing posts at Coral Bay and Burringurrah, as outlined in Table 19.

Nursing and allied health outpatient services are also provided. Nursing services are provided at all four Gascoyne facilities and include wound management, exercise stress testing, injections, blood collection, infusion administration, women's health, men's health, antenatal services. A social worker, therapy assistant and diabetes educator are based in Exmouth. All other allied health services provided for local Gascoyne residents are provided through visiting staff based in Carnarvon.

7.5.2 Renal Dialysis

Gascoyne residents requiring renal dialysis services currently attend Geraldton Health Campus or Perth metropolitan facilities. However there is an identified need for a local renal dialysis services in Carnarvon.

7.5.3 Chemotherapy

The only dedicated chemotherapy unit in the Midwest in provided in Geraldton.

Proposed Service Model / Key Service Strategies

Outpatient Services, Renal Dialysis & Chemotherapy
Recommendations
Provide staff assisted renal dialysis in Carnarvon through a four chair satellite outreach service (WACHS Renal Dialysis Plan 2010-2021). Planning for this service will need to consider the potential requirement for future expansion. The service in Carnarvon would be supported by the Geraldton satellite service and Royal Perth Hospital, with dialysis sessions linked by videoconference for remote monitoring.
Explore the notion of a 'one stop shop' for all ambulatory type health services as a way of integrating operations and assisting the patient to navigate the continuum of care, particularly for those patients presenting with multiple co-morbidities.

7.5.4 Population Health Services

WACHS - Population Health Service is an essential element of the continuum of care for the Gascoyne Health District. Population Health aims to prevent illness and injury by providing health and wellbeing programs and services to the community. Services include:

- Early years/early childhood, adolescent and parenting initiatives mainly through child health, school health and community health generalist nursing services;
- Child development and disability services;
- Communicable disease control including immunisation;
- Allied health including primary health, rehabilitation and outreach services;
- Health enhancement including health promotion, health screening for early detection and management of acute and chronic disease; and
- Injury prevention and other risk mitigation initiatives (such as smoking prevention/cessation, mental health promotion).

WACHS – Midwest Population Health is a regional service coordinated from Geraldton with a range of resources located in the Gascoyne District to provide services to local residents. Population health staff provide services and programs in a range of settings across the Gascoyne Health District including community health centres, child health clinics, hospitals, homes and schools. Most staff are based at the Carnarvon Community Health Centre, with some resident services in Exmouth.

Breastscreen WA provide a visiting service to the Gascoyne district once a year.

Table 41: Gascoyne Population Health Services

Location	Population Health Services
Carnarvon Community Health Centre	Child health, community health, school health, continence management and education, sexual health, diabetes management and education, disease control, health education/promotion, injury prevention, HIV/AIDS, women's health and drug and alcohol services.
Exmouth MPS	Community health, immunisations, diabetes education, women's health, chronic disease coordination.

Key Issues and Challenges

- There are a growing number of non English speaking residents moving into the district. There is a limited interpreter service which makes it difficult to provide health care to these clients.
- In Carnarvon, Community and Primary Health services are provided from scattered areas of the hospital and given the design constraints of the current building, they cannot be amalgamated.
- Staff from a broad range of community based programs report an inadequate number of allied health staff across the district. Allied Health services in Exmouth have been reported to be particularly ad hoc due to staffing shortages. This is particularly problematic given the number of clients who have complex comorbidities.
- The current Child Health facility in Exmouth is located in a leased building in town that was not purpose built for its function.
- There are no dedicated diabetic education services
- There is a need to enhance the provision of preventative health services in Exmouth.

Proposed Service Model / Key Service Strategies

Population Health
Recommendations
Collocate all Carnarvon based Population Health staff together in a 'one stop shop' environment.
It is proposed that a Ambulatory Health Care wing be developed on the Exmouth Hospital site so that Community, Mental and Primary health services can be provided in a coordinated fashion.
Explore feasibility of providing diabetes education services – one option will be to use revenue received through the Medicare exemption S19.2 program to arrange for referrals o the private Diabetes Educator in Carnarvon. It is otherwise acknowledged that this position may be difficult to recruit to.
Increase focus on health promotion programs and chronic disease management. Collaborate with health and community partners to increase awareness of health promotion issues, especially focusing on mental health and AOD collaboration.
Provide a local health promotion presence in Coral Bay & Exmouth. Staff report that the service is currently reactive and not proactive. It is intended that health prevention services will be strengthened through revenue received from the Medicare exemption S19.2.
Address issues arising from the new model of care being developed for WACHS chronic disease services, as outlined in the WACHS Operational Plan 2010-2011.
Implement expanded child development services and trachoma screening as directed by the WACHS wide approach (WACHS Operational Plan 2010-11, Revitalising Action 7)
Explore the feasibility of the Coral Bay Nursing Post being relocated to the multi-purpose Government building currently being planned for the town.

7.5.5 Community Mental Health Services

The Central West Mental Health Service provides confidential assessment, treatment and management of all major mental health illnesses in the Midwest, Murchison and Gascoyne Districts.

The Carnarvon Service is located on a separate site from the hospital. It consists of a Team Leader, four clinical staff (one who is based in Exmouth and also provides a regular visiting service to the Pilbara town of Onslow), mental health workers & a pilot project team for perinatal mental health. A consultant psychiatrist visits monthly from Geraldton.

Services currently provided:

- Adult; (aged 18–65 years) - assessment, counseling, inter-agency referral, case management and education.
- Child and Adolescent; (0–18 years) – therapy, assessment, counseling, inter-agency referral, case management and education.
- Elderly over 65 years (45+ years for Aboriginal clients) as for adult services & working in collaboration with ACAT & other senior services.
- Psychiatric services – currently provided by visiting Psychiatrist.

- Aboriginal Mental Health services, including monthly outreach services to Onslow.
- Perinatal mental health; pilot project targeting Aboriginal mothers with children up to the age of three. Providing information, support & referral both antenatal & postnatal in relation to post natal depression & anxiety.
- Outreach services to Shark Bay, Coral Bay, Onslow, & Burringurrah Aboriginal Community;

After hour services are provided by Rural Link, a 24 hour Telephone Crisis Line or Carnarvon Hospital.

Services are offered in a range of settings and across a continuum of care. These settings include home visits, hospitals, health clinics, schools, police stations & other interagency departments.

Key Issues and Challenges

- Existing mental health services are provided off site in reportedly inappropriate accommodation. The location of the service reduces the capacity of mental health staff to provide a timely response to ED.
- There is an increasing level of need and unmet demand for mental health services, particularly relating to access to the visiting Psychiatrist service.
- There are a number of Mental Health presentations after hours, many of which are drug or alcohol related. There is currently no on call Mental Health staff available making it difficult for these patients to be appropriately managed in ED.
- The coverage for Mental Health services in Exmouth is limited with only one Mental Health worker providing cover 6 days / fortnight. The other 4 days in the fortnight is to cover the Onslow area.
- Service human resource limitations results in a necessary focus on acute treatment at the expense of ongoing care for patients with long standing chronic conditions.
- There is a lack of capacity to provide mental health promotion and illness prevention services
- There is an indentified increasing need to work closely with the Community Drug Service team to more effectively manage patients with multiple co-morbidities.
- Insufficient visiting psychiatry services.

