Acknowledgements

This report is a result of the considerable efforts of a large number of Kimberley Aboriginal people over many years. Firstly Kimberley Aboriginal people, through the development of Aboriginal community organisations, the implementation of new approaches to the improvement of health and lobbying at a state and national level, have established circumstances where realistic joint planning is now a necessity. Secondly a large number of Kimberley Aboriginal people have contributed substantially to equipping the authors for this task, through personal and professional relationships over many years. Thirdly many Kimberley Aboriginal people have contributed directly to this planning process and contributed directly to developing the recommendations included in this report. Probably the result that would most please the Aboriginal people who have contributed in all these ways would be for this planning process to contribute significantly to much more rapid improvements in the health of Kimberley Aboriginal people than has happened to date. We hope this turns out to be the case.

This project was a collaborative effort between people from all the agencies involved with the Kimberley Aboriginal Health Plan Steering committee. We congratulate the members of the Steering Committee for their persistence and willingness to find common ground, which enabled agreement between all parties on the final recommendations in this report. The contributions of the senior staff of KAMSC, the Kimberley Health Service, the three ATSIC Regional Councils, the Office of Aboriginal Health, the Aboriginal Affairs Department and the Commonwealth Department of Health and Aged Care were central to the successful completion of this project.

Without the goodwill and support of a large number of overworked and under resourced staff, from all the agencies involved in health care and related services, preparing this report would have been much more difficult. In particular staff of the various Kimberley Aboriginal Community Controlled Health Services, the Kimberley Health Service throughout the Kimberley and a large number of other people involved in direct service delivery through a variety of agencies were incredibly helpful. Many staff volunteered considerable time and effort to providing information for the report. The enthusiasm and optimism of these staff concerning the possibility of real change despite past inaction has been most encouraging and deserves to be rewarded with better results in future.

We would also like to thank the staff of the Centre for Aboriginal Programmes at the University of WA for administrative and other support of the project over the past year and KAMSC and EKAMS for their administrative support for the work carried out on the ground in the Kimberley. Jan Lewis of the Commonwealth Department of Health and Aged Care, Richard Murray from KAMSC and Anne Riordan from Kimberley Health Services, as the main contact people for day to day issues, all made major contributions to this project and remained unfailingly good humoured throughout, despite the obstacles that arose.

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Summary

This document addresses the terms of reference set by the steering committee, within the limits of the time and budget constraints imposed on the process. The report describes aspects of health services and related issues and details substantial background information relevant to the improvement of Aboriginal health in the Kimberley. This is followed by a discussion of principles for health service delivery, recommendations on urgent priorities and how the planning process and the evaluation of this process should proceed.

Aboriginal population and health in the Kimberley
The Kimberley Aboriginal population is currently about 15,500 and growing steadily. Between half and two thirds of this population live in close proximity to the six towns with the remainder living in a wide range of remote and not so remote communities throughout the region. The health of Aboriginal people across the Kimberley overall is reasonably similar to the health of Aboriginal people in other areas of the State and continues to be substantially worse than the health of non-Aboriginal Australians. Hospitalisation is common for a wide range of conditions and all of the major categories of disease, including cardiovascular disease, injury, metabolic disease (diabetes in particular), infectious diseases and mental health problems, and their consequences, are major problems that need to be addressed. While there are some differences in health status between areas within the Kimberley, there are more similarities than differences, with most important health issues being concerns in most communities. This information is not new and has been reported on many times. Unfortunately, despite the frequent reporting of this information, very limited progress to address these identified problems has occurred.

Underlying causes of Aboriginal health problems
The underlying causes of Aboriginal ill health are complex and a detailed discussion is beyond the scope of this document. In depth discussion of these issues is available elsewhere (National Aboriginal Health Strategy Working Party report, reports on the Royal Commission into Aboriginal Deaths in Custody and many other state and national reports), however a description of the current circumstances in the Kimberley that need to be addressed is important. Environmental circumstances continue to be a major obstacle to improving Aboriginal health and there continue to be substantial deficiencies in terms of housing and the community infrastructure such as waste disposal, water and power, that goes with it. There is a minimum deficiency of at least 700 houses (this may well be a significant underestimate) and in addition there are major unmet needs for maintenance. There is also an urgent need for recreational and other facilities that, if present, would make a useful contribution to community development.

Employment and education are at least as important as the physical environmental, yet little progress has occurred over recent years in either area. Educational outcomes for Kimberley Aboriginal children continue to be the worst in the State and even functional literacy is a problem for young people in many areas. Only four Aboriginal students attending schools in the Kimberley have obtained tertiary admission directly through the standard tertiary admission system over the past three years. Despite some worthwhile effects from CDEP programs and with the important exception of Aboriginal community organisations, there have been few improvements in employment in either the government or the private sector.

The consequence of very limited employment is community poverty and this is reflected in median incomes for Kimberley Aboriginal people that continue to be well below $200 a week. Given the considerable expense of food and other essential items, especially in remote communities (averaging 77 per cent higher in East Kimberley communities), these low incomes make living a healthy life extremely difficult. Certainly poverty makes a significant contribution to poor nutrition and poor environmental conditions. In these circumstances problems such as high rates of use of alcohol and other drugs, as well as gambling are not surprising. A very high rate of involvement with the criminal justice system is another

indicator of the extent of the problems in this area. Arrest rates that approach one arrest per adult per year in some areas of the Kimberley are a serious sign of community ill health.

Health services for Kimberley Aboriginal people

Deeble *et al* (1998) in their recent report on Aboriginal health funding and the Keys Young (1997) report on Aboriginal and Torres Strait Islander access to Medicare and PBS, highlighted that, based on need, there are substantial deficiencies in the expenditure on Aboriginal health across Australia. Inadequate expenditure on health services is a major problem in the Kimberley and there is a clear deficiency in overall health expenditure in the Kimberley of many millions of dollars compared with the national average (for both Aboriginal and non-Aboriginal people combined).

Health care expenditure was divided into expenditure on in-patient hospital services in the Kimberley and expenditure on other than inpatient care, which can be broadly categorised as Primary Health Care (PHC) expenditure. Expenditure on PHC for Aboriginal people within the Kimberley is about the same as the national average for expenditure on these types of health services, in other words similar to the expenditure on non-Aboriginal people in the major cities. Given the cost of providing services to the dispersed Kimberley Aboriginal population the effective expenditure on PHC for Kimberley Aboriginal people is substantially lower than expenditure on PHC for non-Aboriginal people in major cities. In addition Aboriginal health is, by almost every indicator, at least two to three times as poor as non-Aboriginal health. Given the demonstrated need and the very high cost of providing services in such a region, it is clearly necessary to spend at least two to three times as much as the national average on PHC for Aboriginal people in the Kimberley if they are to have equitable access to preventive and early intervention health initiatives. Clearly PHC is grossly under-funded (estimated, as an absolute minimum, at $12 million per year for the region). This is a global deficiency across the Kimberley, although some areas are obviously worse off than others.

Apart from limited funding for PHC, which obviously limits the effectiveness of services, there are also deficiencies in the extent of Aboriginal input to the provision of PHC services in some areas. This is reflected in the continuing provision of primary medical services from alienating hospital environments in several towns rather than from community based facilities, as is usual elsewhere in Australia, and a lack of effective structures to increase the involvement of the local community in PHC services provided by Kimberley Health Services. Suggestions as to how services might improve were received from a number of sources and many of these emphasised the need for greater community involvement.

In contrast to PHC services, admissions to hospital and hence expenditure on hospital services for Aboriginal people is larger than the usual expenditure on hospital services for non-Aboriginal people across Australia. This expenditure reflects past and present health status and is an indicator both of the substantially poorer health of Aboriginal people and the extra expense of providing services in the Kimberley. Despite the somewhat greater per capita expenditure on hospital services, Kimberley Aboriginal people continue to have a number of problems in terms of accessing hospital services, both local services and specialised services outside the region, as discussed below.

Along with the shortage of funding for PHC there is a significant under supply of health staff in all areas across the Kimberley. Only about a third of the required Aboriginal health workers (AHWs) are employed and this deficiency of about 100 AHWs is spread between towns and remote communities. The Kimberley Health Services, in particular, employ far fewer AHWs than they should in all areas where they provide services and, while accurate figures are difficult to obtain, anecdotal reports suggest that the number of AHWs employed by the Health Department of WA may even have declined over recent years. In more remote communities there is also a significant deficiency in medical and community nursing staff, partly due to staff often being located in towns and partly due to lack of absolute numbers of doctors and community nurses. There are also deficiencies in visiting specialist services,

however addressing deficiencies in visiting specialist services should, in most instances, not have the same priority as improving locally based PHC staffing.

Barriers to access to health care by Aboriginal people

There are a number of important barriers to accessing health services that Aboriginal people in the Kimberley face.

Geographical factors are significant barriers to health care in the Kimberley, and much more needs to be done to overcome problems related to transport and to the availability of appropriate health services closer to where people live. Access to transport is a major problem and prevents the provision of even a basic standard of health care for many Aboriginal people in the Kimberley. Many services are still not available anywhere near where people live, this includes a lack of staff and infrastructure for PHC in many remote communities and very limited district hospital services in Halls Creek and Fitzroy Crossing. For example hospital maternity services are not available between Derby and Kununurra, a distance of close to a thousand kilometres with about a third of the Kimberley Aboriginal population living in this area. Both the location of services and transport to the services that do exist need to be addressed.

While geographical factors are important, many of the barriers to access to services relate to the staff providing services. Many of the on-going problems Aboriginal people have with health services relate directly or indirectly to limited cultural understanding by non-Aboriginal staff. This lack of cultural safety from many health services reflects, in part, processes that exclude Aboriginal people from significant involvement in the provision of appropriate health care. Many of the non-Aboriginal staff providing services to Aboriginal people lack an adequate understanding of local Aboriginal culture and bring their ethnocentric attitudes to their health care work. This ranges from inappropriate interactions with Aboriginal patients through to instances of overt racism.

The two main approaches to improving cultural safety are to improve the training of non-Aboriginal staff and to increase the number of Aboriginal staff. There has been very little progress in either area by mainstream health services. Training provided for staff commencing work in the Kimberley is limited and, given the high turnover of non-Aboriginal staff in government health services, this lack of training is a major deficiency. Considerable expertise that could result in improvements in cultural safety is available through ACCHSs and other Aboriginal organisations, such as language centres and resource agencies. There are also major deficiencies in the employment of Aboriginal staff both to provide ongoing training of non-Aboriginal staff and to provide liaison services for Aboriginal people. This deficiency is a problem in the Kimberley and also in the Perth teaching hospitals that provide many of the more specialised services Kimberley people require. As a consequence the few Aboriginal staff employed in main stream health services often have to work in isolation and have unrealistic demands placed on them.

A third major area of deficiency in health services is cost to consumers. The cost of pharmaceuticals has been a major ongoing issue in the Kimberley. Problems with provision of health care cards, the cost of the gap and the expense of non-PBS medication (for example most treatment for fungal infections which are common in the Kimberley) have been major barriers to individuals maintaining consistent health care, and a major expense to communities. Recent progress in this area, with the extension of Section 100 of the PBS and co-operation with the Pharmacy Guild, has begun to improve this situation but cost is still an unnecessary barrier to accessing required drugs. This is particularly a problem where prevention of serious consequences of chronic diseases is the aim of treatment. The high cost of ambulance services in Kununurra and Broome is also a significant barrier to access to services in these towns and leads directly to the non-use of these services on some occasions when they are most needed.

In addition to barriers to accessing the services that do exist there are barriers in terms of services that are simply not available or are only available very occasionally. An example is dental care, which is often close to impossible to access from remote communities, or is only available at a very basic level (for example often only services that can be performed on a single occasion are possible, modern restorative work involving several visits is in practice unachievable).

Recommendations

Previous reports such as the National Aboriginal Health Strategy and the Royal Commission into Aboriginal Deaths in Custody have highlighted the importance of community involvement in planning and delivering improvements in Aboriginal health. This was reiterated in the WA Framework Agreement in Aboriginal Health. The Kimberley Aboriginal Health Plan therefore needs to focus firstly on getting the processes right.

Clearly the single most important change required in the Kimberley is the implementation of processes to ensure Aboriginal groups are fully involved in the ongoing planning of community development, and in the development of all services that have an impact on health. Services relating to health are by no means limited to health services, but health services should be trying to lead the way in implementing strategies designed to have a long term impact on Aboriginal health. Hence health services need to work rapidly towards greater community involvement. An important first step that is required is the establishment of regional and district bodies with majority Aboriginal representation that cannot be easily overruled or ignored by managers of local health services. KAMSC has such a structure at present; other health care services need to use this structure, or implement similar structures, and agree on joint planning bodies at district and regional level. A second essential major component in improving Aboriginal involvement in health services is, as has been documented in many previous reports, Aboriginal employment in all areas across health services. Processes to rapidly improve Aboriginal employment and training are urgently required.

Given the documented deficiency in funding for Aboriginal health services, and for community infrastructure in the Kimberley region, the second major priority for the Kimberley Aboriginal Health Plan is to develop mechanisms to increase funding for appropriate community based PHC.

One of the mechanisms to increase funding is increasing access to Medicare through the bulk billing of PHC services. This will address a small, but important, part of the current deficiency in PHC funding. Redevelopment of the very expensive hospital service in Wyndham could also, in the medium term, free up some recurrent funding that should be directed towards PHC. Other funding for health services and the even larger and more important deficiency in funding for infrastructure and community development will need to be obtained from government, both State and Federal. A cohesive approach at a regional level to requesting funding for these needs is required if such approaches are to have the best chance of success.

The highest priorities for increases in recurrent funding are for the employment and improvement of conditions for health staff, principally Aboriginal Health Workers. Staff should be employed to match the staff to population ratios recommended for Central Australia (as outlined in the report, 1 AHW per 100 Aboriginal population, 1 Community Nurse per 250 and 1 doctor per 600). Significant numbers of extra staff are needed in all areas, especially in communities out of the major towns. Details of a priority order as to where to employ AHWs needs to be decided at a local and regional level.

These staff increases need to be coupled with a system for ensuring that PHC services are delivered by a system with common conditions of service for staff, and Aboriginal community control at a local level. While it may be appropriate in the long term for some specialised staff to be employed directly through State government health services, depending

on circumstances, generalist staff should usually be employed by, or seconded to work with, local PHC providers. Non-Aboriginal clients could still be catered for through these services under contract in many areas. In areas where the number of non-Aboriginal people is larger, separate provisions for community health type services may need to continue. If such separate services are necessary, they should be provided on a similar basis to such services for non-Aboriginal people in other rural areas of the State.

The recurrent funding of community controlled PHC services needs to be expanded. One major priority is Wyndham, where a community controlled service should be established. Existing community health staff are responsive to the need for more community involvement and such a service could be developed collaboratively with existing health services in the town. Other major priority areas are to expand most of the existing services and to establish services in the larger remote communities and groups of communities. It is important that the balance between existing and new services be maintained and that existing services, most of which are under funded based on the figures in this report, not be starved of resources in the drive to establish new services.

The highest priorities in terms of capital funding are for PHC facilities in major communities with no such facility or where the facilities are inadequate. These include Fitzroy Crossing and Wyndham (in conjunction with redevelopment of more appropriate short term inpatient facilities at Wyndham). In addition there is an urgent need for redevelopment of the smaller hospitals in the Kimberley, beginning with Halls Creek (incorporating maternity services). A priority order for PHC service infrastructure needs should be decided at both district and regional levels.

A very important aspect of the Kimberley Aboriginal Health Plan is that it be an ongoing process and that it be evaluated through the use of appropriate performance indicators. Appropriate indicators for some types of services are recommended in the report and for PHC services it is recommended that indicators should be based on the national indicators being developed by the Commonwealth Department of Health and Aged Care in conjunction with the National Aboriginal Community Controlled Health Organisation (NACCHO). These will incorporate elements of the national Aboriginal health performance indicators and targets agreed by the Australian Health Ministers Advisory Council (AHMAC) in 1998 (and being further refined this year).

More detailed recommendations on other aspects of health services are included in this document. Details of the information and principles that underlie these recommendations, are included in the body of this report.

Chapter 1 – Introduction, Terms of Reference and Methods

The regional planning process is the result of the WA Framework Agreement in Aboriginal Health, which was initially signed in November 1996. This involves Aboriginal Community Controlled organisations, the Commonwealth Government and the State Government working in partnership to provide improved services in all areas related to Aboriginal health. In the Kimberley Aboriginal Health Planning process the participants have been the Kimberley Aboriginal Medical Services Council, the Kimberley Health Service, the three Kimberley Aboriginal and Torres Strait Islander Commission (ATSIC) regional councils, the State Health Department Office of Aboriginal Health (OAH), the Aboriginal Affairs Department (AAD) and the Commonwealth Department of Health and Aged Care (both the Office of Aboriginal and Torres Strait Islander Health, OATSIH, and the Department more generally).

As part of this process the Steering Committee for the Kimberley Regional Aboriginal Health Plan, consisting of representatives of the above bodies, commissioned the Centre for Aboriginal Medical and Dental Health at the University of WA to address the terms of reference listed below.

Terms of Reference

Collection of information

- To map out Aboriginal population profiles and mortality and morbidity patterns in the Kimberley region by age and sex. This will be to the level of towns and major Aboriginal communities where appropriate.
- To map out the type, distribution and frequency of existing health-related services provided for Aboriginal people (primary, secondary and tertiary level as well as aged care, dental and other services) across the Kimberley region to the level of towns and major Aboriginal communities, with information for smaller communities aggregated to the nearest major community or town. This should include information on health service structures, doctor services, AHWs employed, community nurses, visiting specialist services, dental services and aged care services and gaps in service provision.
- To seek evidence of the extent and nature of barriers in access to health care for Aboriginal people in the Kimberley region - including emergency care, community-based primary health care, GP and specialist services, dental services and pharmaceutical services. Barriers may include geographical isolation, transport access, perceived barriers related to cultural factors and/or racism, availability of liaison services and accommodation.
- To broadly profile social and environmental determinants of ill-health for Aboriginal people in the Kimberley region including housing, land, income, essential services, hygiene, food access, education and employment so as to improve opportunities for the health sector in intersectoral planning and collaboration.
  (The Office of Aboriginal Health (HDWA) and the Department of Health and Family Services undertook to provide much of the background information for the above terms of reference.)

Analysis and recommendations

- To interpret and analyse the information collected in the light of national, state and regional Aboriginal health policy and planning documents (in particular, the WA Framework Agreement in Aboriginal Health, the National Aboriginal Health Strategy, the Royal Commission into Aboriginal Deaths in Custody, the National Commitment to Improved Outcomes in the Delivery of Programs and Services to Aboriginal and Torres Strait Islander Communities).
- To identify strategies and develop recommendations for a Kimberley Aboriginal Health Plan with particular emphasis on urgent and outstanding unmet health needs.
- To recommend a monitoring and evaluation strategy for implementation of the Aboriginal health plan including identification of candidate explicit performance indicators (structure, process and outcome orientated).

The Project

In the Kimberley Aboriginal Health Planning process the participants are the Kimberley Aboriginal Medical Services Council, the Kimberley Health Service, the three Kimberley Aboriginal and Torres Strait Islander Commission (ATSIC) regional councils, the State Health Department Office of Aboriginal Health (OAH), the Aboriginal Affairs Department (AAD) and the Commonwealth Department of Health and Aged Care (both OATSIH and the Department more generally). The consultancy team was contracted by the Steering Committee for the Kimberley Aboriginal Health Plan to prepare this document, addressing the terms of reference described above, in November 1998.

The team assembled for the project consisted of Dr David Atkinson from the Centre for Aboriginal Medical and Dental Health at the University of WA, Ms Catherine Bridge from the Kununurra District Hospital (and subsequently employed by the East Kimberley Aboriginal Medical Service) and Dr Dennis Gray (an expert on Aboriginal alcohol and drug issues, with wide experience in Aboriginal health). Dr Atkinson has worked as a medical practitioner in Aboriginal health for the past 18 years in the Kimberley, Perth, elsewhere in WA and in the Northern Territory. He has worked extensively on a range of policy issues in Aboriginal health over the past ten years including working on a number of reviews. Ms Bridge is an Aboriginal registered nurse from the Kimberley who has worked in various capacities in the health system for several years both in the Kimberley and in Perth. Dr Dennis Gray has worked for many years in Aboriginal health, commencing with the Community Health Services in the mid 1970s. He has been the principle author of several reviews and has published widely on Aboriginal health issues in both books and journals. Recently he has worked predominantly in the area of alcohol and substance use, including work with a number of Aboriginal community organisations in the Kimberley on services in the Kimberley for people with substance use problems. In addition Ms Victoria Hovane, Ms Paula Edgill and Mr Jason King, all of whom have experience in Aboriginal health, were employed for six weeks in late 1998 in Perth to assist with collecting and summarising information to be used in the final report. Ms Bridge was based at the East Kimberley Medical Service (EKAMS) in Kununurra during the project and the other staff were based in Perth.

This team commenced preliminary work on the Kimberley Aboriginal Health Plan project in the second half of November 1998. Dr Atkinson and Ms Bridge then met with the Steering Committee in Kununurra on the 11th of December, a preliminary document on principles was discussed and detailed work on the project began. A second meeting of the Steering Committee with Dr Atkinson and Ms Bridge occurred in Derby in February 1999 at which documents relating to health services in the Kimberley were discussed. Subsequent meetings and teleconferences reviewed the draft version of this document, discussed the recommendations in detail and agreed on the final version of the recommendation in June 1999. The final teleconference to complete this phase of the Kimberley Aboriginal Health Planning Project was held in August 1999. Agreement on the recommendations was signed by all parties late in 1999.

Information was collected on health and services in the Kimberley, including reports from all the agencies involved in the Steering Committee. Further information was obtained from the Australian Bureau of Statistics, the Education Department and other government agencies. In addition verbal information was obtained from a range of people involved with the provision of services. The staff in Perth approached agencies for information, gathered documentary evidence as it came in, obtained further information by telephone and summarised this background information for the final report. Ms Bridge was responsible for collecting detailed information on the services available as well as other information about communities and used a combination of visits and telephone calls to gather the information required. She also prepared the information for Appendix 2, which describes services in Kimberley communities. Dr Gray prepared a detailed report on alcohol related harm and the Kimberley services

specifically designed to reduce or prevent this harm, and presented recommendations in this area. He also provided advice and comment on a range of other issues.

Dr Atkinson was responsible for consulting key members of health related agencies in the Kimberley including visiting the Kimberley to consult with people in each of the six major towns. He also had contact with the State run regional planning process for health related services in the North West of the State, NorHealth 2020. The area covered by the NorHealth 2020 planning process includes the Kimberley region and is designed to address all health needs in the area, including Aboriginal health needs. Dr Atkinson was also responsible for the preparation of the interim documents prepared for the Steering Committee, in December 1998 and January 1999, for the major draft of this document circulated in April 1999 and for preparing this final report.

Chapter 2 – Underlying Issues for Kimberley Aboriginal Health

Aboriginal health status as it is in the Kimberley today is the product of well over a century of change and the causes of current circumstances need to be acknowledged as part of the process of finding solutions to this very serious problem. A range of concerns need to be addressed if the large and growing gap between Aboriginal and non-Aboriginal health in the Kimberley is to begin to become narrower. The section below describes some of the important underlying obstacles to improving Aboriginal health.

Environmental Circumstances

Aboriginal people in the Kimberley have consistently faced living with poor environmental conditions since large tracts of land began to be taken for pastoral activity in the late 19th century. This has been followed by a long history of government policies involving the "...physical and social dislocation of traditional family-based groups..." (McDermott, O'Dea, Rowley, Knight, & Burgess, 1998 p653).

In earlier years many people were forced to live in camps near homesteads to provide labour for pastoral properties, often with almost no facilities. Missions and reserves were established from the first half of this century and then expanded substantially in the 1950s (McLeod, 1984) as people from the pastoral industry were systematically moved off the land. Changes in policies since the 1970s have allowed Aboriginal people in some areas to return to their country, however it has been widely acknowledged that there are difficulties in meeting the need for essential services in many of the resultant communities and/or outstations (Task Force on Aboriginal Social Justice, 1994). Through all of these processes grossly inadequate environmental conditions have continued to contribute to poor health for large sections of the Kimberley Aboriginal population. These poor environmental conditions have been associated by many authors with the consistently poor health outcomes documented for Aboriginal people (Aboriginal Affairs Planning Authority, 1994; Dodson, 1991; National Aboriginal Health Strategy Working Party, 1989).

Infrastructure has been built in many areas over the past 30 years, large amounts of money have been spent and some areas have some very good facilities. However, the extent of the deficiency in basic community infrastructure has been so large that while progress has been made, widespread deficiencies remain.

Apart from the overall deficiencies in quantity of infrastructure there have often been significant deficiencies in the appropriateness of what has been provided and Aboriginal people have had little control both over what is provided and where. Only in fairly recent times have Aboriginal people had a say in the infrastructure constructed in their communities and even then major infrastructure expenditure has often been decided by others without sufficient care to ensure that what the community needs is delivered. In the past this has often meant inappropriate housing design, mismatches between essential services, and facilities that are inadequate for the task (Dodson, 1991).

Dodson, writing for the Royal Commission into Aboriginal Deaths in Custody (1991) noted that the development of housing and infrastructure must be governed by priorities as set by the recipients of such development. That is, there must be community involvement in any such planning, design and implementation, in order to ensure its relevance and appropriateness for the target group. Further, when assessing and planning the development of housing and infrastructure, these assessments and plans must include ensuring the ongoing maintenance of such housing and infrastructure. This is crucial in working towards

improving the environmental conditions and health status of Aboriginal people in the Kimberley and elsewhere.

An example of the extent of the problem in the recent past is contained in the Kimberley Land Council submission to the Royal Commission into Aboriginal Deaths in Custody. The KLC stated that 28 per cent of communities had inadequate water, 76 per cent had no electricity, 68 per cent had improvised housing and almost half had roads which were frequently impassable in the wet season (Johnston, 1991a p447).

Examples of housing without power or without water, communities with power and water but long delays in building housing and housing without adequate waste disposal were described to the consultant. Other examples provided included sewerage systems designed for 100 people regularly used by 500 people and a range of examples of facilities that can not cope with the extremes of climate in this region. In addition the consultant was made aware of examples of poor workmanship and problems with contract supervision leading to facilities that did not meet specifications and hence needed frequent maintenance or costly repairs.

All these problems need to be seen in the context of inadequate resources to address the need. There has never been anything approaching adequate infrastructure for Aboriginal people in the Kimberley and people managing resources have often been left with an impossible task to satisfy the needs of people in a particular area. Individuals working for government and other service agencies are generally doing their best with woefully inadequate resources and can not possibly be expert in all the technical areas involved. In these circumstances compromises have to be made. This has led to many of the problems discussed above, through attempts to get work done cheaply and quickly to address major deficiencies. Demands to 'fix things' but with only limited resources have led to temporary solutions in some areas that use up resources that were originally intended for the long term provision of appropriate infrastructure.

Whatever the historical reasons, the problem is that poor environmental conditions continue to be far too common and this needs to be addressed if the health of Aboriginal people is to approach the health of non-Aboriginal people. The main health concerns in a range of communities include poor quality and/or insufficient housing for the number of people to be housed, poor waste disposal systems including problems with inadequate or unreliable sewerage systems, inadequate supplies of potable water and lack of access to reliable power supplies. Detailing all the problems in terms of infrastructure in the Kimberley is beyond the scope of this report, however a range of comment on many of the issues is presented below.

Housing

The housing people live in is a major part of their environment and a focus for other services which support and supplement the home environment such as water, power, waste disposal and more general community facilities. The Task Force on Aboriginal Social Justice (TFASJ) noted that *"Adequate housing is one of the basic foundations of living.",* the absence of which can have *"...enormous personal and social consequences."* (Task Force on Aboriginal Social Justice, 1994 p 475). Dodson (1991) reported that the lack of access to adequate housing experienced by Aboriginal people living in remote areas, is generally accompanied by a corresponding lack of access to supporting infrastructure.

The deficiency in housing and infrastructure has been noted for decades to be having a significant impact on Aboriginal health outcomes (Dodson, 1991; Gracey, Williams, & Houston, 1997; Gray & Atkinson, 1990; Ridolfo & Codde, 1997; Task Force on Aboriginal Social Justice, 1994). For example, a House of Representatives Standing Committee in 1979, acknowledged a relationship between health outcomes, and environmental and infrastructure conditions, by reporting that

"The high incidence and recurrence of many infectious diseases amongst Aboriginals...result largely from their unsatisfactory environmental conditions." (Johnston, 1991a p451).

Unfortunately the significant gap between the supply and demand for housing for Aboriginal people (Task Force on Aboriginal Social Justice, 1994) does not appear likely to be corrected in the near future. ATSIC noted the inability of existing government programs to meet Aboriginal housing needs, in its submission to the Royal Commission into Aboriginal Deaths in Custody (RCIADIC) that stated
"...the unhoused, the inadequately housed and the overcrowded will largely remain so in this century." (Johnston, 1991b p470).

The recent Environmental Health Needs of Aboriginal Communities in WA Survey (EHNS) found housing still to be one of the most commonly mentioned areas of need in the Kimberley (Environmental Health Needs Coordinating Committee, 1998) confirming the above prediction as we head into the 21st century.

Crowding

A senior person in Aboriginal health (not currently working in WA) stated to the consultant a few years ago that Aboriginal people like to live in close proximity for cultural reasons and therefore person to person spread of diseases would not be reduced much by providing more housing. While it is true many people like to live reasonably close to their extended family, very few people live by choice with eight or ten people in a two bedroom house. The reality is that most people have little option and have never had the option.

To give a context to the problem of housing some figures from the Australian Bureau of Statistics are considered here. For example almost 18 per cent of family households have more than one family in them. This translates to close to one in three Aboriginal families sharing a house with one or more other families (Australian Bureau of Statistics, 1997). Clearly this has important implications for the spread of disease and the capacity of people to keep themselves healthy.

Perhaps some of the most pertinent statistics relate to the number of people per bedroom when considering housing. Not only do Aboriginal people have many people in the houses they live in, but also these houses tend to be small, with only a small number of bedrooms. While by necessity all the people resident in a house do not sleep in the bedrooms available (indeed they would sometimes have to be stacked vertically to fit) this is an important indicator of the extent of crowding.

Jones (1994) reported that almost one quarter of the Aboriginal families in WA were either homeless or experience housing stress due to overcrowding. He based these findings on 1991 Census data and the following criteria:
"(i) parent(s) eligible for a separate bedroom;
(ii) non-dependent children and other adult household members are eligible for a separate bedroom (unless married);
(iii) for dependent children, a maximum of two persons per bedroom." (Jones, 1994, p7).

Jones estimated that in 1991 between 148 and 285 additional bedrooms were required for every 1,000 Indigenous people in each of the Kimberley ATSIC regions. If the situation has not improved, based on a current Aboriginal population of 15,500, these figures would translate to a deficiency of about 3000 or more bedrooms, the equivalent of 1000 houses with an average of three bedrooms or 750 houses with an average of 4 bedrooms. Based on available information the need appears to have been reasonably similar five years later.

According to data provided by the Australian Bureau of Statistics (ABS) from the 1996 Census between a quarter and a third of all Aboriginal people in the Kimberley live in

households with 8 or more people and most of these were living in houses with three or fewer bedrooms. Up to 200 Aboriginal people were recorded as living in a 2 bedroom house with 10 or more people and close to 1000 people were recorded as living in a three bedroom house with 10 or more people. Thus according to ABS close to 10 per cent of the Aboriginal people counted lived in households of ten or more in two or three bedroom houses (Australian Bureau of Statistics, 1997). These levels of overcrowding do not occur amongst non-Aboriginal people in the Kimberley. In the entire Kimberley only 3 non-Aboriginal households had 8 or more people and none were recorded as having 10 or more people.