Proposed Service Model / Key Service Strategies

Community Mental Health
Recommendations
Explore the notion of a 'one stop shop' for all ambulatory type health services as a way of integrating operations and assisting the patient to navigate the continuum of care, particularly for those patients presenting with multiple co-morbidities. In particular, there is a need to link mental health and drug and alcohol teams together on the Carnarvon Health Campus. This is supported by the WACHS Operational Plan 2010-2011 (Revitalising Action 5)
Develop stronger operational and working relationships with the Community Drug Services team and Population Health to provide shared health promotion and illness prevention strategies across the health district
Link mental health and drug and alcohol teams together on the Carnarvon Health Campus. This is supported by the WACHS Operational Plan 2010-2011 (Revitalising Action 5)
The Commission for Mental Health is planning to publish a Strategic Plan and State wide operational policy for Mental Health Services across WA. Recommendations in this plan will need to be reviewed and incorporated in any future planning processes.
Increase visiting psychiatrist access through on site and telehealth options.

7.5.6 Alcohol and Other Drug Services

The Alcohol and Other Drug (AOD) Service is part of the regional Population Heath programme based in Geraldton and provides visiting services across the district. There is a Community Drug Services Team located on the Carnarvon Health Campus, however there is no dedicated AOD service provided in Exmouth.

There are currently four staff in the Carnarvon Office with a staff member coming up to Carnarvon monthly from Geraldton. The staff roles include:

- Prevention / Community Education Officer;
- Aboriginal Diversion Worker;
- Treatment Officer (broad counseling services including single session, group, couples and families); and
- Domestic Violence/Alcohol worker

Services cover the Gascoyne area, including inland to Burringurrah.

A number of data sources reflect the considerable burden of disease and lawlessness in Carnarvon relating to alcohol and drug use:

- Data provided by the Police demonstrate that approximately 20% of total offences within the Carnarvon Sub-District are alcohol related.
- The summary of alcohol related hospitalisations for Carnarvon Hospital suggests that there were approximately 463 people hospitalised for the period between 2002-2006. The associated total beddays was 2,235 at an approximate cost of $1.5m (Epidemiology Branch of Department of Health WA). Given this figure it is evident that the burden of alcohol related hospitalisations is significantly higher than the overall rate for WA.

- Data collected by the Community Drug Service Team in Carnarvon identifies that there has been a significant growth in the number of residents accessing treatments, from 76 in 2004/05 to 159 in 2008/09.

Identified Issues & Challenges

- Drug use in Carnarvon has increased over the past decade and the range of drugs used has broadened to include speed and amphetamines.
- There is a general perception across the district that the scope of drug and alcohol services is generally insufficient to meet the demands of the community.
- Drug and alcohol rehabilitation, information/education, treatment, follow up and co-morbidity services are not seen as effective.
- There are ongoing challenges managing complex co-morbidity patients who present with alcohol and other drug and mental illness.
- There is a lack of clarity as to which services a client should be directed to and at what stage they should be referred to the service. This is influenced by the lack of clear communication, referral and case management processes between agencies such as the Police, Community Drug Service Team, Community Mental Health, Carnarvon Hospital, Department of Child Protection and Department of Corrective Services.
- For clients returning to Carnarvon following treatment for drug and alcohol there is little support or programs for them.
- There is no sobering-up centre or men's shelter available in Carnarvon.

Proposed Service Model / Key Service Strategies

A scoping exercise in the establishment of a Sobering Up Centre/ Drug and Alcohol Rehabilitation Centre in Carnarvon was commissioned by the Drug and Alcohol Office (DAO) and undertaken by Quantum Consulting in 2009/10[24].

The report analyses a number of options to address the 'gaps' in the existing level of service provision in Carnarvon. The preferred option is to develop a 'dual purpose centre' which would provide support, mentoring and coaching programs in conjunction with a sobering-up shelter (overnight accommodation). Benefits of the 'dual purpose centre' include:

- Provides an increase scope and capacity for service provision relating to the assessment, treatment and rehabilitation of alcohol and drug clients.
- Builds the capacity of the overall specialist service provision in Carnarvon due to the recruitment of additional personnel.
- Increases the level of synergy between the existing service providers and the additional staff for the dual purpose centre.
- Provides a 'harm-reduction' service to the community, by providing an environment in which Police and other services will be able to refer alcohol and drug clients to, in order to reduce antisocial/illegal behaviour.

[24] Quantum Consulting June 2010, *Scoping exercise and feasibility study to assess the need for a residential alcohol and drug facility in Carnarvon,* Drug & Alcohol Office, Western Australia.

- Contributes to reducing the level of alcohol-related arrests made by Police, and the number of people placed in custody.
- Provides services to both Aboriginal and non-Aboriginal people.
- Provides employment opportunities for local Aboriginal community members.
- A cost-effective model given the level of usage and dual purpose of the facility.

Drug & Alcohol Services
Recommendations
Develop a dual purpose centre to provide support, mentoring and coaching programs during the day, as well as a sobering-shelter (overnight accommodation) as supported by the recent scoping exercise commissioned by the DAO.
Explore opportunities to improve Detox services, including the potential for a home Detox programme.
Establish a workforce strategy to support the proposed model of care for Drug and Alcohol services. This will need to include strategies for increasing the drug and alcohol resources available in the Gascoyne district.
Explore the notion of a 'one stop shop' for all ambulatory type health services as a way of integrating operations and assisting the patient to navigate the continuum of care, particularly for those patients presenting with multiple co-morbidities.
Improve and clarify which organisation/agency and staff members have responsibility for overall case management and supervision provided to the client, especially mental health services.
Work with health partners to support clients through safe houses for children, sobering centre and a detox clinic.
Address issues arising from the WACHS Plan for Drug and Alcohol 2010-2014 (as outlined in the WACHS Operational Plan 2010-2011).
Link mental health and drug and alcohol teams together on the Carnarvon Health Campus. This is supported by the WACHS Operational Plan 2010-2011 (Revitalising Action 5)

7.5.7 Community Aged Care

The Midwest Aged and Community Care Directorate (MACCD), based in Geraldton, offers a range of regional services. These include the Aged Care Assessment Team (ACAT), the Commonwealth Respite and Carelink Centre (CRCC) and the National Respite for Carers Program (NRCP), and Home and Community Care (HACC) contract management.

The WACHS Gascoyne aged care model includes:

- HACC services operating from Exmouth and through Silver Chain in Carnarvon.
- Community Aged Care Packages (CACP): 35 Carnarvon (Silver Chain), 6 Exmouth
- Extended Aged Care at Home packages (EACH): 5 Carnarvon (Silver Chain)

- Aged Care Assessment Team (ACAT) based in Geraldton, providing assessments for all Commonwealth funded programs eg CACPs and Residential Aged Care Facilities.
- A new geriatrician and psychogeriatrician service agreement was being implemented at the time of writing. This includes a geriatrician to visit the Gascoyne three times a year and the psychogeriatrician to visit once a year from 2011.
- Commonwealth Carer Respite and Carelink Centre (CRC) coordinated from Geraldton.
- Older Patients Initiative (OPI) – a risk screening program of non-Aboriginal people aged over 65 years and Aboriginal people over 45+ years over presenting to Emergency Departments
- Dedicated clinicians within WACHS Midwest Mental Health in Carnarvon provide mental Health services specifically for seniors.
- A social worker provides coordinated care programs for elderly and chronic disease clients.

Identified Issues / Challenges

- There are no HACC funded packages for residents in Burringurrah and Gascoyne Junction. With aging in place increasing this may need to be reviewed.
- The older person Initiative (OPI) has commenced in Geraldton, which has resulted in a reduction of re-admissions. However, the early referral required for OPI would overwhelm the current Allied Health team at Carnarvon.
- There are a growing number of non English speaking residents moving into the district. There is a limited interpreter service which makes it difficult to provide health care to these clients.
- There is no aged care coordinator for the Gascoyne district.
- There is limited space at Exmouth to run multiple specialty clinics
- Silver chain has an increasing demand on their service during peak holiday seasons, as existing silver chain clients, from other areas, can access the service whilst travelling.

Proposed Service Model / Key Service Strategies

Community Aged Care
Recommendations
Recommend recurrent funding for the provision of an aged care coordinator for the district.
Silver Chain, AMS and other partners have commenced a new day care centre service. It is currently for 18+ young disabled people and is running fortnightly. This service is a pilot program only and at the time of writing no recurrent funds had been sourced. It would be beneficial if the service could extend to elderly clients and increase in the number of days the service is provided.
Provide an appropriate level of interpreter services to cater for the growing number of non-English speaking residents.
Explore the feasibility of expanding the continence service

7.5.8 Community Aboriginal Health

Aboriginal Health forms a component of all services provided in the Gascoyne District. This includes primary medical care, acute in-patient services, community health and health promotion activities, schools programs, allied health services, ante-natal care, ACAT at 45 +, and the Older Patient Initiative at 45+.

A pre-natal pilot program for Aboriginal young women has been running for 18 months. It includes 1.5 FTE and targets young women to raise awareness of sexual health issues. The program provides education and support via schools in Carnarvon and Shark Bay.

The introduction of True Care, True Culture, as outlined above, has started to engage Aboriginal women in child birth and has provided significant improvements in maternity services for local Aboriginal women.

The Carnarvon Medical Service Aboriginal Corporation (CMSAC) is staffed by three medical officers and four Aboriginal Health Workers (AHW) and provides healthcare services to the Aboriginal people residing in Carnarvon and surrounding areas. The services provided are described in Section 6.

In addition to the CMSAC, WACHS funded Aboriginal Health Care Workers are based in Carnarvon, as well as at the nursing posts in Coral Bay and Burringurrah.

Identified Issues and Challenges

- The remoteness of communities,
- The significant levels of chronic disease and co-morbidities, including mental health and alcohol and other drug issues.
- Staff report that illness prevention and health promotion programs have been ineffective with this client group across the district.
- There is a lack of Aboriginal Health Workers in the public system.

Proposed Service Model / Key Service Strategies

Aboriginal Health
Recommendations
Currently there is a hospital based Aboriginal Liaison Officer (ALO) at Carnarvon. It is proposed that an additional ALO is required to focus on Community Health.
Improve cultural awareness training for staff and ensure regular and ongoing staff training provided by local Aboriginal people, especially for new staff.
Assist with the development of a region wide Reconciliation Action Plan and Aboriginal Health outcomes reports, in keeping with the WACHS Operational Plan 2010/11

7.5.9 Public Dental Care

Current Service Profile

There is currently no public dental service in Carnarvon. A private dentist does provide a part time service for Aboriginal clients at the Aboriginal Medical Service. The nearest Public dental clinics are at Geraldton (485 km) and Exmouth (360 Km)

The school dental scheme operates out of the Carnarvon Primary School for two months per year for school children only.

Exmouth

A one-chair dental facility is currently available in the Exmouth Hospital. There are no private dental practitioners in Exmouth, and therefore the public dental clinic is required to service the entire Exmouth community as well as providing a visiting service to Onslow.

The Exmouth/Onslow public Dental Service is provided by one full-time dental officer and dental clinic assistant.

Identified Issues and Challenges

- The lack of a public dental service means that Carnarvon residents need to travel to either Geraldton or Exmouth if they are unable to afford a private dentist. This is expensive as dental works are not covered by the PATS scheme. In addition, a number of clients are unable to travel.
- The Exmouth dental service is provided out of a converted patient ward room which does not meet contemporary standards.
- The current one-chair facility in Exmouth has no capacity to deal with emergencies and population growth. It also has limited storage space, and no dedicated reception or patient waiting areas.
- There is a low participation rate in accessing dental care for the Aboriginal population.

Proposed Service Model / Key Service Strategies

Public Dental Care
Recommendations
It is proposed that a two chair stand alone public dental clinic be provided on the CHC and be staffed by WA Dental Services
Continue the current model of dental care for enrolled school children by the School Dental Service.
It is proposed that a two-chair dental clinic be provided in Exmouth that will allow a predominantly dentist-based service with capacity to also utilise a part-time dental therapist if required.
Explore options for improving access to dental care for the Aboriginal population

7.6 Residential Aged Care

Current Service Model

Carnarvon

Carnarvon has been without a Residential Aged Care facility since late 2007 when Churches of Christ Homes closed Olive Laird hostel and ceased services. Residents were relocated to Carnarvon Hospital, other facilities outside of Carnarvon and back into the community.

Carnarvon Hospital currently provides residential care for 15 residents in the Poinciana Lodge which caters for both low and high care patients. The Lodge is at 100% capacity and the majority of residents have been ACAT assessed as requiring High Level care. There is one respite place available that is regularly booked.

There is also a waiting list for permanent care and at time of writing there are two people waiting for placement. The Lodge is not a secure facility therefore residents with dementia who wander are not able to be accommodated. The Carnarvon facility caters for clients from across the district, particularly Shark Bay and the hinterland.

In 2009 a private aged care provider applied for and was subsequently approved for a single 38 place service in Carnarvon. As part of this approval process the Commonwealth allocated a capital grant of $10.1m for construction of a facility. WACHS has conceptually committed $3m to the project should it proceed. Whilst the capital funding was sufficient to establish a 38 bed facility, the private aged care provider involved has now advised WACHS that they will not proceed with the construction and operation of the facility due to concerns around the level of Commonwealth recurrent funding.

Other options to provide private sector aged residential care services in Carnarvon have been explored and exhausted. It is expected that other potential private aged care providers will also conclude that the proposed facility is not financial viable.

Having reviewed patient demand and the need for residential aged care in Carnarvon, WACHS proposes to formally advise the Commonwealth that WACHS can plan to provide a 24 bed the residential aged care facility in Carnarvon as a part of the Carnarvon Health Campus dependent on:

- The Commonwealth honouring the $10.1M capital contribution to residential aged care facilities in Carnarvon;
- Favourable consideration be given to an application from the Carnarvon Health Service to join the Commonwealth Multi Purpose Service programme; and
- The Commonwealth residential bed licences by allocated to WACHS Midwest in order that they be managed by the Carnarvon Hospital residential care facility.

Exmouth

Exmouth MPS is the only other facility in the Gascoyne district with residential aged care places, with two permanent places and one respite place available. The respite bed is regularly scheduled to ensure carer support for Exmouth and Coral Bay. There is capacity to provide an additional respite bed depending on staffing availability and inpatient bed occupancy.

As with Carnarvon, the Exmouth permanent residential care facility is able to care for appropriate, low level residents with dementia, however those who wander are not able to be accommodated.

Activity Trends and Projections

Activity recorded in 2008/09 relating to residential care activity at Exmouth and Carnarvon is outlined in the following table. This includes data relating to acute beds being utilised for residential care activity. The total occupancy rates for the 15 bed Carnarvon Permanent Care Unit and the two residential care beds at Exmouth were 91% and 70% respectively in 2008/09. Preliminary data from 2009/10 reflects increasing activity at Carnarvon to 5,328 beddays (an occupancy rate of over 97%) and 563 beddays at Exmouth (an occupancy rate of 77%). This reflects the growth in residential care activity and the requirement for increased residential aged care capacity.