As discussed in Appendix 1, the ABS Aboriginal population figures for the Kimberley are significantly understated, thus the reality is probably worse than the ABS figures paint it. Interestingly no households of ten or more were recorded in Kununurra, despite the Wunan ATSIC region (which incorporates Kununurra) having the highest rate of overcrowding in the State according to other reports (Environmental Health Needs Coordinating Committee, 1998). This figure is likely to be a reflection on the census taking rather than the reality since ABS figures on most topics for Kununurra are at variance with figures for all other areas in the Kimberley.

Taking an ideal approach of a maximum of 2 people in one bedroom accommodation, 3 people in 2 bedroom, 4 people in 3 bedrooms and so on, there are about 970 Aboriginal and Torres Strait Islander households in the Kimberley that are overcrowded compared with only 370 non-Aboriginal households. A stricter approach to defining overcrowding (perhaps stricter than Jones used as described above) might be to consider 3 people as crowded in a one bedroom dwelling, 5 people in a two bedroom dwelling, 6 people in a three bedroom dwelling, 7 people in a four bedroom dwelling and 8 or more in any dwelling. Using this approach there were still around 700 overcrowded Aboriginal households and only 125 overcrowded non-Aboriginal households reported in the 1996 census. Realistically, based on these figures, at least 700 additional dwellings for Aboriginal people in the Kimberley is the minimum required to address the deficiency. The real deficiency is probably greater, since counting houses is obviously substantially easier than counting people and, as shown in Appendix 1, the ABS clearly under counted people to a significant extent.

The enormity of this problem and the consequences of inadequate housing on attempts to improve health are difficult to overstate. With population growth of perhaps 300 people per year around 70 houses are needed each year just to stop going backwards in this area (at an average of four or five people per house). Even if 200 houses were built per year it would take five and a half years to address a basic deficiency of 700 houses. That is not accounting for the need for substantial upgrading of many of the existing dwellings (see below) and the fact that a number of houses will need replacing each year. The real need in this area has to be documented in more detail but clearly building something over 300 good quality houses a year, and the associated infrastructure of power supply, water and waste disposal, for a number of years will be required. The Kimberley would then be beginning to head towards having something approaching an acceptable standard of housing for Aboriginal people.

Home ownership

Aboriginal people in the Kimberley are much less likely to own or be purchasing their homes compared with their non-Aboriginal counterparts (Aboriginal Affairs Planning Authority, 1994; Jones, 1994). According to the ABS, only 91 houses were being purchased by Aboriginal and Torres Strait Islander people in the Kimberley in 1996. Seventy of these were in the Broome and Derby districts.

Encouraging home ownership has been suggested as an important part of improving housing standards for Aboriginal people and in some settings it may, for example, be very useful to encourage tenants to buy rental properties. Unfortunately the major reasons for Aboriginal home ownership not yet being a high priority in the Kimberley are all too obvious. With a

median income of substantially less than $200 per week in most areas (Australian Bureau of Statistics, 1997) and the current level of demand on housing from poorly housed extended family, home ownership for most people would not be a wise investment decision. Certainly the maintenance costs are likely to be large.

While it may have a role, encouraging home ownership will not, at this stage, make much of a dent in the urgent housing needs of the Kimberley. If the quantity and quality of housing was generally more adequate then encouraging home ownership might have a bigger impact at some stage in the future.

Rental accommodation

Rental accommodation presents another set of problems that Aboriginal people throughout the country have to deal with. Kimberley people share many of these problems. For example, there are long waiting lists for housing, problems with obtaining timely repairs, inability to afford repairs, high levels of eviction and discrimination in the private housing market. All of which serve to exacerbate the problem of homelessness. Even where people do have housing, many experience problems in maintaining the payment of rent and other service charges (Jones, 1994); Dodson 1991; (Task Force on Aboriginal Social Justice, 1994)

This latter issue was highlighted by the Wunan Regional Council in its 1996/97 Annual Report, (Wunan Regional Council, 1997) wherein they note that the population in one community expanded as a result of difficulties experienced by many of those people in housing where they were paying Homeswest rent. The people simply moved out of the Homeswest housing and into a community that is characterised by improvised dwellings (Environmental Health Needs Coordinating Committee, 1998). People are often caught in a pincer between inadequate income and the payment of significant rent and other service charges, hence they return to the circumstances that created many of the health problems in the first place.

Inadequate housing

Apart from the need for more housing, as discussed above, there is a major need for housing to be upgraded or replaced. Many people still live in improvised dwellings or in housing with major deficiencies. The ATSIC regions with the two highest proportions of Aboriginal households living in improvised dwellings in the State, were the Wunan (19 per cent) and Kullari (16 per cent) Regions (Environmental Health Needs Coordinating Committee, 1998).

As discussed in the previous section, apart from the severely limited availability of appropriate housing there is the issue of affordability. Where people are not able to afford 'adequate' housing, they may resort to seeking alternative affordable accommodation, cutting back on other essential goods and services (such as food and clothing), and/or increasing the number of people in the household to share living expenses (Jones, 1994). As also noted by Jones, these rational responses to poverty have clear consequences for health. For example, the only affordable accommodation available may have inadequate facilities, if rent is paid there may be deficiencies in adequately meeting nutritional needs, and there may be overcrowding, together with issues associated with stress and domestic violence (Dodson, 1991; Jones, 1994).

The inadequacy of accommodation is illustrated in the recent Environmental Health Needs Survey. After *"...excluding caravans, dongas without facilities, improvised shelters and other undefined dwellings."*, in several communities none of the population live in adequate housing, or as was the case in another community, there was only one adequate house in a population of 140 people. This is based on the definition of 'Adequate' housing as having *"...connections to facilities such as electricity, water and sewerage disposal."* but *"...it does*

not necessarily mean all facilities are functioning." (Environmental Health Needs Coordinating Committee, 1998, p17). Hardly tough criteria for adequate housing!

Housing maintenance

Simply increasing the number of houses and bedrooms is not enough to address the disadvantage experienced by Aboriginal people in the Kimberley and elsewhere. ATSIC in its submission to the RCIADIC, noted that *"...The number of Aboriginal and Torres Strait Islander households is growing and the existing housing stock is aging"* (Johnston, 1991b p470). Johnston recommended that any assessment of housing needs should *"...also incorporate assessments that relate to management, administrative and housing support needs."* (Johnston, 1991b p459).

Maintenance remains a continuing concern. In the 1997 survey just over half of the Aboriginal houses surveyed in the Kimberley were in need of repairs. Well over a third of houses in the Kimberley had 1 to 2 facilities that were not functioning. Houses with massive maintenance needs were also common. In the Wunan and Malarabah Regions about 8 per cent of houses had 6 or more facilities not functioning and were amongst the worst in the State. Areas of greatest need generally, were repairs to doors and windows, repairs to internal wet areas, repairs to other internal surfaces and repairs to external surfaces (Environmental Health Needs Coordinating Committee, 1998).

Other services

Water supply

Access to adequate quantities of clean water has been an ongoing problem for many communities. This section outlines some of the information from the 1990s and the current deficiencies in this area.

The 1992 ATSIC National Housing & Community Infrastructure Survey reported that of the communities surveyed, 17 per cent had water supplies that did not conform to the National Health and Medical Research Council guidelines (cited in Aboriginal Affairs Planning Authority, 1994). The Survey also noted that of the communities surveyed, 13 per cent did not have a maintained water supply and 10 per cent had had water restrictions in the twelve months prior to the survey, primarily as a result of equipment breakdown (Aboriginal Affairs Planning Authority, 1994). The 1994-95 WA Aboriginal Environmental Health Survey of 155 remote and rural communities revealed that 38 per cent of communities, affecting 34 per cent of the total population surveyed, had significant problems with their water supply (Gracey et al., 1997).

In 1997 access to some type of water supply was much less of a problem than previously but was still an issue for some communities. Generally access to water was not reported to be a problem in the Kullari Region, however three communities (Mimbi, Mowla Bluff, Djarworrada) in the Malarabah Region, and nine communities in the Wunan Region reported they did not have access to an adequate water source. This affected 184 people in the Wunan Region and 66 people in the Malarabah Region *(A water source was defined as inadequate "...if water needs to be carted, if the supply is interrupted because of a dry or collapsed bore, or if there is no pump")* (Environmental Health Needs Coordinating Committee, 1998, p22). Although the above data for the Wunan Region represents only 4 per cent of the usual population and less for the Malarabah Region, this is still an unacceptable number of people who do not have access to an adequate water source (Environmental Health Needs Coordinating Committee, 1998).

Although most communities had access to a water supply the quality of the water people received was not regularly being assessed. Most communities reported that no testing or disinfection of the water was undertaken to prevent contamination (Environmental Health Needs Coordinating Committee, 1998). This has important implications particularly in relation to gastroenteritis and other infectious and parasitic diseases (Gracey et al., 1997). Apart from microbial contamination water supplies can also have varying levels of both beneficial and potentially harmful inorganic substances. For example low levels of fluoride in some water supplies is probably contributing to the severe dental caries seen in some areas and excess fluoride which may be present in some bore water supplies used by communities can potentially cause problems with teeth and bones. Chemical monitoring, as well as bacteriological monitoring, of water supplies also needs to be carried out on a regular basis.

That this situation that affects so many Aboriginal people has been allowed to continue for so long sits in stark contrast to the considerable reactions to the recent cryptosporidium and giardia contamination of Sydney's water supply. In Sydney there was a problem that caused no illness, yet very strenuous, urgent and expensive efforts were made to fix the system. In the Kimberley Region potentially dangerous water supplies have continued to be used for decades and publicity is minimal.

A plentiful and reasonable quality water supply is essential if infections are to be reduced. With most communities now having access to some type water supply, it is past time to increase the efforts to ensure good quality, safe, fluoridated water is delivered to all.

Electricity

Electricity, like water, is now available in most communities, however again like water there are still many problems to be addressed. Certainly access to some sort of electricity supply has improved in recent years. Of the communities surveyed nationally in 1992, 25 per cent did not have an electricity supply (cited in Aboriginal Affairs Planning Authority, 1994). Results from the 1994-95 WA Aboriginal Environmental Health Survey also indicated that lack of access to power supplies was a problem in 22 (14.2 per cent) of the 155 communities surveyed (Gracey et al., 1997). By 1997, in the Kimberley only eight communities surveyed were without any electricity supply. The largest number of people in the State that were affected by lack of access to a source of electricity occurred in the Wunan Region (119 or 2.5 per cent of the Aboriginal population in the region). No people were reported to be affected in the Kullari Region and 15 people in the Malarabah Region (Environmental Health Needs Coordinating Committee, 1998)

Whilst these figures demonstrate that most people have access to a source of electricity, they do not take into account associated difficulties experienced by communities who are largely serviced by community or domestic generators. Regular interruptions to power supplies were reported in 70 per cent of communities surveyed in the Kullari Region, 37 per cent in the Wunan Region and 30 per cent in the Malarabah Region. These interruptions affected 92 per cent, 36 per cent and 28 per cent respectively, of the usual population of communities in those regions. The most common causes of interruptions to power supplies were due to equipment breakdown, lack of fuel, generators inadequate for the load, equipment damage, and equipment not being maintained (Environmental Health Needs Coordinating Committee, 1998).

As with housing needs, it is not enough to merely ensure access to a power supply or to increase the number of generators. Clearly there needs to be ongoing maintenance and other programs to deal with the persistent problem of interruptions to power supplies to communities. Even where communities are connected to town power supplies, the connection is often only to a meter at the community's boundary, and is very much dependent on the adequacy and maintenance of the community's internal electrical reticulation system (Environmental Health Needs Coordinating Committee, 1998).

Sewerage

In the 1992 national survey 15 per cent of communities did not have a sewerage system (cited in Aboriginal Affairs Planning Authority, 1994). The 1994-95 WA Aboriginal Environmental Health Survey found that 27 communities, affecting 33 per cent of the population surveyed, were affected by significant sewerage problems (Gracey et al., 1997).

By 1997 in the Kimberley, approximately 11 per cent of the communities surveyed in the Wunan Region, 10 per cent in the Kullari Region and 8.5 per cent in the Malarabah Region reported not having an adequate sewage treatment or disposal system. Whilst this now represents a relatively small proportion of the communities surveyed, it still represented 161, 68 and 74 people from those three regions respectively, lacking access to adequate sewage treatment or disposal systems (Environmental Health Needs Coordinating Committee, 1998).

In addition, where communities did have access to sewage disposal systems such as septic tanks and leach drains, but were not connected to community sewerage, over 50 per cent of the communities surveyed did not have access to pump-out equipment. Up to 1068 and 1533 people in the Wunan and Malarabah Regions respectively, live in affected communities. Additionally one community in the Kullari Region (30 people) and two communities in the Wunan Region (347 people) had sewage treatment lagoons that were not adequately fenced. This is a major concern as children and dogs may be tempted to play in and around lagoons, with obvious health risks (Environmental Health Needs Coordinating Committee, 1998). Clearly ongoing and effective maintenance programs are also required in this area.

Disposal of rubbish

In order to reduce the prevalence of vermin (such as rats and cockroaches), adequate garbage collection and disposal is also essential. Close to a third of the communities surveyed in each Kimberley ATSIC region reported that rubbish was not always collected. This affected several thousand people across the Kimberley (Environmental Health Needs Coordinating Committee, 1998).

Across the State as a whole a total of five Aboriginal communities reported not having a rubbish tip, or access to one (Environmental Health Needs Coordinating Committee, 1998). These five communities were all located in the Kimberley Region. Where Kimberley communities did have a rubbish tip, thirty were reported to be inadequate *(an adequate tip was defined as being "...a well fenced dug trench or pit")* (Environmental Health Needs Coordinating Committee, 1998, p43). Generally, dumping areas in communities throughout the State were not well fenced and as a consequence children and animals had access to them. In addition, over half of these communities in the Kimberley reported a tip capacity of less than 12 months and nearly half of the communities reported unsatisfactory tip management. Not surprisingly, high levels of litter were a problem in a number of communities (Environmental Health Needs Coordinating Committee, 1998).

Road access

In its criticism of the poor condition of access roads to remote communities, the Royal Commission Into Aboriginal Deaths in Custody noted that *"The need to upgrade roads in and to Aboriginal communities is one of the largest infrastructural expenditures required for improving the quality of life in Aboriginal communities"* (Johnston, 1991a p450). Further, as noted in several reports, the condition of access roads has the potential to substantially affect the well being of people living in remote communities and *"...the social justice function of transport and communication, in terms of providing access to facilities, cannot be*

underestimated" (Johnston, 1991a p450). The poor condition of access roads makes them dangerous to negotiate and contributes significantly to the isolation of communities. Poor roads add to the cost of basic goods and services through increased transport costs, in addition to the already high cost of petrol and repairs for damage to vehicles imposed on remote communities (Dodson, 1991; Task Force on Aboriginal Social Justice, 1994).

In 1992, of the communities surveyed nationally, 83 per cent reported not having sealed roads (cited in Aboriginal Affairs Planning Authority, 1994). In WA, the TFASJ (1994 p487) noted that many of these *"...secondary, unclassified and undesignated type roads..."* that service larger communities in several areas of the Kimberley (for example the Balgo and Cape Leveque areas) remain in an unsatisfactory condition. They also noted that at the time, undesignated roads were not included in official road inventories, and as such, did not receive funding under existing road programs (Task Force on Aboriginal Social Justice, 1994).

Unfortunately the poor condition of access roads continued to be a major issue in the recent 1997 survey with the lack of reliable access to and from communities being the most frequently mentioned area of need in the Kimberley (Environmental Health Needs Coordinating Committee, 1998).

General environmental conditions

In addition to the wide range of problems detailed above, the physical environment in many communities is less than ideal in a range of other ways. Communities often lack even relatively simple treatments including paving of internal roads, the provision of wind breaks and the cultivation of plants to reduce wind blown dust. This is an important issue for many people and was highlighted in the 1997 survey with a high proportion of the communities surveyed being rated as having high or excessive levels of dust. This affected 70 per cent of the Kullari population, 49 per cent of the Malarabah population, and 55 per cent of the Wunan population (Environmental Health Needs Coordinating Committee, 1998). Problems with excessive wind blown dust affect the general quality of life as well as probably contributing to eye disease, skin disease and in some circumstances, lung disease.

Food Access and Availability

Food is an important element in health and a range of issues related to access to appropriate nutrition need to be considered in more detail in planning for good health.

The role of nutrition in health

Dietary factors are directly associated with several of the major causes of morbidity and mortality in Aboriginal and Torres Strait Islander communities. This is particularly important for Aboriginal people living in remote areas. Long recognised nutrition-related diseases amongst Aborigines living in the Kimberley include ischaemic heart disease, stroke, non-insulin dependent diabetes, atherosclerosis and some types of cancer (Couzos & Murray, 1998).

In addition poor nutrition increases susceptibility to a range of conditions through reduced resistance and a reduced ability by a poorly nourished body to repair itself. This includes increasing the risk of acquiring infections of all types and increased susceptibility to a range of conditions that are also more directly nutrition related such as those listed above. In addition the absence of protective antioxidant vitamins and dietary micronutrients has been proposed as a major factor in cardiovascular and other chronic diseases.

More recently considerable evidence has emerged suggesting that a sizeable proportion of chronic adult illness may have its origin in foetal life and possibly early childhood. There have been clear associations documented between low birth weight and cardiovascular disease, non-insulin dependent diabetes mellitus (Stern, 1996) and renal disease (Hoy, Rees, Kile, & Mathews, 1996). A number of plausible biological mechanisms for these associations have been proposed relating to maternal and early childhood nutrition. Clearly nutrition is an issue with major ramifications across a wide range of health concerns.

Even without this more recent information on the interaction of lifetime nutrition and chronic disease, under-nutrition has long been recognised as a major determinant of the continuing low standards of Aboriginal health, particularly for mothers and their infants and young children. It has been repeatedly documented that in many remote regions dietary deficiencies are still widely prevalent, particularly in children. Maternal malnutrition has long been recognised as contributing significantly to unsatisfactory nutrition and health in infants and young children (Gracey, 1991).

In 1998 Rousham and Gracey documented yet again the overall extent of growth faltering among Aboriginal infants and young children in the remote tropical north of Western Australia. They also pointed out that under nutrition is still almost as pronounced today, as it was 20 years ago. They did however, note that since the mid-1980s the discrepancy between child growth in remote rural communities and towns in the Kimberley has declined compared with the 1970s, indicating some improvement in childhood nutrition in remote communities (Rousham & Gracey, 1998b).

Food accessibility and quality plays a major role in determining the health status of individuals. Adequate nutrition depends on regular access to a balanced diet with sufficient energy, nutrients, vitamins and minerals. Food choice and consumption behaviour are influenced by many factors including income, nutrition knowledge, personal and family experience, cultural preferences and the availability of nutritious food. The quality, price, affordability and the relative availability of fresh fruit and vegetables in remote areas is usually poor (National Aboriginal Health Strategy Working Party, 1989). Poor health outcomes in these areas are not surprising given that a problematic food supply is combined with low incomes for most Aboriginal people (Australian Bureau of Statistics, 1997).

The cost of food

The price of food in remote areas can be substantially higher than in Perth. This has been systematically documented with local market basket surveys for more than a decade. The market basket used to estimate the Consumer Price Index (CPI) is based on the most common purchases in Australian capital cities. The CPI includes not only the cost of foods to prepare at home but other items as well. Many of the items in the Australian CPI are not relevant or even available for Aboriginal people in many parts of the Kimberley. Therefore, a local market basket was devised in the 1980s that was based on the most popular grocery items from the relatively restricted range of products usually available across the Kimberley (Sullivan, Gracey, & Hewson, 1987).

Surveys undertaken since the mid 1980s have found that the costs of an average family food basket are of the order of 60 to 80 per cent or more higher in a number of areas in the Kimberley than in Perth. While prices of goods have consistently been of the order of 15 to 25 per cent higher in Broome and Derby, they are 40 to 50 per cent or more higher in towns like Fitzroy Crossing and Halls Creek and 50 to 90 per cent higher (or worse) in Aboriginal community stores. This high cost encourages poor dietary patterns and contributes to poor nutrition and related diseases, particularly amongst infants, young children, and mothers.

Market basket results supplied to the consultants for 1998 show that in Perth the market basket costs an average of just over $305, while in Derby, generally the cheapest Kimberley town, the market basket cost about 15 per cent more. Other towns were often much more costly and costs were much higher in community-based food stores. In Broome it cost 25 per cent more than Perth, in Wyndham 38 per cent more, in Kununurra 26 per cent more, in Fitzroy Crossing 51 per cent more and in Halls Creek 53 per cent more. In remote communities prices were even higher with the average price for West Kimberley communities being $463 (51 per cent more than Perth) and for East Kimberley communities $541 (77 per cent more than Perth). These figures are averages and particular communities may pay considerably more. Fresh fruits and vegetables are particularly expensive outside the major settlements and are often limited in supply and availability. These discrepancies in price were generally wider in 1998 than they were in 1986.

Since most Aboriginal people spend most of the small amount of money they receive on day to day expenses it is not surprising their money runs out quickly with prices like these. In dollar terms these price differences can increase food costs for a family by $200 or more per fortnight. Differences of this magnitude are not allowed for in Centrelink or CDEP payments for remote communities.

Community stores

Community stores are often the only source for most goods in a community and also may well be the largest business enterprise in the community (Crough & Christophersen, 1993). There are many reasons for the high cost of goods in community stores which can be partly explained by the fact that many stores are located in isolated areas. Transport is a major cost, not just because of distance but because of poor roads and relatively low turnover. In a number of isolated communities air transport is often required for fresh foods. In addition small businesses often have to pay higher prices than chain stores that operate in larger towns. Important local factors that add to these general problems include seasonal variations, fluctuating populations, problems with remote area stock management and wide variations in demand.

Other factors that influence prices relate to the management of stores. Aboriginal councils and other incorporated bodies own Aboriginal stores under various administrative and legal arrangements. The community councils directly own some, and profits move directly into

community accounts, while others are commercial enterprises that are administratively and legally separate from the community.

Problems associated with running Aboriginal community stores impact on the cost of goods. These problems include: difficulties in recruiting skilled and honest managers; inadequate management systems leading to poor financial accountability; high staff turnover creating inefficiencies and stability problems; poor relationships between communities and store managers; lack of community commitment and preparedness to take responsibility for the store's success; goods damaged in transit due to bad roads and inadequate packing; poor stock control; high transport costs; inadequate store security; inability to secure lower prices through volume purchasing; high levels of bad debt due to credit mismanagement; and dishonesty by managers and staff (Task Force on Aboriginal Social Justice, 1994: Appendix N).

Community stores are the biggest commercial enterprises in most isolated Aboriginal communities. Generally they are fixtures and enjoy a captive market. Their current and potential role is of significance to Aboriginal economic development and to future health. Store managers wield considerable power over the food supply of remote Aboriginal communities and can be important allies or enemies in efforts by Aboriginal communities and their health services to improve dietary intakes.

Aboriginal communities can collectively bring about improvements in their generally poor nutritional status by taking control and maintaining ownership of community-based intervention programs (Lee, Bonson, Yarmirr, O'Dea, & JD, 1995; Lee, O'Dea, & Mathews, 1994). Improvements in dietary intake can occur as a result of choice of suitable foods, rather than as a result of limited options, the store providing a natural focus for increasing the variety of food available and this may be more effective than trying to manipulate food prices. Dietary messages may then be able to have some affect on better nutrition.

Improving access and consumption of more health promoting diets involves sectors other than health. Health service providers and health professionals have a major role in advocacy and in bringing government and non-government agencies together to implement constructive nutrition related health policies.

Education and Training

Another important contributing factor to the continuing cycle of poverty and ill health for Kimberley Aboriginal people is poor levels of education. Alarmingly 30 per cent of Aboriginal children do not go on to secondary education and only 1.6 per cent of students go on to any type of post-secondary education. As a result, most Aboriginal people in the region are not able to even contemplate taking on jobs within the community such as bookkeeping, accounting and coordinator positions (Wunan Regional Council, 1997).

There is a wide range of social, cultural and historical reasons for the cycle of poor education that affects Aboriginal communities throughout the State. Relationships between non-Aboriginal educators and Aboriginal communities have often been strained and efforts to change the acceptability and the standard of education provided have had limited success to date (Dodson, 1991; Groome & Hamilton, 1995; Wunan Regional Council, 1997).

Education and training are closely linked to employment, and unemployment or underemployment goes hand in hand with low levels of educational achievement. Most of the people with formal qualifications, both in the Kimberley in general and in the health sector in particular, have always been non-Aboriginal while most of the people they provide services for are Aboriginal. This situation has not changed significantly in government organisations over the past decade. Over the same time there have been notable changes in the community

sector. For example the training and employment of Aboriginal Health Workers (AHWs) through the KAMSC Health School and the Aboriginal Community Controlled Health Services and the training and employment of other Aboriginal people through Aboriginal community organisations.

It is a sad indictment of policy and practice over many years that few Kimberley Aboriginal people have been trained to fill the large need for teachers, nurses, police, doctors and other professionals to service the Kimberley. The small but significant number of dedicated Aboriginal people who have overcome the obstacles and achieved professional qualifications have almost always had to leave the Kimberley to finish their secondary education, let alone to undertake any of the post secondary education that is required. Despite the lack of incentives and support a number of Kimberley Aboriginal people have trained in fields as diverse as engineering, law, teaching and nursing. A few Aboriginal professional such as teachers and nurses have returned to work in the Kimberley, but many, many more are required.

Education is a long term process and major changes are urgently needed if the above state of affairs is not to continue beyond the year 2020. This development of education and training opportunities needs to be carried out in unison with the development of employment and economic opportunities.

School performance

Aboriginal primary students have, on average, substantially lower levels of achievement in literacy and numeracy than non-Aboriginal students. Only about one in five Aboriginal students achieve at levels above the average for students as a whole. Overall, about 45 per cent of Aboriginal primary school students have below average levels of achievement in literacy and numeracy, compared to about 16 per cent of non-Aboriginal students. Recent State wide literacy and numeracy testing of children in grades 3 and 7 have shown that 4 out of 5 Aboriginal children in the Kimberley region failed the tests compared to 1 in 5 for non-Aboriginal students across the State (Education Department of Western Australia, 1998).

If most students in primary schools are this far behind there is little chance of them catching up in later years and this is reflected in post compulsory school enrolments, as shown in Table 1. This Table demonstrates to some extent the difference between Aboriginal and non-Aboriginal students. However the reality is even worse, since a far greater proportion of non-Aboriginal children than Aboriginal children move to Perth to complete their secondary education, meaning that the non-Aboriginal figures are a significant understatement of the reality. Some Aboriginal students also attend high school in Perth, however the numbers are much smaller and anecdotal evidence suggests that the number of Kimberley high school students attending school outside the region is not increasing rapidly.

While there has been some increase in year 10 enrolments of Aboriginal students there has been only a small change in year 12 enrolments and this is probably only consistent with an increasing population, not any real improvement in the rate of improvement. When it comes to outcomes as against enrolment things are worse. A measure of the difficulty of achieving in the current Kimberley educational environment is that, over the three years (1996, 97 and 98), only four Aboriginal students completed year 12 and obtained sufficient marks to obtain a direct offer of a place in any University in WA (information supplied to UWA by TISC). An average of just over one student per year.

Table 1 Secondary school enrolments in the Kimberley by year and Aboriginality

	School enrolments in the Kimberley					
	Aboriginal			non-Aboriginal		
Year	**8**	**10**	**12**	**8**	**10**	**12**
1990	274	166	16	100	43	19
1991	275	197	29	90	87	21
1992	293	206	22	96	92	20
1993	270	220	26	125	97	32
1994	250	183	35	122	88	37
1995	323	197	31	105	103	45
1996	323	197	31	105	103	45
1997	287	203	37	136	82	35
1998	301	215	36	126	119	35

Source: Education Department of WA 1998

Even for students who complete secondary education against the odds, either in the Kimberley or in Perth, there are increasing obstacles to further education. Recent restrictions on access to Abstudy and increases in HECS fees appear to be having an effect on reducing the number of people who are prepared to take the risk and plunge into full time tertiary education.

More directly vocational training has also had its share of cut backs over recent years. Initiatives such as the Kimberley Group Training Incorporated (KGT), an initiative of the Wunan Regional Council, have been affected by recent changes in Commonwealth funding of training such as to the Training for Aboriginal Program (TAP) program. This appears to have reduced incentives for employers to take on trainees and has encouraged a focus more on younger trainees with lower wage levels. This could substantially disadvantage older trainees, who are often eager to learn new skills and gain full-time employment, and have never had these opportunities before.

Employment and Income

Worthwhile employment and a reasonable income would do more to improve Aboriginal health than most other initiatives. Unfortunately despite some efforts in this area progress has been slow.

The Royal Commission into Aboriginal Deaths in Custody identified the following factors as contributing to the high rates of unemployment and under-employment of Aboriginal people:

- racial prejudice by employers
- lack of employment opportunities in remote areas

- low levels of education and marketable skills
- limited proficiency in English
- poor health and social status
- socioeconomic beliefs and practices which limit the nature and area of work

(Dodson, 1991)

The largest employment initiative in the Kimberley has been the Community Development Employment Program (CDEP). This program began in the mid 1980s when Aboriginal people agreed to become the first group who had to work for the dole. This has been consistently supported by many Aboriginal people as better than the alternative of 'sit down money' and has been productive in many settings, where options for more usual employment are very limited. CDEP is available to Aboriginal and Torres Strait Islander communities or distinct groups of Aboriginal and Torres Strait Islander people within a community. This Scheme enables unemployed Aboriginal and Torres Strait Islander people to undertake work on activities chosen by the community or organisation. The Scheme is intended to facilitate community development and to be community and participant led.

Communities decide on their own projects ranging from housing and road maintenance to artefact production and horticultural enterprises. CDEP participants forgo their entitlement to unemployment benefits to participate in the Scheme, which is administered through ATSIC and is its single largest program, employing over 30,000 participants in some 268 communities across Australia. CDEP is intended to offer opportunities for Aboriginal communities to be self-sufficient, can provide support to Aboriginal organisations to set up small business projects to become independent, and is intended to enable skills development and management in a variety of areas. There has been a significant increase in recorded Aboriginal employment over recent years and this has largely been due to CDEP.

The CDEP scheme has had significant benefits, however it is not, and was never intended to be, a substitute for overall economic development and real employment. Not surprisingly the improvement in the size of the labour market has not been matched by improvements in income equity, significant economic empowerment, labour mobility, or more diversified and improved employment outcomes in the private sector. The maximum which any participant on CDEP can receive is marginally more than the Job Search allowance and unfortunately not all CDEP employment has resulted in a great deal of community development. Although there have been significant improvement in projects since the scheme began, there is still a perception by some people that CDEP sometimes consists of what was referred to by participants in a previous review as 'silly bugger jobs' (Gray & Atkinson, 1990). Large numbers of Aboriginal people have expressed a clear preference for real employment, with the levels of income that go with more usual jobs, unfortunately such employment is generally not available.

Employment, or the lack of employment, is a major factor contributing to the economic circumstances of Aboriginal people. In 1996 across Australia, the median income of the Aboriginal and Torres Strait Islander population was lower than that of the total population in all age groups. The largest gap occurred in the 25 to 44 year age group ($250 compared with $444). In this age group, 56 per cent of Indigenous persons had incomes less than $300 per week, compared with 33 per cent of the total population. The median income of the Aboriginal Western Australian population continued to be less than 60 per cent of the median non-Aboriginal income in the 1996 census, only very marginally better than in the 1991 census (Australian Bureau of Statistics, 1997).

Unfortunately in the Kimberley, in all districts (except Kununurra where the census appears to be very inaccurate), the median income in 1996 was between $150 and $180 per week for all ages and both genders (Australian Bureau of Statistics, 1997). This is substantially lower than the median figure for Australia as a whole. Clearly employment is a central issue in Kimberley Aboriginal health.

Arrests and Offences

Some important indicators of the broader health of communities are contained in statistics on arrests and offences.

The Crime Research Centre at the University of WA provided figures for arrests for the calendar years 1995 to 1997 and the Police Department provided figures on charges for a range of criminal offences from the 1991/92 financial year to the 1997/98 financial year. Both these sets of figures document increasing interaction between police and Aboriginal people with increasing arrests reported, and more charges preferred, in more recent years.