Table 42: Residential care activity – Gascoyne Health District (2008/09)

Hospital	Residential care (in residential care beds)			Residential care (in acute care beds)			Total Residential care		
	Beddays	No. residential care beds	Occupancy Rate	Beddays	Number of acute Beds	Occupancy Rate	Beddays	No. of residential care beds-	Occupancy Rate
Carnarvon	4,905	15	90%	60	25	0.7%	4,965	15	91%
Exmouth	465	2	64%	48	8	1.6%	513	2	70%
Total	**5,370**	**17**	**86%**	**108**	**33**	**0.9%**	**5,478**	**17**	**88%**

Data Source: WACHS online Occupied Bed Days pivot. Beds were obtained from WACHS online bed pivot. Boarders excluded

Commonwealth aged care planning benchmarks for high and low care residential aged care places, applied to forecast populations, provide another indicator of demand. The current benchmarks are for the provision of 44 high beds and 44 low care beds for every 1,000 people, non-Aboriginal aged 70 years and over, and Aboriginal aged 50 years and over. By 2021, it is projected that the total number of residents over 70 years within the Gascoyne district will reach over 1,300. Therefore even without accounting for the additional Aboriginal people aged between 50 and 70, a significant increase in residential aged care beds will be required in the future.

Identified Issues and Challenges

- There are a limited number of places available in the district – the current number of residential aged care beds do not meet demand.
- The Permanent Care Unit, Poinciana Lodge, is operating at maximum capacity and has a waiting list.
- Traditionally Poinciana Lodge has accommodated High care residents. With the closure of the low care facility in Carnarvon several years ago the Lodge

has had to provide low and high care as required. It is often challenging to cater for the needs of the mixed group of residents.

- The Gascoyne region has a diverse cultural population and therefore catering for a multi-cultural resident group in small numbers presents challenges in delivering appropriate culturally sensitive care.
- Carnarvon and Exmouth are unable to cater for clients who wander and require a secure environment. Clients with these special needs must currently relocate to Geraldton if there are available places or to the Metropolitan area, a significant distance from their place of residence and family/friends.
- Poinciana Lodge is ageing and was never purpose built for residential aged care, therefore does not meet contemporary standards.
- The withdrawal of potential private provider of residential aged care in Carnarvon means that WACHS will need to consider alterative models of care, including providing the residential care facilities as part of the health service.
- WACHS to formally request that the Commonwealth Government transfer the $10.1M previously allocated to residential care in Carnarvon to WACHS.
- WACHS to formally request to join the Commonwealth Government Multi Purpose Service, where integrated health and aged care services can be provided in a flexible and sustainable manner. (excluding the Silver Chain Nursing Association run Commonwealth Aged Care Packages)
- Exmouth MPS is a very small facility, and the service must meet the needs for acute care, community care and residential aged care. With the small staffing numbers it is difficult to ensure skills coverage across the care continuum.

7.6.1 Key Service Strategies / Proposed Models of Care

Residential Aged Care Services
Recommendations
WACHS to request that the Commonwealth Government honour its $10.1M commitment towards the provision of residential aged care facilities in Carnarvon and following formal request, transfer the previously allocated $10.1M of capital funds to WACHS. This funding would be in addition to the $3m contribution currently identified by WACHS, and when combined will enable the development of 24 residential aged care beds on the CHC site.
WACHS to apply to the Commonwealth Government to have Carnarvon join the MPS program (exclusive of Silver Chain Nursing Association CACPs)
Dedicated allied health and nursing resources are required to support risk screening and complex care coordination for the aged care cohort presenting to hospital eg: Older Patient Initiative.
Ensure appropriate allocation of resources to support the minimisation of functional decline for older people in hospital.
Promote chronic disease management services and preventative health care programs for community clients to maintain older people in their own homes where possible.
Improve access to specialist services (Geriatrician and Psycho-geriatrician).

8 CURRENT AND FUTURE CLINICAL SUPPORT SERVICES

8.1 Medical Imaging

The Medical Imaging Department at Carnarvon Hospital provides X-ray and ultrasound services. There are currently three FTE within the radiography team with a visiting Radiologist.

Work is currently underway to renovate the department for the installation of a CT scanner. It is anticipated that this will be completed in December 2010.

Retention of sonographers is difficult and there is a need to regularly source visiting sonographers from outside the district

Demand for medical imaging services is likely to increase due to the ageing population and the planned installation of the CT scanner.

Xray and ultrasound services are also available at Exmouth.

Key Service Strategies

Medical Imaging Services
Recommendations
The implications of the CT scanner on staffing rosters and recruitment will have to be assessed.
CHC will be a pilot site for the WACHS RIS/PACS rollout

8.2 Pharmacy

The Carnarvon Hospital Pharmacy operates within a regional service delivery model but with onsite pharmacist services provided under contract from the local private Amcal pharmacy. The Amcal pharmacy is the contracted pharmacist for pharmacy services to Carnarvon, Coral Bay, Exmouth and Burringurrah. They also have the contract for supply of S100 to Burringurrah.

Services provided by Amcal include:

- supply of pharmacist for up to 45 hours per month in Carnarvon and 22 hours for Exmouth;
- order and supply duties;
- medication reviews;
- staff development;
- site visits (Coral Bay and Exmouth every three months, Burringurrah approx twice per year.); and
- telephone, fax, and videoconferencing service to Exmouth.

A pharmacist is on site most days at the Carnarvon Health Campus and also provides pharmacy services to the Carnarvon Medical Service Aboriginal Corporation.

The CHC provides the major pharmacy warehouse store for the Gascoyne.

Identified Issues and Shortcomings

In 2006 the Federal Government introduced various reforms to the PBS Scheme. These reforms were designed to improve the continuum of care for patients moving between the hospital and community setting and to improve the way patients access their medication by making it easier and more convenient for patients to receive adequate medication. To implement the reforms hospitals may need to have increased capacity to dispense medication on discharge

Demand for pharmacy services at CHC is also anticipated to increase with the introduction of the Medication reconciliation process, a formal process in which a complete and accurate list of each patient's current medications is obtained and verified.

Key Service Strategies

Pharmacy Services
Recommendations
The current regional service delivery model will continue
Future planning processes will need to consult with Midwest Regional pharmacy services to confirm the local implications of the PBS reform, including the number of regional pharmacists required and the size of hospital dispensaries.
Any future facility planning process needs to consider the storage requirements for the CHC pharmacy services. It is currently limited.
Implement Pharmacy reform as per Action 15. WACHS Operational Plan 2010/11.

8.3 Pathology

PathWest are contracted to provide all pathology services for WACHS.

Carnarvon

A PathWest laboratory is on-site at Carnarvon Hospital and operates on a 24-hour on-call basis. This laboratory provides facilities and equipment to fulfil the basic testing requirements in regional areas including basic microbiology, haematology, biochemistry, cross matching for transfusions and coagulation studies.

There is also a daily, part-time staffed collection service operating at the Carnarvon Medical Centre and multiple daily pick-ups and deliveries to the Carnarvon Medical Centre and AMS surgeries.

The laboratory also provides these testing services to the outlying communities of Denham, Useless Loop, Coral Bay, Burringurrah and urgent weekend work for Exmouth Regional Hospital.

Exmouth

Exmouth hospital also has a Pathwest laboratory on site and is able to provide the following through Point of Care Testing:

- Full blood count
- UEC
- Blood gases
- D.Dimer
- Troponin

Other samples are sent to Carnarvon Pathwest.

Specimens requiring more specialised testing are transferred to Perth or laboratories in the Eastern States.

PathWest also provide some point of care testing of equipment and training to staff to operate the equipment. The equipment includes blood gas analysers and cardiac readers.

Identified Issues & Challenges

- The current laboratory in Carnarvon has inadequate space

Key Strategies

Pathology Services
Recommendations
Provide training and development, where needed to ensure staff are appropriately trained in operating the point of care equipment.
Expand PathWest services to meet local demand in the future, particularly in response to the commencement of renal dialysis services.
Monitor the impact of technological advancements in pathology on patient flow and service delivery at WACHS Gascoyne facilities.
Consider how point of care testing can be introduced into both the Carnarvon Health Campus and the Exmouth MPS.

8.4 Sterilising Services

CSSD services are provided via Geraldton Hospital. The CSSD at Geraldton also provides sterilising services for the AMS and private GP clinics in the Gascoyne district.

Exmouth does not require CSSD services as the MPS only performs minor procedures and uses disposable or single use items.

8.5 Telehealth and e-health

All Gascoyne health care facilities currently utilise Telehealth technology for the delivery of staff meetings (including the monthly Cancer Link meetings); a number of outpatient services (including the burns and plastics clinics); for staff education purposes and to enable families to contact clients who have transferred out of the district for medical management.

Demand for telehealth technology across the district is increasing due to the remoteness of the hospitals in the region and the availability of specialists on site. In addition to staff training, telehealth technology will be increasingly used in the future to connect to specialists based in Geraldton or Perth to provide patients assessment and assist in the development of care plans. This will provide improved access and efficiency of health services delivered within hospitals, the community and the home.

In October 2010 WA Health will launch the 'Connecting Health' infrastructure, an internal video bridging service, which will improve videoconferencing technology, enable partnering with other health providers such as Aboriginal Medical Services, GPs and home based services, the ability to stream and record education events and facilitate a move toward desktop videoconferencing.

Along with greater use of videoconferencing, WA Health will be able to utilise a range of technologies (including mobile technologies such as phones and tablet computers, and home monitoring) to deliver high quality and safe clinical service models within and across Area Health Services. This will provide the following benefits:

- efficient and cost effective service delivery while improving service access, equity, safety and quality;
- improved health outcomes through increased service access and support;
- better education, training and support opportunities for local health care providers; and
- improved collaboration and communication between health care providers.

Key Strategies

Telehealth Services
Recommendations
Ongoing service planning, as well as site service, facility and ICT upgrades will need to ensure staff and visiting specialists have appropriate and timely access to telehealth facilities at all facilities across the District. Providing an effective system connecting all Gascoyne sites to Perth, Geraldton and other regions will support training and development of staff and enable specialists to provide advice and direct patient assessment – improving efficiencies in patient care.
With the increasing demand for telehealth facilities, the existing infrastructure and capacity to meet demand telehealth should be assessed.

9 CURRENT AND FUTURE NON-CLINICAL SUPPORT SERVICES

9.1 Food Services

Both Carnarvon and Exmouth Hospitals have cook fresh kitchens which currently provides catering for patients, staff and Meals on Wheel. Approximately 3,500 meals per month are prepared at Carnarvon, and 140 at Exmouth (120 during the off peak season).

The catering service at Exmouth hospital also provides frozen pre-pack meals to Coral Bay.

Recent upgrading of stoves and washing facilities at Carnarvon to contemporary levels have reduced the usage of fuel and electricity. However the current kitchen at Carnarvon is overly large and does not produce the efficiency that could be achieved in a smaller area.

9.2 Linen

Carnarvon Hospital currently has a laundry service that processes approximately 4,500 kilograms of laundry per month. It supplies Carnarvon Hospital only.

Exmouth Hospital has its own laundry service for Exmouth/Coral Bay. Burringurrah Nursing Post has minimum stock requirements which are laundered on site, however Carnarvon does provide assistance as required.

Silver Chain in Denham are responsible for their own laundry arrangements.

9.3 Cleaning and Gardening

Cleaning and gardening services are provided by locally employed WACHS staff at all sites.

9.4 Engineering, Maintenance & Supply

Maintenance and supply services are managed by District Operations Managers. There are maintenance teams based at Carnarvon and Exmouth Hospitals who have responsibility for managing the mechanical, hydraulic and electrical sites services at facilities within the Gascoyne district.

There is a small supply team at Carnarvon Hospital.

9.5 Corporate Services

WA Country Health Service operates a single Corporate Services function that comprises Finance, Human Resources and Information and Communication Technology.

This is effected at Regional level managed through a Regional Corporate Services Manager. For the Midwest the Corporate Services staff are based predominately at Geraldton , but there are two staff located in Carnarvon being an IT Support Officer and Learning and Development Educator.

Corporate Services staff from Geraldton visit as required and operate from vacant offices and meeting rooms during visits.

Health Corporate Network (WA Health's shared services centre) was established five years ago and provides WA Country Health Service with centralised Employment and Payroll Services. In addition, HCN provides support to components of the finance function.

The Health Information Network was established in 2005 as Health's shared ICT service. HIN provides WA Country Health Service with a range of ICT related services, but ICT staff remain managed through WACHS.

The WA Government and WA Country Health Service have adopted the concept of shared corporate services. This has resulted in a number of corporate functions no longer being provided from Carnarvon or Exmouth Hospitals. Government policy is unlikely to change in the foreseeable future.

9.6 Non-clinical Support Services – Key Strategies

Non-clinical Support Services
Recommendations
Explore options for future models of service provision.
Should a private Nursing Home in Carnarvon proceed at some time into the future, it is proposed that CHC provide some catering and laundry services on a cost recovery basis
Any facility planning process needs to include a review of the physical layout of the kitchen at Carnarvon with a view to rationalising the area.
Laundry services requirements to be monitored to ensure the service aligns with the growing demand for acute and ambulatory services.
Laundry equipment is nearing the end of its economic life and will require upgrading.
WA Country Health Service is currently establishing an ICT Strategic Plan that will guide developments for the next five years, including equipment investment and application development. Service and workforce implications of establishing electronic medical records and human resource systems will need to be identified.
Any future facility planning must consider this strategy and include broader Health Information Network requirements.
Similarly, services provided by HIN and HCN are also continually reviewed but any changes are unlikely to have a significant effect on the service profile for Carnarvon or Exmouth Hospitals.

10 OTHER FACTORS ENABLING SERVICE DELIVERY

10.1 Transport and Retrieval

Within the Gascoyne district there is no community bus or local transport for clients who don't have HACC funding or are eligible for PATS scheme. Although not a direct WACHS responsibility it is proposed that an improved level of public transport is provided for Gascoyne residents. This will allow patients to more easily access the appropriate healthcare service.

Air travel between towns within the district is also made difficult by the fact that most flights travel through Perth. For example, there are rarely direct flights between Exmouth and Carnarvon or Geraldton.

The Patient Assisted Travel Scheme (PATS) provides subsidies for travel and accommodation costs associated with accessing medical specialist services. A number of issues relating to the scheme have been raised including complexities in completing the application process and frequent delays in patients receiving reimbursements, leading to patients being out of pocket for long periods, often for high cost flights.

Improvements to the PATS system are anticipated as it moves to an online model. This is expected to be rolled out in July 2011

10.2 Patient accommodation

The provision of some level of culturally appropriate hostel service (or Medi-hotel style facility) for patients travelling to Carnarvon for elective procedures has been proposed.