Between 1991/92 and 1997/98 there was an overall increase from 472 to 719 Aboriginal people in the Kimberley charged with criminal offences. This is an increase of over 50 per cent. However there is a considerable amount of fluctuation from year to year and the figures for 1991/92 appear to be relatively low and the figures for 1997/98 relatively high. To account for this year to year fluctuation three year averages were therefore compared.

Using three year averages there has still been an overall increase of 12.7 per cent between June 1992 and June 1996 (mid points of the respective three year periods). This is a little over 3 per cent per year (compounding) which is faster than the estimated population growth rate. Within this overall increase there are some important differences. The number of males charged has increased by an average of a little over one and a half per cent per year, which is probably similar to the population growth rate in males under 25, the group at greatest risk of being charged. The numbers of female Aboriginal people being charged, while still less than a third of the male numbers is increasing much more rapidly. Based on the same three year averages the number of females charged has increased by 46 per cent and accounts for almost a quarter of Aboriginal people charged between 1995/96 and 1997/98. This is compared with less than a fifth between 1991/92 and 1993/94. This increase in the number of Aboriginal women being charged is an indicator of increasing problems in Kimberley communities and is a very worrying trend.

Of the people charged with offences in 1997/98, 17 were under 10 and 83 were under 15, Almost a third were juveniles (under 18) and 79 per cent were under 25 years of age.

In contrast to the moderate increase in charges, the number of arrests has increased substantially, by about a third between 1995 and 1997, increasing from 2 983 arrests in 1995 to 4 011 arrests in 1997. This is a very large number for a total population of 15,500 and an adult population of about 9 000. There was a 33 per cent increase in adult arrests and a 53 per cent increase in the arrests of juveniles over this period. Arrests of juveniles now account for 8.9 per cent of all arrests.

Regional variations in arrest rates are very apparent and changes between 1995 and 1997 are quite marked. While some of these changes need to be treated with caution, as a certain amount of fluctuation is to be expected in figures such as these, some of the changes are quite large and a serious cause for concern.

In 1995 juvenile arrest rates were similar in all six Kimberley districts, with figures between 30 and 36 per 1000 people under 18 (based on people 0 to 17 years being about 45.3 per cent of the population and using the estimates for total population in Appendix 1). This has changed markedly and juvenile arrests in Kununurra and Broome have both more than doubled from 1995 to 1997. Derby juvenile arrests also increased by over 50 per cent. The other towns have shown only a small increase (Wyndham) or a decrease (Fitzroy Crossing and Halls Creek) in juvenile arrests.

Adult arrest rates have for a long time been quite different in different areas. In 1995 Wyndham, Broome and Derby had the lowest arrest rates, Kununurra and Halls Creek somewhat higher rates, and Fitzroy Crossing the highest rates, about three times the arrest rate of Wyndham and close to twice the arrest rate of Halls Creek and Kununurra. By 1997 Kununurra had an arrest rate similar to the arrest rate in Fitzroy Crossing at around 800 per 1 000 adults per year and Wyndham was approaching Halls Creek in the middle category. Broome and Derby continued to have lower arrest rates of about 260 per 1000 adults per year, although these are still extremely high by the standards of other populations within Australia.

Some of the overall differences in arrest rates may be explainable by the proportion of people living a long distance away from towns, where alcohol is less available and arrest is less likely but other factors are also obviously important. Clearly the Fitzroy Crossing area has serious problems and the large increases in the North-East Kimberley need serious consideration.

Unfortunately the Justice Ministry did not respond to a request for information on the number of prisoners. However it is clear, given that the rates of arrests and charges have been going up, that the number of Kimberley Aboriginal prisoners is also increasing.

Crime and related statistics are an important health indicator. High levels of offending suggest significant social health problems and high levels of incarceration in turn contribute further to individual and community ill health. This affects physical health in a range of ways and more importantly the emotional, social and mental well being of whole communities. This is further evidence of an urgent need for changes in direction that lead to community development and hence reduced offending.

Chapter 3 – Current Population and Health Status in the Kimberley

The planning of services needs to take into account the population being served, the health status of that population and the location of the population relative to other services (issues of remoteness and access which are addressed throughout this document). One of the important preliminary considerations in planning for the Kimberley is therefore to have realistic and consistent population figures for the areas being served. Unfortunately this is a much more difficult task than might be expected.

Population

Obtaining a realistic estimate of Aboriginal population, both for the Kimberley as a whole and for smaller areas within the Kimberley, is a problem. Certainly Australian Bureau of Statistics (ABS) figures were gross under estimates in some areas, notably in the East Kimberley. For the purposes of this review an estimate of population has been compiled based on a combination of Australian Bureau of Statistics figures, Health Department of WA figures for births and hospital morbidity, figures from schools compiled by the Education Department of WA, figures from Centrelink on family payments and figures from the Aboriginal Medical Services in the Kimberley. Further details of how these estimates were arrived at are contained in Appendix 1.

School figures suggest a population of a little under 15,000 in 1996 (based on 6-10 year olds being about 14 per cent of the population) while Midwives figures extrapolated from births over the last ten years suggest about 13,500 in 1996. The latter figure is potentially underestimated due to miss recording of permanent home address for people born out of the Kimberley (both in Perth and the NT) and possible migration since birth (this is discussed in more detail in Appendix 1).

As discussed in Appendix 1, a reasonable estimate of the Kimberley Aboriginal population for the 30th of June 1996 was taken to be about 14,600. Allowing for natural increase of 2 per cent per year, the Aboriginal population of the Kimberley should be about 15,500 in mid 1999.

Estimating the distribution of the Aboriginal population within the Kimberley was also difficult as estimates from different sources varied substantially, especially for small to medium sized communities, however at the level of postcode reasonably estimates could be made. Based on all sources of information it is clear that the largest proportion of Aboriginal people live in the Broome postcode area, that the postcode with the next largest Aboriginal population is Derby with Halls Creek (including the Balgo area) having a reasonably similar Aboriginal population to the Derby area. The remaining Kimberley postcode areas of Fitzroy Crossing, Kununurra and Wyndham have smaller, and reasonably similar, populations.

Based on an estimated total population of 15,500, and relative populations between areas from the above sources, indicative estimates of population by postcode have been made (see Table 2).

Table 2 Estimated population in 1999 by postcode

Postcode	Area covered by Postcode	Approximate population 1999
6725 &6726	Broome, Bidyadanga, Dampier Peninsula including One Arm Point, Djarindjin etc.	4 500
6728	Derby, Looma, Gibb River* Rd etc.	2 850
6765	Fitzroy Crossing, Noonkanbah, Yukanara, Wangkatjunka etc.	1 950
6770	Halls Creek, Balgo area, Yiyili, Ringers Soak etc.	2 700
6740	Wyndham, Kalumburu, Oombulgurri, Warmun	1 700
6743	Kununurra, Doon Doon, Glen Hill etc.	1 800
Total		**15,500**

*Ngallagunda is in Postcode 6740 while other communities in the area are in 6728. Because individual estimates of smaller communities are difficult all the Gibb River Rd communities are included under 6728 here.

While the information obtained for this report was often provided by postcode, current and future service provision will follow more realistic geographical divisions. Therefore, for the purposes of this report, populations have also been divided into notional district based service areas in Table 3. Clearly communities need to have input into how and where their services are located. Where services are actually provided from needs to be negotiated with the communities concerned.

In Table 3 Warmun is included with Kununurra as it is unlikely to be serviced from Wyndham (although in the future a significant proportion of the population may choose to use Halls Creek, especially if services in Halls Creek are upgraded). Also the communities on the tip of the Dampier Peninsula (One Arm Point, Lombadina, Djarindjin and others) are included with Derby as their health service support at present, and for the immediate future, is provided from the Regional Hospital. However, some or all of these communities may choose to receive more of their health services from Broome in the future. Balgo, Bililuna and Mulan have been included in the Halls Creek area because that is the logical geographical area to service it, although it is recognised that most medical services are currently provided from elsewhere (mainly Derby, but in the future possibly also from Fitzroy Crossing or Kununurra depending on where additional doctors are employed).

Table 3 Population by possible health service area

District	Approximate population 1999
Broome, Bidyadanga, Beagle Bay	3 800
Derby, Looma, Gibb River* Rd, One Arm Point, Djarindjin, Lombadina etc.	3 550
Fitzroy Crossing, Noonkanbah, Yukanara, Wangkatjunka etc.	1 950
Halls Creek, Balgo area, Yiyili, Ringers Soak etc.	2 700
Wyndham, Kalumburu, Oombulgurri,	1 250
Kununurra, Warmun, Doon Doon, Glen Hill etc.	2 250
Total	**15,500**

Given the importance of reasonably accurate population figures to future service planning in all areas, and the long history of errors and disagreements on this topic, getting accurate population counts is a major priority.

The Kimberley Public Health Unit aims to provide 'high quality health information'(Kimberley Public Health Unit, 1998) and population based health information can not be high quality if accurate population figures are not available. It is therefore important that a central Kimberley body (ideally the Kimberley Public Health Unit in partnership with KAMSC and other community organisations) regularly produce population figures and work with ABS to ensure future counts of Aboriginal people across the Kimberley are more accurate.

Age and gender distribution of population

The Aboriginal population is a relatively young population and growing fairly rapidly, with births substantially outnumbering deaths, although there is some evidence of stabilising birth rates over recent years. Despite possible changes in birth rate it is certain that the population will continue to grow rapidly into at least the medium term. There are reasonably similar total numbers of males and females across the Kimberley as a whole.

According to ABS figures 27 per cent of the Aboriginal population of the Kimberley was under 10, 39.4 per cent was under 15 years and close to half the population was under 20 years of age (48.8 per cent) in 1996. Only 11.2 per cent were over 50 years of age and only about 4.5 per cent were over 65 years of age in 1996.

Within the ABS data there is a tendency for the populations in more remote communities to have a larger proportion of older people and the towns to have a relatively smaller proportion of older people. The Ferret database records a slightly smaller but reasonably similar proportion of people over 50 compared with the ABS but shows a considerable difference between towns and communities some distance out of towns. In the Broome, Kununurra and Halls Creek town areas the proportion of people over 50 years on AMS records is between about 7 and 10 per cent. In areas outside these towns serviced by the AMSs the proportion of older people ranges from 12 up to close to 20 per cent. The biggest differences appear to be in some of the smaller communities. The potential for greater numbers of older people to be in smaller and possibly remote communities has important implications for health services in general and aged care in particular.

There are also differences in gender distribution across the Kimberley, although these are not as pronounced as the differences in age distribution. In summary, according to ABS, just over 52 per cent of Aboriginal people in the six towns are female whereas in the rest of the Kimberley only about 48 per cent of Aboriginal people are female (with the reverse pattern applying to males). This pattern is not as apparent from the Ferret database, however the Ferret system only covers part of the Kimberley. Because the differences are relatively small this information probably does not have major planning implications, although given that men tend to utilise health services less than women, having more males living further from towns makes it even more difficult to ensure appropriate services are provided for this group.

Health Status

As is the case for Aboriginal people throughout Australia, Aboriginal people in the Kimberley have substantially worse health than non-Aboriginal people. Aboriginal health in the Kimberley is poor across the region and the most important feature is that both town communities and remote communities share an unacceptable burden of disease. The nine key health issues identified by the NorHealth 2020 clinical forums are clearly problems across the region and there are many more similarities than differences when comparing health between the six districts in the Kimberley.

Aboriginal health – a summary of general issues

The causes of Aboriginal health problems are complex and closely bound together with the history of dispossession, discrimination, paternalism and poverty. It is generally not possible or even desirable to try to separate causes as most factors are interrelated and many issues compound each other. However, in trying to address Aboriginal health problems and the potential for prevention it may be worthwhile to consider these health problems in three different but overlapping general areas, as discussed below.

Firstly there are diseases associated with aspects of so called ‘western lifestyle’. These include cardiovascular disease (heart attacks and strokes), diabetes (which contributes to heart disease, strokes, kidney disease and infections) and many of the cancers (most importantly lung cancer related to smoking, but also women’s cancers and other malignant disease). Also included in this category are chronic lung diseases, which are often related to smoking. At an individual level these so called ‘lifestyle diseases’ can best be prevented by changes in diet (principally reducing fat and refined carbohydrate intake and increasing intake of fresh vegetables and fruit) increased levels of physical activity and stopping smoking (generally quoted to be about twice as common amongst Aboriginal people). In practice changes in this area are very dependent on many community issues and the availability of infrastructure that makes it possible for individuals to change their lifestyle. Important examples of these issues include economic factors and access to appropriate foods at realistic prices (as discussed above) and support for realistic recreational options.

Secondly there are health conditions related to dispossession and the social environment of recent decades (this is discussed in more detail below). Cultural dislocation, discrimination and institutionalisation are important causes of problems in this area. Problems resulting from these issues include suicide and self harm, the very high rates of binge drinking and the associated violence and accidents, and physical health problems including infections and other conditions related to living in these circumstances. Most injuries (accidents, violence, self harm) result directly or indirectly from these issues. This category is the second largest cause of death amongst Aboriginal people and the largest cause of death amongst younger adults and adolescents.

Thirdly there are diseases related more directly to the poor physical environment many people live in. This is mainly related to infectious diseases resulting from overcrowding, problems with waste disposal and lack of access to plentiful clean water. These infections also contribute to some chronic conditions, notably rheumatic heart disease and some of the epidemic of renal disease, both of which are important, serious and expensive conditions. Many of the environmental problems have improved over recent years but appalling conditions are still very common and an important ongoing cause of health problems in the Kimberley. These problems often affect the very young and the old to a disproportionate extent.

Clearly the division between these three areas is artificial as many health problems tend to be a result of a combination of factors, and prevention needs to address a range of issues together. Poverty and problems associated with living in a poor physical environment are very closely connected to problems of dispossession and difficult social environments and both contribute to excessive use of alcohol and other mind altering substances. Renal disease, and the need for dialysis, is often related to diabetes and hypertension, especially if these conditions are poorly controlled over a number of years. While diabetes and hypertension are classic 'western lifestyle' type diseases, some of these people may well also have had glomerulonephritis as a result of infections in childhood and this may have contributed to their renal failure. In addition all of the social disruption associated with poverty and alcohol excess may have directly or indirectly contributed to problems with controlling diabetes, even if the person concerned is a non-drinker.

To improve Aboriginal health in the Kimberley all three of the above areas need to be addressed together. Action in one area (for example individual counselling to change diet and smoking behaviour) will generally have very limited effect on overall health status without improving circumstances in the community where the person lives. This can not be accomplished by a health care provider alone, no matter how well trained and resourced. Agencies acting alone, be they health services or the providers of other services, may be able to make a small amount of short term progress in a particular area. Unfortunately most of these improvements are likely to be short lived if they are not linked to improvements in a range of other areas. Partnerships between a range of agencies are therefore required if sustainable improvements in Aboriginal health are to occur.

Kimberley Region Aboriginal health statistics

The Health Department of Western Australia, through the Office of Aboriginal Health and the Health Information Centre, provided specific Kimberley related Aboriginal health statistics (Epidemiology and Analytical Services, 1998a; Epidemiology and Analytical Services, 1998b). The figures in this section compare Aboriginal health statistics between the Kimberley and elsewhere in the State. It is important to remember when considering these comparisons that the basis for comparison is Aboriginal people in WA generally and it is not a comparison with the non-Aboriginal population. When compared with the non-Aboriginal population for almost every indicator the Aboriginal health figures are at least twice as bad as the figure for non-Aboriginal people, and often much worse than that. The only major category of illness that is substantially less common amongst Aboriginal people is skin cancer and related conditions.

The main statistically significant differences between Aboriginal health in the East and West Kimberley (using 1992-96 statistics) and Aboriginal health in the State as a whole are that the crude death rate is higher and there are more hospital admissions related to assaults. In the East Kimberley the rate of admissions for males for diabetes and motor vehicle accidents were significantly higher and in the West Kimberley the rate of admissions for males for pneumonia/influenza was significantly higher (although admissions for acute respiratory infections were significantly lower). Admissions for females for pregnancy related reasons

were higher in both the East and West Kimberley and admissions for genitourinary conditions were higher in the West Kimberley.