The Medi-hotel is a community based ambulatory care service which provides alternative non-hospital accommodation for those patients who require a course of treatment or tests, people from isolated communities or have no suitable carer at home and patients recovering post surgery who do not require an acute hospital bed. A Medi-hotel service will address the key health strategy of relieving pressure on acute beds; increasing the availability for emergencies and reducing surgery waitlists.

The Health Reform Committee (HRC) considers Medi-hotels to be an innovative strategy to manage demand. Their research indicated that 10% of admitted patients could potentially be suitable for fewer days in a hospital bed if a Medi-hotel option was available.

The following circumstances would be suitable for a Medi-hotel service:

- Rural clients booked for colonoscopies. Patients are required to take bowel preparatory medications the day prior making travel difficult due to loose bowel motions.
- Rural ante-natal patients presenting for delivery, however assessed as in early stages and not requiring hospital care, but have no suitable alternative local accommodation.

- Rural ante-natal patients who are encouraged to leave their areas of abode from 36 weeks gestation to move closer to the CHC. Currently the lack of available and affordable accommodation options in Carnarvon negates these clients birthing at the CHC and they tend to move to Perth where they will be assured of a birth at term or 38 weeks.
- Post natal low risk clients returning to rural areas (could deliver, stabilise and transfer to family unit).
- Post surgical day patients needing to drive back to rural locations, but are not safe to do so following anaesthetic or because of the substantial distance. It is accepted that as part of the clinical assessment, the availability of a carer (as required) would be established prior to a transfer of a patient in this category from the hospital to the Medi-hotel.
- Pre surgery – pre admission work-up could be done through visits to the hospital while accommodated at a Medi-hotel.
- Post surgery early discharge (where minor monitoring may be required).
- Patients awaiting Activities of Daily Living (ADL) equipment for functional independence.
- Patients ready for discharge but unable to link with transport to get home.

The Medi-hotel option will provide better access to Carnarvon Hospital for those from outlying areas where transport options at times have necessitated either an early admission or late discharge, thus increasing the patient's length of stay in an acute bed.

Maternity staff have raised the option of family and Midwife-driven birth units that could be incorporated in the Medi-hotel model for low risk maternity patients. The CNM Maternity notes that maternity clients are healthy and well and should be moved away from the medical model of care.

Once the Medi-Hotel is established ongoing costs (laundry, cleaning, consumables etc) will be absorbed by the health service.

10.3 ICT

The provision for the development of advanced networking capabilities, wireless messaging and system integration for rural areas will provide an improved interface between hospitals, general practice and other health practitioners (including private and non-government sectors). This is particular relevant within rural areas where large geographical distances exist between service providers who often work out of a number of locations.

The roll-out of a shared electronic medical records system is anticipated to occur over the next five to ten years. This should be a shared system to enable acute, ED, ambulatory care (including population health and primary care) to share patient records and improve care. The implications of this technology for service delivery, workforce, facilities and site services will need to be addressed. Site service, facility and ICT upgrades will be required to accommodate this.

10.4 Workforce including education and training

The Gascoyne experiences some difficulty attracting and retaining skilled staff including allied health and visiting specialist medical staff. The vacancy rate for allied health staff across the district is reported to be up to 15%.

There is a growing need for Regional and District level workforce planning to occur as a priority. Local staff have expressed the need for:

- improved attraction and retention strategies;
- increased access to a range of professional supervision;
- strategies to address the aging workforce;
- 'grow your own' staff (attracting young local people and Aboriginal people into the health business across all sectors);
- improved availability of quality staff accommodation; and
- improved educational opportunities for the children of staff. Many staff choose to relocate to other centres when children reach high school or upper high school age.

Workforce planning for the Gascoyne and Midwest will need to align with WACHS wide initiatives, as outlined in the WACHS Operational Plan 2010-2011. These initiatives include:

- Develop a clinical workforce plan which includes recruitment and retention strategies for medical, nursing and allied health staff; and implementation of the clinical governance framework for allied health.
- Implement the Rural Generalist Pathway.
- Implement the Nursing and Midwifery WA Strategic Framework.

10.5 Staff accommodation

As with most areas of the North West, the Gascoyne district faces huge challenges with quality accommodation to attract and retain appropriate staff.

Carnarvon and Exmouth both suffer from aging and limited housing stock. Despite the best efforts of maintenance staff, the stock does not match the standards prescribed by the Government Regional Officers Housing Standards.

There are 20 staff accommodation units in Carnarvon, owned by the health service,10-15 units rented and some on-site short term accommodation.

In Coral Bay staff are required to live in two Dongas which despite the obvious attractions of Coral Bay, limit the available pool of applicants that can be attracted to the area as well as being inappropriate accommodation for professional staff.

At the time of writing this Service Plan, preliminary planning was being undertaken for the development of accommodation quarters (2-3 bedrooms) for permanent staff in Coral Bay.

Planning for staff accommodation will be guided by the WACHS permanent employee housing accommodation strategy (WACHS Operational Plan 2010-2011, Revitalising Action 13).

10.6 Disaster preparedness and response

Under the WA Health guidelines, 'Redundancy and Disaster Planning in Health's Capital Works Program', Carnarvon is identified as a Group 3 facility and Exmouth MPS as a Group 4 facility.

The report acknowledges that the conversion of existing WA Health facilities to meet the disaster planning guidelines is likely to be cost prohibitive. However, it is noted that in the event of a hospital being developed in some way, then it is expected that these guidelines will be addressed as part of the planning process.

Future facility planning processes for both Carnarvon and Exmouth hospitals will enable these two facilities to achieve the full level of requirements necessary to achieve the appropriate level of redundancy and disaster preparedness.

10.7 Contemporary Facility Design

Current growth in activity at both Carnarvon and Exmouth hospital is unsustainable and is unable to be accommodated within the current facilities, placing pressure on resources and staff. The redevelopment of health facilities in the Gascoyne region will be essential to enable WACHS – Midwest to improve service delivery through increasing bed capacity, streamlining processes and services, improving connectivity within and between acute care, mental health and population health and increasing access to improved health technologies.

Key issues needing to be addressed through improved facility design include:

Carnarvon Health Campus

- The Carnarvon Hospital emergency department requires urgent redesign and expansion to improve the layout and functionality of patient flows with the department and its connectivity to radiology and inpatient services.
- A designated day surgery unit is required to enhance bed efficiency and throughput and provide a more comfortable pathway for patients. This would allow reconfiguration of acute hospital beds to provide a more appropriate level of care.
- Community and Primary Health services are provided from scattered areas of the hospital, including a donga, and given the design of the current building they cannot be amalgamated. This inhibits the delivery of contemporary, integrated models of care. The redevelopment of the health campus will need to effectively accommodate all Population Health staff together.
- Mental health services are currently provided off site in totally inappropriate accommodation. The integration of mental health and drug and alcohol teams together on the health campus site is the preferred model.
- There is a demonstrated need for public dental services to be established in Carnarvon. Discussions between WACHS and the WA Dental Health Services (DHS) have indicated that the preferred location is for a standalone clinic to be constructed on the health campus site.
- A review of kitchen design and layout to potentially rationalise the available space.

Exmouth MPS

- In 2009 Exmouth became a Multi Purpose Service which provides three residential beds and six community based packages. The introduction of these services has meant that there is little room left within the current building to house clinical and offices areas.
- Exmouth Hospital has increased its ability to provide new and enhanced services to its community via COAG's section 19.2 Medicare exemption program. Revenue from this program is spent on new or enhanced primary health services, however there are few accommodation options for these new service initiatives. The lack of space within the hospital is currently impacting on the ability to attract and retain staff.
- The current child health facility is located in an inappropriate building in the centre of Exmouth. Negotiations with the Exmouth Shire have concluded that an alternative site needs to be found, preferably at the health campus site.
- In order that community and primary health services can be provided in a coordinated fashion, it is recommended that a community health facility be constructed on the grounds of Exmouth Hospital.