The reason for the higher crude death rate in the Kimberley compared with Aboriginal people elsewhere is at least partly due to the fact that in the rest of the State the Aboriginal population structure is even younger and hence there are less older people dying. Otherwise mortality figures in the Kimberley were reasonably similar to those for Aboriginal populations elsewhere in the State.

The differences in morbidity related to pregnancy reflect higher levels of fertility, as well as more complications. This highlights the need for good community antenatal care and maternity services. The increased hospital morbidity from assaults presumably reflects higher levels of interpersonal violence resulting in significant injury. This has implications for the planning of other health related services including alcohol related services (see below for more details on alcohol related health problems, refuges and sobering up shelters and other programs to reduce violence).

Motor vehicle accident related admissions are higher across the Kimberley, although this is only statistically significant amongst males in the East Kimberley in the period under consideration. This also has important public health implications including the consideration of legislative changes, the need for improved education across a range of road safety related issues and the need for the funding and provision of suitable vehicles and roads.

Many health problems rarely cause death or admission to hospital and hence do not appear in morbidity or mortality statistics unless data is collected separately. Key health concerns that do not appear in the above statistics include important causes of community morbidity such as middle ear disease and sexually transmitted diseases such as syphilis, gonorrhoea and chlamydia. These conditions are much more common in the north of the State than the south and this has implications for planning. Other diseases such as trachoma are also useful indicators. While health care for trachoma will continue to be an expense, trachoma has relatively less serious implications in terms of planning health services since new cases of significant visual impairment from this condition are becoming rare (personal communication Dr P Graham). However, trachoma remains a useful indicator of poor environmental conditions (Thompson & Paterson, 1998). This has important implications for community infrastructure requirements, especially water supplies and housing.

An important point to note when considering Kimberley Aboriginal health statistics is that health statistics are generally only reliable when looking at large populations. Many of the figures produced may be unreliable when trying to make comparisons between populations of a few hundred people or less, hence most comparisons within the Kimberley should be treated with caution.

The major differences between communities are probably between remote communities and town communities within each district. Certainly the available evidence suggests that child health tends to be relatively worse in remote communities compared with the towns, although differences in childhood nutritional status may have declined recently and there are problems with child health in all areas (Rousham & Gracey, 1998b). Also, diseases associated with a poor physical environment (overcrowding, poor waste disposal, limited access to good clean water) such as infections, are generally considered to be worse in remote communities, although there has been limited research published on this outside of the child health area. In contrast, in part for fairly obvious reasons related to access, many of the health problems associated with alcohol are worse in communities close to town. Again this does not mean there is not a problem in some remote communities, however the pattern of alcohol and other drug related problems tends to be different and the possible range of community responses to these issues is different. Adult chronic diseases such as diabetes, coronary artery disease, hypertension and renal disease are common in all Aboriginal communities, both remote and urban.

Significant differences between districts are less obvious, although the available evidence suggests that overall health status, especially for children, may be worse in the Fitzroy Crossing and Halls Creek area and may be marginally better in Broome and Derby (Atkinson, 1993). These are averages and the reality is that in all areas there are many Aboriginal people with very poor health status and a relatively small number of people who could objectively be described as being in good health, physically, emotionally, culturally and spiritually.

One of a few areas where important differences appear to exist is in the incidence of suicide. This is a rapidly increasing problem across the region recognised for over a decade (Hunter, 1988) and currently appears to be epidemic in the Broome region. Clearly services are needed where the problem is currently greatest, but for this problem, like most others, services are needed across the Kimberley. It would be dangerous to assume that areas that apparently have lower levels of suicide are not in need of realistic services to address this very serious problem amongst Aboriginal youth (Swan & Raphael, 1995).

One way of looking at illness broadly across the Kimberley is to look at hospital admissions, as shown in Table 4 below. This Table gives a good indication of the extent of the differences in health status between Aboriginal and non-Aboriginal Kimberley residents. Across the Kimberley Aboriginal people are three to four times more likely to be admitted to hospital as non-Aboriginal people. Unfortunately, for a range of reasons, the figures for individual hospitals can not be used to compare health status between districts because a range of factors other than health status influence hospital admission rates.

The problems with relying on hospital discharge figures can also be seen in Table 4 below. Aboriginal people resident in the Fitzroy Crossing District have the highest rate of admission in the Kimberley (about 5 per person over 5 years, or an average of about one admission per person per year). In contrast Aboriginal residents in the Halls Creek District have one of the lowest admission rates, about half that of Fitzroy Crossing. The most likely reason for this difference is not that Halls Creek and Balgo people are healthier but that they have less ready access to services, both because Halls Creek hospital is significantly under resourced and because Balgo and surrounding communities are very isolated. In addition people in the Fitzroy Crossing area who need the services of the regional hospital are generally admitted to Fitzroy Crossing first and then transferred, which is then counted as two admissions. Many more people from the Halls Creek District are transferred direct to Derby without passing through the District Hospital and hence will only be counted as one admission.

A further factor that can affect hospital figures is variations in admission policies between hospitals and between doctors, and these can vary from time to time and place to place. This also probably contributes to some extent to the very variable admission rates between postcodes.

Non-Aboriginal admission rates are included in Table 4 below for comparison. Apart from being much lower than Aboriginal admission rates the pattern of variation between districts is also quite different and the extent of variation is smaller. Variations in the non-Aboriginal rates were not considered in detail. However, possible reasons for the variation in the non-Aboriginal admission rates include some of the reasons suggested above for variation in the Aboriginal rates plus possible variations in the structure of the non-Aboriginal population between districts.

The areas with the greatest ratio between Aboriginal and non-Aboriginal admission rates are Kununurra, Fitzroy Crossing and Halls Creek. These may well be the areas with worse Aboriginal health, but there may be other explanations for these statistics that do not relate directly to health status.

Table 4 Hospital admissions by postcode of residence

Postcode of residence (District)	Aboriginal admissions July 93-June 98 N (%)	per person*	Non-Aboriginal admissions July 93-June 98 N (%)	per person†	Aboriginal / Non-Aboriginal admission rate ratio	Total admissions July 93-June 98 N (%)
6725 (Broome)	9655 (22)	2.36	8197(46)	0.91	2.6	17852 (29)
6728 (Derby)	7218 (16)	2.84	2992(17)	1.37	2.1	10210 (17)
6740 (Wyndham)	5272 (12)	3.41	1010(5.6)	1.57	2.2	6282 (10)
6743 (Kununurra)	5942 (14)	3.63	3864(22)	0.82	4.4	9806 (16)
6765 (Fitzroy Crossing)	8954 (20)	5.05	1031(5.8)	1.32	3.8	9985 (16)
6770 (Halls Creek)	6849 (16)	2.84	778(4.4)	0.93	3.1	7627 (12)
Total	**43890 (100)**	**3.14**	**17872 (100)**	**0.98**	**3.2**	**61762 (100)**

Raw data on admissions provided by the Health Department of WA, rates given are admissions per person over the five year period.
*Using Aboriginal population estimate of 14,000 for 1996 and distribution of population in the same proportions as in Table 3 above.
†Using Non-Indigenous counts from 1996 census.

Table 5 below looks at admissions by hospital and includes admissions to tertiary referral hospitals within the State (Darwin hospital admissions not included). This Table highlights the extent of admissions outside the local hospital for people from Halls Creek, as alluded to above, but otherwise the pattern for hospitals within the Kimberley is much as would be expected based on the breakdown by postcode of residence. The admission rate ratios generally exceed the Aboriginal / non-Aboriginal population ratios for the postcode the hospital is based in, as should be expected, given the poor state of Aboriginal health.

The most interesting figures in this Table are those for hospitals outside the Kimberley. If teaching hospital and other hospital admissions are combined this shows that there are a similar number of out of Kimberley admissions for Aboriginal and non-Aboriginal people. This may in part reflect the family connections of non-Aboriginal people and their desire to access hospitals closer to their families for elective or semi-elective admissions. It also presumably reflects a greater level of private health insurance and hence ability to access private hospitals amongst Aboriginal people.

Looking specifically at Teaching hospitals it can be seen that just under 9 per cent of Aboriginal admissions are to teaching hospitals and just under 13 per cent of non-Aboriginal admissions are to teaching hospitals. This pattern of a relatively greater proportion of non-Aboriginal patients being referred to teaching hospitals is most likely to reflect the differing patterns of Aboriginal and non-Aboriginal admissions. This also may reflect a greater reluctance for Aboriginal patients to leave the region for medical treatment and there is the possibility of a higher threshold for referral of Aboriginal patients than for non-Aboriginal patients in some instances. Whatever the reasons for the observed pattern the possibility of under utilisation of tertiary referral services by Aboriginal patients needs to be considered during the planning process. Certainly there is no evidence for excessive reliance on tertiary referral hospitals by the Kimberley health care services.

Table 5 Hospital admissions of Kimberley residents in WA (all hospitals)

Hospital / Hospital category	Aboriginal admissions July 93-June 98 N (%)	Non-Aboriginal admissions July 93-June 98 N (%)	Aboriginal/ Non-Aboriginal admission ratio*	Total admissions July 93-June 98 N
Broome	7169 (57.8)	5228 (41.2)	1.4	12397
Derby	12618 (77.5)	3660 (22.5)	3.4	16278
Fitzroy Crossing	6228 (91.1)	607 (8.9)	10.3	6835
Halls Creek	3340 (90.0)	371 (10.0)	9.0	3711
Kununurra	6880 (67.4)	3323 (32.6)	2.1	10203
Wyndham	3356 (85.5)	568 (14.5)	5.9	3924
Teaching Hospitals	3880 (62.9)	2288 (36.9)	1.7	6168
Other †	419 (18.7)	1827 (81.3)	0.2	2246
Total	**43890 (71.1)**	**17872 (28.9)**	**2.5**	**61762**

* As populations are difficult to calculate for this comparison the ratios in this Table are unadjusted for population and hence need to be used with this in mind. The overall population ratio for the Kimberley in 1996 was just under 1.6.

† Aboriginal people in this category attended a mixture of other public and private hospitals, non-Aboriginal people in this category almost all attended private hospitals

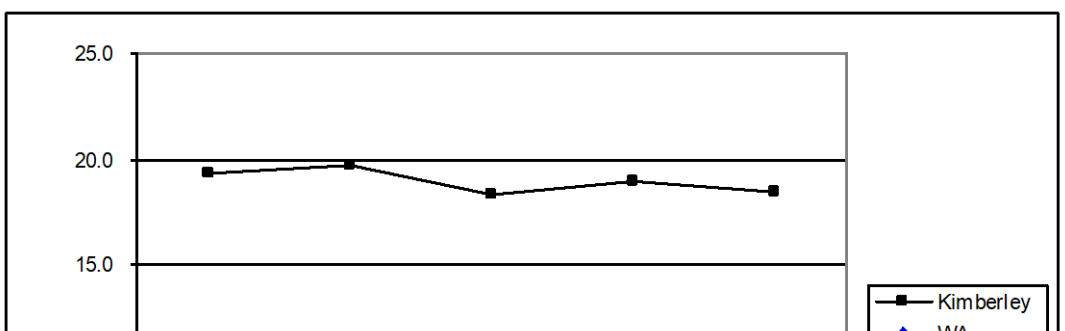
Substance use

One area of health and related issues of considerable debate concerns the use of alcohol and other substances, including tobacco and illicit drugs. These issues are therefore covered in a little more detail in this section.

The extent of alcohol and other drug misuse among Aboriginal people in the Kimberley region is poorly documented and difficult to quantify, and data that are available are considerably out of date. Nevertheless, that data and data from elsewhere in the State (when considered with caution) provide a broad indication of some aspects of the problem.

In Western Australia as a whole, between the financial years 1992–93 and 1996–97, estimated average per capita consumption of pure alcohol by person aged 15 years and over was 10.74 litres. In the Kimberley Region this was 18.96 litres—almost 1.8 times the level for the State as a whole (see Appendix 3 for the derivation of these estimates). Given the well-documented relationship between level of consumption and related harm, this level of consumption in the Kimberley is a cause for concern. However, as Aboriginal people make up about 30 per cent of people in this age category, excessive alcohol consumption is not just an Aboriginal problem.

Figure 1 Estimated per capita consumption of pure alcohol by persons aged 15 years and over, 1992–93 to 1996–97, Kimberley Region and Western Australia



The most comprehensive study of alcohol consumption among Aboriginal people in the Kimberley was undertaken by Hunter in 1993 (Hunter, 1993). In a stratified random sample of 516 adult Aboriginal people, he and his colleagues found that there were more life-time abstainers and ex-drinkers (54 per cent of women and 24 per cent of men) than amongst non-Aboriginal people (25 per cent of women and 13 per cent of men). However, those Aboriginal people who did drink were much more likely to do so at 'harmful levels' (defined by the National health and Medical Research Council as six or more standard drinks per day for men and four or more per day for women) than were non-Aboriginal people. More than half of the Aboriginal men (53 per cent) and a smaller proportion of Aboriginal women (19 per cent) drank nine or more standard drinks (ie 90 g of absolute alcohol) on each drinking occasion. In the general population, considerably fewer men (4 per cent) and women (0.5 per cent) report drinking at this level (Hunter, Hall, & Spargo, 1992). There is nothing to indicate that this level of consumption among Aboriginal people has declined since Hunter undertook this work and, indeed, there is some anecdotal evidence to suggest that levels of consumption among younger women may be rising. This possibility is supported by the increasing arrest rates for women.

Excessive use of alcohol is of particular concern because of the social disruption by which it is often accompanied. However, several reports demonstrate that tobacco smoking actually makes a greater contribution to deaths and hospital admissions among Aboriginal people. As part of a study of hypertension among Aboriginal people in the Kimberley Region, Smith and his colleagues found that the overall prevalence of tobacco use (ie including some chewing of tobacco) was approximately 70 per cent among men and 50 per cent among women—with higher proportions in the younger age categories smoking rather than chewing. As they note, these levels are about twice those found among the broader Australian population (Smith et al., 1992). The percentages of smokers among Aboriginal people in the Kimberley are also higher than the percentages among Aboriginal men (54 per cent) and women (46 per cent) who reported smoking in the National Aboriginal and Torres Strait Islander Survey (Madden, 1995).

No published data on the consumption of other psycho-active substances among Aboriginal people in the Kimberley is available. However, the observations of both health workers and community members suggest that—particularly in Broome and Kununurra—there has been an increase in the use of cannabis and to a lesser extent in Broome of other illicit drugs and the injection of them.

The paucity of data on substance use among Aboriginal people in the Kimberley is a matter of concern and is an obstacle to the rational planning of health services. We recommend that a drug use monitoring system should be developed and that resources should be allocated to this development.

Substance use related deaths and hospitalisation

The most common means of assessing the impact of substance misuse on health is the review of death and hospital records. However, these do not provide a full picture of the impact of substance misuse. They do not include the many medical (including nursing or health worker) consultations that do not require hospitalisation, nor those problems for which medical treatment is not sought. Furthermore, they do not include the indirect health consequences of substance misuse such as failure due to intoxication to take medication for other conditions, which may consequently worsen.

Death and hospital records themselves have limitations and are notorious for under-reporting the role of substance misuse as a contributing factor to particular deaths or diagnoses. To overcome this particular limitation, sophisticated methods have been developed to estimate the contributions of alcohol and tobacco to deaths and hospitalisation. Within populations, deaths or hospitalisations due to alcohol or tobacco can be divided into those whose cause is wholly attributable to the effects of alcohol, such as alcoholic cirrhosis of the liver; and those to which some proportion of deaths or hospitalisations can be attributed to alcohol or tobacco, such as assaults, cardiovascular disease and respiratory diseases. The latter are estimated using 'aetiologic fractions' based on studies of the contribution of alcohol or tobacco to deaths from a particular cause in known populations (Holman, Armstrong, Arias, & al, 1990). When applied to the estimation of alcohol or tobacco related deaths or hospitalisation in Aboriginal populations the results must be treated with caution because the levels and patterns of consumption differ markedly from those in the broader populations on which the aetiologic fractions are based. Nevertheless, in the absence of aetiologic fractions developed specifically for Aboriginal populations, application of those developed for the broader population provide the best estimates available (Saggers & Gray, 1998).

Below, the findings of reports on the application of the aetiologic fractions method to death and hospital admissions data for alcohol and tobacco are summarised. No studies have been undertaken of the impact of the use of other substances on the health of Aboriginal people either in the Kimberley or Western Australia as a whole.

Alcohol

Over the period 1988 to 1992, Swensen and Unwin estimated that in the Kimberley Health Region:

> *... 25 deaths (male 21; female 4) ... were due to injuries attributable to alcohol. Twenty of these deaths involved Aborigines (male 16; female 4) and five involved non-Aborigines (all males).*
> *The most common causes of alcohol-caused fatal injuries were road injuries, which claimed 10 lives (7 Aborigines; 3 non-Aborigines). There were five deaths due to suicides (4 Aborigines; 1 non-Aborigine) and five deaths due to assaults (all Aborigines).*

In the same period:

> *... there were a total of 29 deaths (male 21; female 8) due to conditions wholly attributable to alcohol. Twenty-four deaths involved Aborigines (male 16; female 8), and five involved non-Aborigines (all males).*
> *Two conditions were responsible for most of these deaths, claiming 11 lives each: alcohol dependence (10 Aborigines; 1 non-Aborigine) and liver cirrhosis (8 Aborigines, 3 non-Aborigines)* (Swensen & Unwin, 1994 p19).

In a more recent paper, it is reported that, for the ten year period 1998 to 1997, the standardised mortality ratio for the Kimberley Region to Western Australia was over four. That is,

> *... after adjusting for age, sex and population size there were still over four times as many deaths due to alcohol related conditions than would be expected based on the State rate*

and that Aboriginal people were significantly over-represented among people dying from these causes (Epidemiology and Analytical Services, 1999 p4).

With regard to alcohol caused hospitalisations, over the period 1988 to 1992 Swensen and Unwin found:

> *... an estimated 280 non-Aborigines (male 224; female 55) and 858 Aborigines (male 434; female 424) ... were admitted to hospital due to injuries attributable to alcohol. Assaults were the most common type of alcohol-caused injury among male and female Aborigines.*
> *The Aboriginal: non-Aboriginal rate ratios for all alcohol caused injuries were between 2.8 and 4.3 over the period* (Swensen & Unwin, 1994 p5).

For conditions wholly attributable to alcohol:

> *… 228 non-Aborigines (male 185; female 43) and 560 Aborigines (male 429; female 131) ... were admitted to hospital ... Of these conditions, alcoholic psychosis was the most common cause of admission for male Aborigines, non-dependent alcohol abuse the most common for female Aborigines, and alcohol dependence the common for male and female non-Aborigines.*
> *The Aboriginal: non-Aboriginal rate ratios for all conditions wholly attributable to alcohol were between 2.0 and 5.0 over the period* (Swensen & Unwin, 1994 p12).

In a summary of hospital discharge rates for alcohol related conditions for the period 1994 to 1997, it has been reported that the age standardised discharge rate for the Kimberley was similar to that for the State as a whole. However, the Aboriginal rates are almost three times the non-Aboriginal rates (Epidemiology and Analytical Services, 1999 p.5).

Tobacco

There are no published studies of the contribution of tobacco to deaths and hospitalisations in the Kimberley Region. However, for the period 1983 to 1991, it has been estimated that tobacco smoking was responsible for 13.2 per cent of all Aboriginal deaths in Western Australia (Unwin, Thomson, & Gracey, 1994).

In Western Australia as a whole,

> *In 1989–91, the age standardised death rates for tobacco-caused deaths was 271 deaths per 100 000 person years for Aboriginal males, 2.4 times the rate of 113 per 100 000 for non-Aboriginal males. For Aboriginal females the age standardised rate was 118 deaths per 100 000 person years, 3.7 times the rate of 32 per 100 000 for non-Aboriginal females. Among Aborigines, males had an age-standardised rate for tobacco caused deaths 2.3 times that of females …* (Unwin et al., 1994 p12).

The main causes of deaths among Aboriginal people due to tobacco smoking were ischaemic heart disease, lung cancer and chronic bronchitis.

Given that rates of tobacco use among Aboriginal people in the Kimberley appear to be higher than among Aboriginal people nationally, it is likely that the contribution of tobacco smoking to deaths among Aboriginal people in the Kimberley is no less than that among Aboriginal people in Western Australia as a whole. Furthermore, despite the fact that the study reported above is now several years old, there is nothing to suggest that there has been any decrease in tobacco smoking among Aboriginal people in the Kimberley.

Summary

Aboriginal health problems have been well documented, indeed some may say over documented, in a wide range of published reports over many years. The problems are well known and the health of Aboriginal people has more in common between areas than it has differences. The knowledge to act on a range of these concerns has also been available for some time and evidence regarding new strategies is continuing to be produced and collated (Couzos & Murray 1998). Most reports agree that the main problems are in actually putting into action what is known to be of benefit, rather than in finding out what is needed (although there is also a continuing need for targeted research and for interventions to be evaluated). The other important issue is resources, what is available, how is it used and what is needed to have the necessary impact. Some of these resource issues are addressed in the following section.

Chapter 4 – A Description of Aspects of Health Services in the Kimberley

This section describes some of the important general issues related to health care services and the provision of these services in the Kimberley. This section is not intended to be comprehensive and is designed to set the scene in general for the more detailed information presented in the following chapters. A number of aspects of services in individual communities are included in Appendix 2.

An Overview of Health Care Services in the Kimberley for Aboriginal people

A wide range of health care services are available across the Kimberley provided by a number of agencies. These services provide a combination of health promotion and preventive activities, primary medical care in the community, secondary medical care through hospitals and a range of transport.

Primary Health Care services

> Primary Health Care (PHC) has been defined by the World Health Organisation and UNICEF as: 'Essential health care based on practical, scientific and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that can be maintained at every stage of development in the spirit of self-reliance and self-determination. It is the first level of contact of individuals, family and community with the health system. Primary health care is based on:
> - the economic and social realities of a community, and the country;
> - the existing knowledge of the community, its health problems and the most appropriate health services which address the main health problems in the community, providing promotive, preventive, curative and rehabilitative services.' (World Health Organisation & UNICEF, 1978)

Services that come under this definition range from community organisations that address issues such as waste disposal and other environmental needs to specific community based health organisations, to hospital outpatient services, to alcohol related services and to services designed to promote health at a community level. While it is recognised that many agencies provide PHC related services in the WHO sense described above as part of a wider brief (for example local resource agencies, the ATSIC Regional Councils and a number of other government and community organisations) this summary only includes organisations in the Kimberley which provide health care services in the community.

The two largest categories of providers of primary health care services in the Kimberley are the Aboriginal Community Controlled Health Services (ACCHSs) and services provided by the Kimberley Health Service (KHS).

The ACCHSs providing primary health care services in the Kimberley are: the Broome Regional Aboriginal Medical Service (BRAMS) serving Broome and surrounding communities; the East Kimberley Aboriginal Medical Service (EKAMS) serving Kununurra and a number of nearby communities; Yura Yungi Health Service serving Halls Creek and surrounding communities; the relatively new Derby Aboriginal Health Service (DAHS) serving Derby and surrounding communities; Nindilingurri Cultural Health Service serving Fitzroy Crossing and communities in the Fitzroy Valley; and Jurrugk Health Service serving the Gibb River Road area. The Kimberley Aboriginal Medical Services Council (KAMSC) is the regional representative body for the community sector on health with representatives from across the region. Apart from being a peak body for the ACCHSs, KAMSC also provides

support for the individual ACCHSs, including administrative, clinical, recruiting and lobbying support as well as running the Kimberley Health School, which provides comprehensive training for AHWs at two campuses. It also takes a regional approach to health issues of concern to Aboriginal people. The individual ACCHSs provide clinic based and visiting services provided by Aboriginal Health Workers (AHWs), nurses and doctors in all towns except Wyndham and in many of the communities throughout the region.

Each of the six main towns in the Kimberley has a hospital run by the KHS. These hospitals provide access to outpatient nursing and medical services, visiting medical services to Aboriginal communities and other primary health care services, including allied health services. Complementary to these hospital based services, the Community Health Services of KHS provide a range of nurse and Aboriginal health worker based services in towns and visiting and resident staff in many of the remote communities. The two doctors in Fitzroy Crossing are employed through Community Health, while other KHS doctors are employed through the local hospital in each town.

In the Kutungka region (Balgo and surrounding communities) in the south east of the Kimberley, community health type services are provided by a private not for profit organisation, the Mercy Community Health Services under contract, with medical services provided from Derby Regional Hospital. Services in this area are under review through a separate process at the time of writing.

The Royal Flying Doctor Service (RFDS) provides air access to health services for people in remote communities. Apart from the obvious role of emergency evacuations to secondary and tertiary care, the RFDS also provides transport and some staff for a wide range of primary care clinics in remote communities across the region. In addition a range of specialist clinics in the towns and some of the larger communities are also provided. These clinics are mostly carried out using chartered aircraft and are either run by the local health service in the nearest town or from Derby. Clinics from Derby generally have RFDS nursing staff, either an RFDS flight nurse or the RFDS primary health care nurse and Derby Regional Hospital medical staff, including specialist staff. Currently the RFDS in the Kimberley does not have its own medical staff, thus all medical services are provided by KHS or one of the ACCHOs. Consideration is currently being given to basing RFDS medical staff in Derby, should this eventuate changes in how these services are provided in future would occur.

Secondary and tertiary health care

Comprehensive secondary care is provided in the Kimberley by the KHS through the region's six hospitals using a combination of local generalist staff, some local specialist staff and specialist staff visiting from outside the region, mainly from Perth. The largest hospital with the most services is the Derby Regional Hospital (DRH), where the regional paediatric, obstetric and surgical services are based. Reasonably comprehensive district hospital services are provided by the regions larger district hospitals at Broome and Kununurra, while more limited hospital services are provided at Wyndham, Fitzroy Crossing and Halls Creek. Wyndham provides low risk maternity services and along with the two smallest hospitals mainly provides relatively uncomplicated medical inpatient services, referring more complex conditions to larger hospitals, principally to DRH. A significant proportion of visiting general practitioner medical services are provided by doctors employed by ACCHSs in some hospitals (primarily Broome, Kununurra and Halls Creek at present although this is likely to expand as doctor services through ACCHSs increase).

Tertiary Care for the Kimberley is provided mainly by Perth's tertiary hospitals, supported by a wide range of visiting specialist services. Some tertiary services are also provided through Northern Territory Hospitals, especially for people living in the north of the East Kimberley, although even for this area, which is much closer to Darwin than Perth, most tertiary services are still Perth based.

Other regional health care related services

Apart from the general services provided by KHS and the ACCHSs there are a range of health care services for particular problems or particular groups of people. This includes a relatively new specialist North West Mental Health Service based in Broome with some resident staff in other towns and visiting services to all towns and major communities in the Kimberley (this service also provides specialist mental health services for the Pilbara). There is also a network of aged care services in towns and communities across the Kimberley supported by Aged Care Services based in Broome and there are a range of alcohol related services including patrols, sobering up shelters in most towns and large communities and rehabilitation in several locations. Alcohol related services are generally run separately from health services (with the exception of Fitzroy Crossing where the ACCHS has a substantial involvement in these services). Aged care also has a range of organisations involved, however there are generally closer connections with health services, with ACCHSs and KHS services involved in care and the KHS providing many of the aged care beds at present. Dental Health Services are provided through a combination of Government employed dentists, who provide a regular visiting service to schools throughout the Kimberley and somewhat less accessible services to other people in parallel with these visits, and private dental services in Broome and Kununurra. Aspects of these services are discussed in more detail later in this document.

Pharmacy services are provided from private pharmacies in Broome, Derby and Kununurra, through KHS and through KAMSC for the ACCHSs.

Monitoring of certain diseases at a community level, and of some aspects of PHC delivery, is currently coordinated through the Kimberley Public Health Unit (KPHU) for KHS related services and through KAMSC for ACCHS related service delivery, with the KPHU having overall regional responsibility in certain areas.

Expenditure on Primary Health Care Services and Hospital Expenditure within the Kimberley

Accurate expenditure figures on health care services on a community by community basis are difficult to obtain and therefore figures are presented by district based on the six Towns in the Kimberley, with larger communities or groups of communities stated separately in some instances. The following four tables (Tables 6 to 9) look at health expenditure from a number of perspectives including community expenditure and hospital expenditure, inpatient and outpatient expenditure and estimates of expenditure on Aboriginal and non-Aboriginal people. These estimates are reasonably robust for the Kimberley as a whole, but have greater potential error when looking at smaller areas within the Kimberley as some services are often provided from outside the area.

Kimberley hospital expenditure is obviously very important in any consideration of health spending. A significant proportion of this expenditure is on outpatient and emergency care, as documented in the Ambulatory Care Study carried out by Arthur Andersen in 1995/96. In practice a relatively large proportion of this expenditure on people who are not inpatients (ambulatory care) is spent on non-Aboriginal people. Thus while inpatient care was mainly provided to Aboriginal people in all hospitals in the Kimberley, ambulatory care was split almost 50:50 in Derby and in Broome 79 per cent of occasions of care were for non-Aboriginal people. Even in Halls Creek, where most of the population and an overwhelming proportion of the health problems are Aboriginal, over a third of the ambulatory patients were non-Aboriginal (37.3 per cent) (Andersen, 1996). This information has been used to calculate the estimates in Tables 7 and 9 below.

Other health related expenditure that is significant but not included in these tables includes Alcohol related services, which are covered later in this report, and specialist services in a range of areas. These other services include emergency evacuation services, aged care, mental health, other visiting specialist services, dental services and the cost of services such as tertiary referral hospitals.

Table 6 Expenditure on PHC in Kimberley – excluding hospital based expenditure

District	**Approximate population 1999** District (area)	**PHC budget for 97/98 KHS ($1000s)**	**ACCHSs and Sisters of Mercy Service 97/98 ($1000s)**	**Approximate PHC spending $ per capita** **District total totals**	**Area**
Broome, Bidyadanga Beagle Bay	3800 (2850) (650) (250)	408.9	(BRAMS) 1163 (KAMSC)123.4 (KAMSC) 317.3 (KAMSC) 230.5	$590 (Broome KHS $143)	$595 $488 $922
Derby, Mowanjum, Gibb River* Rd Looma One Arm Point, Djarindjin, Lombadina etc.	3550 (2350) (500) (700)	749.3 194.1 351.5	(DAHS &Jurrugk – new services) (98/99 - Jurrugk , 344.1, DAHS 420)*	 $365 (††$580) (KHS $365)	$319 (††$644) $388 $502
Fitzroy Crossing, Noonkanbah, Yukanara, Wangkatjunka etc.	1950	858†	(NCHS) 750.4 (NCHS 98/99, 1200 approx)*	$825 (KHS $440)	$825
Halls Creek, Yiyili, Ringers Soak etc. Balgo area	2700 (1900) (800)	396.9	(Yura Yungi/KAMSC) 924.4 (Mercy) 680	$741 (HCk KHS $209)	$695 $850
Wyndham Kalumburu Oombulgurri,	1250 (600) (400) (250)	**203.2 263.1 141.5		 $486 (all KHS)	$339 $658 $566
Kununurra, Doon Doon, Glen Hill etc. Warmun	2250 (1800) (450)	554.2 207.9	(EKAMS) 1197.6	$871 (KHS $339)	$973 $462
Totals	**15500**	**4328.6‡**	**5386.6‡ (1998/99 est. 6700)**	**$627**	

* These three health services (Jurrugk, Derby Aboriginal Health Service and Ninidilgarri Cultural Health Service) are still in the establishment phase, hence budgets are not accurate estimates of recurrent health service provision at this stage.

** Budget for 98/99 is lower in Wyndham, whereas for other areas the CHS budget for 98/99 is the same or higher than in 97/98 (overall probably relatively little net change).

† Fitzroy Crossing doctors salaries are included under Community Health rather than Hospital budgets even though most of their time is spent providing services at the hospital.

†† Estimates based on 1998/99 budget

‡ Both Community Health Services and the Aboriginal health services have additional support from KHS and KAMSC respectively that is not completely covered in the budgets listed here. The extent of this support varies between areas making direct comparison of budgets difficult.