Redevelopment of the CHC and Exmouth MPS will build the capacity of the health services by enabling growth in primary health care services, as well as ensuring there is the adequate space and facilities to take up funding opportunities that arise to enhance service provision. Improved facilities in both Carnarvon and Exmouth will not only build the capacity of WACHS-Midwest to increase services in these towns, but will also ensure they are better able to offer outreach services to Shark Bay, Burringurrah, Upper Gascoyne and Coral Bay.

The redevelopment of facilities in the Gascoyne will also provide employment opportunities in the short-term, related to construction works, and in the long term through increased opportunities for growth in health service delivery. Modernising the outdated facilities in Carnarvon and Exmouth, including staff accommodation will improve WACHS – Midwest's ability to recruit and retain health professionals, improving the quality and continuity of patient care. By attracting new professionals and their families to move to and work in the Gascoyne, the health service will be able to further contribute to the prosperity of the region, by increasing the skills base and population.

11 FUNCTIONAL MODEL OF CARE

The following section provides a visual representation of the functional model of care for the Gascoyne Health District.

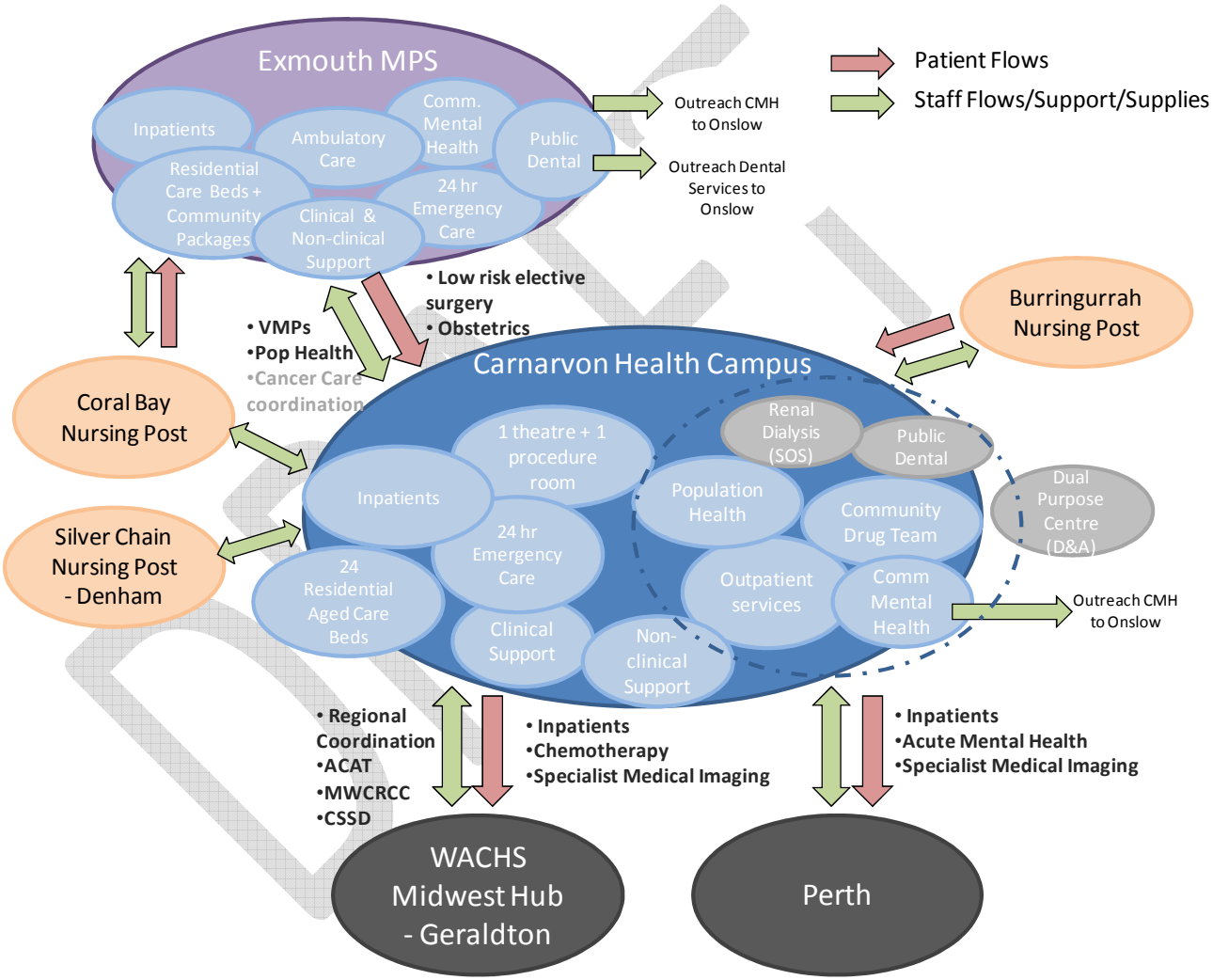
In developing functional models for each site, it has been essential to consider the range of services to be provided across the Gascoyne, patient flows within the district; intraregional flows and the relationship with Geraldton Health Campus; along with outflows to metropolitan healthcare facilities.

Figure 13 provides an overview of the clinical services available at each site and the interrelationships between facilities within the Gascoyne, the greater Midwest region and Perth.

Key changes to the existing functional model of care include:

- New services for the Carnarvon Health Campus, as proposed within this Service Plan, include a satellite outreach renal dialysis service and public dental clinic.
- The proposed dual purpose centre for drug and alcohol support, mentoring and coaching, along with a sobering up shelter is proposed for Carnarvon. It is anticipated that this centre will be located on a separate site to the CHC.
- The proposed commencement of a Cancer/Palliative Care Coordinator and Aged & Community Care Coordinator for the Gascoyne District.
- The proposed development of dedicated residential aged care beds on the CHC site.
- All ambulatory type health services at CHC will be integrated within a ‘one stop shop’ as a way of integrating operations and assisting the patient to navigate the continuum of care, particularly for those patients presenting with multiple co-morbidities.

Figure 13: Functional Model of Care for the Gascoyne Health District



12 CONCLUSION

This Service Plan has set the strategic direction for service delivery across the Gascoyne Health District to 2020. The following overarching priorities have been developed:

- Explore the notion of a 'one stop shop' for all ambulatory type health services as a way of integrating operations and assisting the patient to navigate the continuum of care, particularly for those patients presenting with multiple co-morbidities.
- Collaborate with health and community partners to increase awareness of health promotion issues and chronic disease management.
- Introduce models of care that improve access to services for groups who have difficulties accessing acute and primary health care services (e.g. rural and remote communities; elderly; young mothers; Aboriginal communities and those living with a disability).
- Enhance Aboriginal health initiatives consistent with 'Closing the Gap' and other local priorities and build the capacity of Aboriginal health initiatives by attracting and retaining positions and leadership roles for Aboriginal people.
- Improve the level of integration and cooperation between the Community Mental Health Team, Alcohol and Other Drug Team, GPs, Geraldton based psychiatrists and other stakeholders to better meet the acute care needs of mental health patients across the Gascoyne.
- Provide staff assisted renal dialysis in Carnarvon through a four chair satellite outreach service (WACHS Renal Dialysis Plan 2010-2021).
- Develop a two chair public dental service in Carnarvon and expand the existing service at Exmouth to two chairs.
- Explore the feasibility of introducing a dedicated midwife service at Carnarvon, along with Cancer Care and Aged Care Coordinators for the District.
- WACHS develop an alternate strategy to provide the residential aged care beds in Carnarvon as part of the health service.

The strategic directions for service delivery outlined in this Service Plan will enable the Gascoyne Health District to better manage demand for services, improve efficiencies in patient care, meet the needs of the local catchment area and ensure alignment with existing policies and strategies.

The Plan will also assist in informing the development of future business cases for the potential redevelopment of services. It is essential that this plan is reviewed as facility planning progresses, National/State policies are introduced and the needs of the community change. An ongoing proactive approach to service planning will ensure that healthcare services remain responsive to the rapidly changing community, new policy developments and advances in medical care and technology.

13 RECOMMENDATIONS

The following recommendations should be undertaken over the next six to 12 months as planning progresses to Business Case development and beyond.

It is recommended that WACHS – Midwest form working groups to undertake the following:

- Consolidate the future functional models of care for health services within the Gascoyne district.
- Determine workforce and recurrent cost implications (workforce model to include a focus on education and training for GPs, medical, nursing and allied health staff).
- Confirm the clinical governance for changes to the models of care.
- Determine the private and inter-governmental partnerships to be formed to enable the future models of care to be established.
- Explore opportunities for the private sector to be engaged in the redevelopment and future service delivery on-site.
- Develop an Implementation Plan to identify the key operational and facility initiatives arising from the service delivery strategies outlined in this document. This will assist in ensuring all key issues arising from the Service Plan are considered during facility planning processes for the potential redevelopment of Gascoyne health services.

In addition, it is recommended that a 'community engagement' model is adopted as planning progresses to ensure the development of culturally secure services for all Gascoyne residents.

14 APPENDICES

Appendix 1 – Profile of WACHS Gascoyne Workforce

The following tables highlight the existing funded and actual FTE appointed to resource WACHS – Midwest services in Carnarvon, Exmouth, Coral Bay and Burringurrah.

Table 43: WACHS – Midwest FTE in Carnarvon (2009/10)

FTE Category	FTE Funded	Actual FTE
Carnarvon Health Campus		
Medical	6.5	6.8
Nursing	45.9	45.1
Clinical Support	3.8	2.9
Non – clinical (laundry, supply, ICT, maintenance)	35.0	35.1
Corporate Administration/Clerical	15.2	17.2
Allied Health		
Sub-Total	**106.4**	**107.1**
Population Health – Carnarvon based only		
Nursing	8.5	7.2
Allied Health	12.7	10.9
Other	6.7	6.7
Sub-Total	**27.9**	**24.8**
Community Mental Health – Carnarvon based only		
Team Leader	1.0	1.0
Child and Adolescent Mental Health Worker	1.0	1.0
Adult /Elderly Clinicians/Case Manager	3.5	3.5
Aboriginal MH worker	2.5	2.5
SIPMH Program	0.5	0.5
Administration	1.0	1.0
Sub-Total	**9.5**	**9.5**
TOTAL	**143.8**	**141.4**

Table 44: WACHS – Midwest FTE in Exmouth, Coral Bay and Burringurrah (2009/10)

FTE Category	FTE Funded	Actual FTE
Exmouth		
Medical	3.0	3.0
Nursing	27.0	27.0
Clinical Support	1.8	2.1
Non – clinical (laundry, supply, ICT, maintenance)	7.0	7.0
Corporate Administration/Clerical	15.2	14.2
Allied Health		
Total	**54.0**	**53.3**
Coral Bay		
Nursing	1.5	1.5
Total	**1.5**	**1.5**
Burringurrah		
Nursing	1.0	1.0
Clinical Support	1.0	1.0
Total	**2.0**	**2.0**

Appendix 2 - Major Stakeholders

State Government

WACHS – Area Office

Department of Health

Patient Assisted Travel Scheme (PATS)

Rural Link

Gascoyne Development Commission

PathWest

Visiting specialists

Home and Community Care

Commonwealth Government

Medicare

Department of Health and Ageing

Primary Care Providers

Carnarvon Medical Centre

Carnarvon Medical Service Aboriginal Corporation

Silver Chain

Ningaloo Physiotherapy

Midwest GP Network

Local Governments

Shire of Carnarvon

Shire of Exmouth

Not for profit/Non-government

St John Ambulance

RFDS

Carnarvon Family Support

Burringurrah Aboriginal Corporation

Education Institutions

Carnarvon Primary School

East Carnarvon Primary School

Carnarvon Christian School

St Mary's Catholic School

Carnarvon Senior High School

Durack Institute of Technology

Combined University Centre for Rural Health

Rural Clinical School

Community Groups

District Health Advisory Committee

Appendix 3 - Proposed functional models for Carnarvon and Exmouth

The following table is designed to assist the concept masterplanning process for the potential redevelopment of health facilities within the Gascoyne.

The table (where possible) summarises the key elements of the proposed functional model for the Carnarvon Health Campus and Exmouth MPS. These key elements will be required to support the needs of the community and the proposed future models of care.

The table does not provide a complete list of proposed requirements and as such, the specific details of the model will be determined through the Masterplanning process by the Architect.

Functional area	Proposed key features	
	Carnarvon Health Campus	**Exmouth MPS**
Clinical Services		
Inpatient Unit	17 x multiday beds 10 x same-day beds	8 acute care beds
Residential Care	24 residential aged care beds	2 beds plus 1 flexible use bed for respite & care awaiting placement
Maternity Unit	1 birthing suite 4 single maternity rooms (included in overnight beds) NB These were developed in the 2008 Stage 1 redevelopment	nil
Theatres	1 theatre, 1 procedure room	nil
Emergency Department	6 ED bays (2 resus. bays, 4 treatment bays). Include mental health observation bay for patients awaiting transfer. Include multi-purpose consult rooms, (nurse practitioner, GPs, allied health)	3 ED bays (including 1 resuscitation bay)
Ambulatory Care Services		
Ambulatory Health Care Centre	'One stop shop' collocating all ambulatory type health services, including Population Health, Mental Health and Alcohol & Other Drug Services.	Ambulatory Health Care Centre collocating all community, mental health and primary health care services.

Functional area	Proposed key features	
	Carnarvon Health Campus	**Exmouth MPS**
Day Surgical Unit	Sub-waiting area linked to same-day beds and indirect link to theatres.	nil
Renal Dialysis	4 chair satellite outreach dialysis unit	nil
Dental Health	2 chair public dental clinic on the CHC site	2 chair public dental clinic on the Exmouth MPS site
Community Aged Care	Accommodation for Gascoyne Aged care Coordinator. HACC & aged care packages coordinated through silver chain (not located on campus)	Accommodation for community aged care services (including HACC, aged care packages).
Clinical Support Services		
Medical Imaging	1 x CT scanner 1x general x-ray 1 x sonography room	1x general x-ray 1 x sonography room
Pathology	Pathwest laboratory	Pathwest laboratory
Pharmacy	Gascoyne pharmacy warehouse	nil
CSSD	Nil (sterilising services provided in Geraldton)	Nil required (MPS only performs minor procedures and uses disposable or single use items).
Non-clinical support services		
Kitchen	Cook fresh kitchen* Rationalise current space. Consider requirements of private residential aged care service.	Cook fresh kitchen*
Linen service	On –site laundry* Consider requirements of private residential aged care service.	On –site laundry*
Maintenance & Supply	Engineering & stores	Engineering & stores