Notes:

1. Community Health Services (KHS) cater for the non-Aboriginal population as well as the Aboriginal population and especially in the larger town this may be a significant part of the workload. Doctors at Aboriginal Community Controlled Health Services also provide some services to non-Aboriginal people and while this generates Medicare income, this income does not cover the total cost of providing these services. Thus the above estimates are over estimates of the amount spent on Aboriginal people.
2. All Medicare income is included in the Aboriginal Health Services budgets listed above (Medicare income to Broome's private GPs from Aboriginal patients is not included).

Table 7 Expenditure on hospitals in the Kimberley

Hospital	**Budget 1998-99 Per annum $million**	**Budget notionally allocated by Aboriginality (based only on proportion of admissions) $million**		**Ambulatory and non-ambulatory care (estimated based on Ambulatory Care Study 1995/96) $million**			**Budget notionally allocated by Aboriginality (based on proportion of admissions and ambulatory figures) $million**		**Population potentially served based on geographical division of services †**	
Small District Hospitals		Aboriginal	Non-Aboriginal	Inpatient budget $million	Non-Inpatient* $million Ab'l	Non-Ab'l	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal
Fitzroy Crossing	2.076 (1.676**)	1.862	0.214	1.740	0.210	0.126	1.770	0.306	1950	907
Halls Creek	1.552	1.394	0.158	1.301	0.157	0.094	1.325	0.227	2700	1331
Wyndham	3.043	2.554	0.489	2.551	0.308	0.184	2.449	0.594	1250	891
Larger District Hospitals										
Broome	5.348	2.892	2.456	4.042	0.274	1.032	2.460	2.888	3800	10886
Kununurra	5.140	3.115	2.025	3.885	0.263	0.992	2.617	2.523	2250	6182
Regional Hospital										
Derby	11.307	7.994	3.313	8.861	1.223	1.223	7.487	3.820	3550	2675
Total	**28.466**	**19.811**	**8.655**	**22.380**	**2.435**	**3.651**	**18.108**	**10.358**	**15500**	**22872**

† OAP, Lombadina under Derby, Balgo area under Halls Creek, Warmun under Kununurra, Oombulgurri and Kalumburu under Wyndham

*Aboriginal/non-Aboriginal non-inpatient expenditure based on Ambulatory Care Study - Kununurra estimate same as for Broome, Fitzroy Crossing and Wyndham estimate based on Halls Creek figures.

**Fitzroy Crossing Hospital budget increased to include cost of doctors

Further notes Table 7

Advice provided by the KHS was that the cost of two doctors in Fitzroy Crossing was of the order of $400,000. This was added to the hospital figures in Table 7, and deducted from the CHS figures in Table 8 below to make CHS and hospital figures in different districts more comparable.

The division of figures between inpatient and ambulatory services was made based on actual cost calculated for Halls Creek, Derby and Broome hospitals based on the Ambulatory Care Study conducted by Arthur Andersen Consulting for the Health Department of WA in 1995/96. This study looked in detail at the cost of non-inpatient care in Derby, Broome and Halls Creek.

The costs for smaller hospitals were estimated by calculating the proportion of expense on non-inpatient care based on the Halls Creek budget (using Ambulatory Care Study figures and overall budget to June 1996 from the East Kimberley Health Service annual report for 1996/97). This proportion was then applied to current budgets for these three hospitals.

Both Fitzroy Crossing and Wyndham do not have an Aboriginal Community Controlled Health Service, whereas Halls Creek does. Thus Fitzroy Crossing and Wyndham non-inpatient costs may be underestimated. The figure for Fitzroy Crossing is probably understated, however there was no obvious method to adjust for this. Wyndham hospital still includes some services for the East Kimberley (for example maintenance, laundry) and thus the overall hospital budget is a little overstated relative to the other hospitals in this category. The figure for non-inpatient cost at Wyndham therefore may either be under or overstated.

The actual costs from 1995/96 from the Ambulatory Care Study were used without adjustment for Broome (and the same proportion applied to Kununurra) and for Derby. While costs of non-inpatient care have probably increased overall since the study was carried out hospital budgets have fluctuated for these hospitals, with cost reductions in some areas, including staff. Broome and Kununurra have other PHC services in town and the actual expenditure on non-inpatient care while probably increasing may not have increased to a large extent. Derby hospital expenditure on PHC may have increased, however as it appears the overall budget has decreased between the 1996/97 annual report and the figures supplied to me by KHS for the current year, the actual cost calculated two years previously was used without adjustment.

The KHS in Derby, Wyndham and Fitzroy Crossing regularly supplies doctors for RFDS clinics and/or evacuations. The cost of clinics held outside hospitals is not included in the above estimates attributed to non-inpatient care. Hospitals (except Broome and Kununurra) also provide ambulance services and the cost of these has also not been included in non-inpatient care, however emergency type services were also considered separately in the report by Deeble *et al*, so it is appropriate to leave them out of this comparison. Derby hospital expenditure on non-inpatient care is therefore underestimated by the cost of perhaps two doctors and inpatient cost is overestimated by a similar amount, although much of this expenditure is outside the Derby area. For Fitzroy Crossing perhaps an additional 40 per cent of a doctor's salary should be allocated for out of hospital clinics and perhaps a similar amount for Wyndham. Other hospital doctors do out of hospital clinics but less frequently than these places. Doctors from Halls Creek have at times provided a similar level of community service to Fitzroy Crossing, although with the advent of Yura Yungi this has tended to be a lesser, but nevertheless significant, load.

Table 8 Community and Hospital based PHC expenditure on Aboriginal people

District	KHS community health expenditure $1000s	KHS Hospital based PHC expenditure $1000s	Other Community PHC expenditure (AMSs and Mercy Health Service) $1000s	Total PHC expenditure $1000s	Estimated per person PHC expenditure $
Broome	408.9†	274	1834.2†	2517.1	662†
Derby	1294.9†	1223	250** (764.1 in 98/99)	2767.9	780†
Fitzroy Crossing	458 (858*)	210	750.4 (possibly up to 1200 in 98/99)	1418.4	727
Halls Creek	396.9	157	1604.4	2158.3	799
Wyndham	607.8	308	0	915.8	733
Kununurra	762.1†	263	1197.6†	2222.7	988†
Total	**3928.6**	**2435**	**5636.6**	**12000.2**	**774††**

* Approximate cost of doctors deducted, since in other towns doctors are funded via the hospital (see notes to Table 7 above)

† Broome, Derby and Kununurra figures in particular include some expenditure on non-Aboriginal populations and hence may be over estimated. This also applies to other towns to a lesser extent.

**DAHS and Jurrugk are still being established. Expenditure on actual PHC for 1997/98 is an estimate only and increased significantly in 1999.

†† Overall expenditure and the extent of under or over estimation of the per person expenditure is difficult to estimate. This is therefore only a rough estimate (although probably with less potential for error than the figures produced in the Deeble report for Australia as a whole).

Costs not included in Table 8

PBS related expenditure.

It was impossible to obtain accurate figures on all pharmaceutical costs. Hospital expenditure is included in the above figures as are medications dispensed by Aboriginal Community Controlled Health Services, except for drugs covered under section 100 of the PBS. PBS and private expenditure is not included. Attempts to obtain this information direct from the Health Insurance Commission did not succeed, and in any case would not have given an indication of Aboriginal expenditure separate from total expenditure. Pharmacies and KAMSC were very helpful and provided as much information as they could. Section 100 payment to KAMSC $156,800. Aboriginal specific PBS for the Kimberley can be estimated to be just under $400,000 by extrapolating Kununurra pharmacy figures, or a little more if Broome pharmacy figures are used. Total PBS pharmaceutical expenditure (not including the relatively small amount of individual patient contributions) is therefore a little over $550,000 or about $36 per person per year.

Private expenditure on PBS and medical consultations

This is likely to be a very small amount for Aboriginal people as the majority of pharmaceuticals are subsidised by ACCHSs and this is covered above. Some private expenditure on PBS medications does occur but is a relatively small amount. Private GP consultations by Aboriginal people (only possible in Broome) are not included, whether bulk billed or not. This would not be a large amount and is probably much more than balanced by non-Aboriginal consultations at Aboriginal health services across the Kimberley (see below).

Cost of clinics outside hospital by hospital based GPs

This is hard to estimate but may amount to perhaps 3 full time doctors plus the cost of charter flights via RFDS. RFDS estimates annual expenditure on clinic services (including the PHC nurse based in Derby) to be about $468,500 (an average of about $30 per person – mainly transport) Most but not all of this expenditure is on Aboriginal people. This transport component was not included in the figures from Deeble *et al* either.

Cost of emergency medical care outside hospital

(RFDS and St Johns Ambulance in Kununurra and Broome)

These costs are not included, but these costs have also been left out of the comparison with non-Aboriginal Australians based on Deeble *et al*.

Office of Aboriginal Health expenditure

The Office of Aboriginal Health is a smaller but still very significant source of funds for PHC in the Kimberley. In the above expenditure many of the direct service related grants from the Office of

Aboriginal Health are included, but a number of other grants are not included. Several of these grants are yet to be spent (but will be in 1999) and a wide range of initiatives have been funded. While all grants are health related not all are paid to health organisations and some do not fit under the categories considered in these tables. Grants were paid (or are to be paid) to the Kimberley Health Services (largest proportion, incorporating $800,000 under the Medicare Access Model which has only recently commenced and hence is not in the above figures), Nindilingarri Cultural Health Service (much of the money earmarked for this developing service has also not yet been spent), various alcohol related services, Kimberley Aboriginal Medical Services and Shires within the region in descending order of expenditure in 1997/98 & 98/99. This will lead to a somewhat higher figure for total PHC expenditure in 1999 and beyond.

Costs included in Table 8 that should be excluded

The main cost included that should be excluded is the expenditure by Community Health Services and Aboriginal Community Controlled Health Services on non-Aboriginal patients. This is possibly a not insignificant proportion of CHS expenditure. This includes school and infant health services and a range other services. Given the size of the non-Aboriginal populations in Kununurra, Broome and to a lesser extent Derby this certainly amounts to a significant sum. There is also significant expenditure on non-Aboriginal people by BRAMS, EKAMS and to a much smaller extent Yura Yungi. Even if the marginal cost of providing these services is, more or less, recouped through Medicare (and hence not a significant cost to Aboriginal specific programs of the Commonwealth Department of Health), these figures are included in the expenses recorded above, along with all the Medicare income. This figure would also be significant. Taken together these two figures are almost certain to exceed the expenditure both on hospital GPs doing clinics outside hospitals and private PBS/Medicare expenditure.

Estimated Kimberley average Aboriginal PHC expenditure

The overall expenditure on PHC for Aboriginal people in the Kimberley is therefore possibly around $810 per person, possibly a little higher, although this is increasing with new services in 1999 and beyond.

Table 9 Expenditure within the Kimberley on hospital services

	***Hospital expenditure $million Aboriginal**	***Hospital expenditure $million Non-Aboriginal**	**Aboriginal population**	**Non-Aboriginal population**	**Local Hospital expenditure per capita ($) Aboriginal**	**Local Hospital expenditure per capita ($) Non-Aboriginal**
Small District Hospitals						
Fitzroy Crossing	1.770	0.306	1950	907	908	337
Halls Creek	1.325	0.227	2700	1331	491	171
Wyndham	2.449	0.594	1250	891	1959	667
Larger District Hospitals						
Broome	2.460	2.888	3800	10886	647	265
Kununurra	2.617	2.523	2250	6182	1163	408
Regional Hospital						
Derby	7.487	3.820	3550	2675	2109	1428
Total	**18.108**	**10.358**	**15500**	**22872**	**1168**	**453**

*Figures from Table 7, using second set of estimates based on Ambulatory Care Study for Aboriginal/non-Aboriginal outpatient division of expenditure.

Notes: Figures in Table 9 do not include expenditure on hospitals outside the Kimberley (including Tertiary referral hospitals). Clearly hospitals in different categories can not be compared as they have differing functions, however within categories some comparisons are valid.

Kimberley health services expenditure

Bringing together all non-inpatient expenditure, both hospital and non-hospital, highlights the overall deficiency in expenditure. According to the Deeble report on Aboriginal health

expenditure the average overall expenditure on and by non-Indigenous people across Australia, incorporating Medical expenses, Hospital Outpatients, Pharmaceutical Benefit Scheme pharmaceuticals and Community Health Services, is $805 per head. This is for average non-Aboriginal Australians living in cities and in the relatively good health typical of most of Australia. The Kimberley figure for Aboriginal people in Table 8, while not incorporating all expenditure, does cover most expenditure and does not appear to be grossly under stated. Even adding an estimate for PBS pharmaceuticals, as outlined in the notes to Table 8, the overall cost is, at $810, within a few dollars of the national average for non-Aboriginal people.

In addition expenditure on non-Aboriginal people in the Kimberley, while not explicitly described here is a very long way below average. Hence the overall average for all Kimberley people is also a long way below the national average (based on the above tables and rough estimates of other expenditure it is likely to be well under $500 per capita). One of the most remote and expensive areas in Australia with the largest proportion of Aboriginal people and demonstrably substantially worse health than most of the rest of the country has substantially less spent on primary health care than most of the country.

Obviously these levels of expenditure on PHC are major problems. Providing services in the Kimberley in general, and remote communities in particular, is substantially more expensive than providing the same level of services in Sydney, Melbourne or Perth. In addition, given the large Aboriginal population and the burden of ill health amongst this population, as outlined above, there is clearly a desperate need for more funding to address the health problems that already exist, let alone to prevent future health problems.

Even if the expenditure for and by non-Aboriginal people in the major cities is a little excessive, the tables above provide clear evidence that there is under spending on Kimberley Aboriginal people's health care outside institutions, and more expenditure is required based on need and equity. Based on the health status of the people, and the extra cost of providing remote area services, PHC expenditure on Aboriginal people should be at least double, and for remote areas probably triple, the amount spent on non-Aboriginal city dwellers for an equitable level of services to be provided. Even taking an extremely conservative approach and reducing the $800 figure for non-Aboriginal urban people to $600 as being reasonable baseline expenditure for all Australians (allowing for the supposed extravagant expenditure in Australia as a whole – a debatable point) does not improve the equation much. Taking such a figure would as an absolute minimum mean that at least $1200 per person should be spent in Kimberley towns and a minimum of $1800 per person in communities more than a short distance outside of towns. In reality much more than this is probably needed.

By way of contrast funding for hospital services for Aboriginal people, even excluding teaching hospital costs, is just above the State figure for overall hospital expenditure on inpatient care for Aboriginal people of $1147 (Deeble, Mathers, Smith, Webb, & Smith, 1998 p121). Teaching hospital costs for Kimberley Aboriginal people are significant (9 per cent of admissions of Kimberley Aboriginal people but probably a larger proportion of costs), and overall inpatient expenditure is therefore substantially higher for Aboriginal Kimberley people than for Aboriginal people elsewhere in the State. This is not surprising given the cost of providing services in such a remote area. This higher expenditure, even if it could be transferred to primary care would only make up a minority of the under expenditure on PHC. It is not possible to transfer funds directly from secondary to primary care, since secondary care is dealing with ill health resulting from conditions over the past several decades and needs in this area will not decline rapidly no matter how good services become.

Improvements in the circumstances leading to ill health, and in the provision of primary and secondary prevention through PHC, if implemented will over time reduce this demand on hospital inpatient services, but far greater resources will have to be devoted to preventive measures before this occurs. Clearly one essential priority of the Kimberley Aboriginal

Health Plan must be to get appropriate levels of health care resources into the Kimberley and to ensure it is equitably distributed.

PHC funding – Comparisons between districts and large communities

At first glance Table 6 suggests that Derby and Wyndham are poorly resourced, however both these towns currently have a large amount of PHC services provided via the local hospital and, as shown in Table 7, have the largest hospital expenditure per capita. Broome district appears to have only marginally more spent per capita than Derby and Wyndham and, while it also has a significant proportion of PHC provided by the District Hospital, the extent of this is certainly less than in the other towns. In fact Broome appears to have less well funded PHC services overall than other towns.

The areas where it is clear there is significant under servicing are the larger remote communities, the upper Dampier peninsula communities (including the One Arm Point, Djarindjin and Lombadina communities), Bidyadanga, the Kutjungka area or Balgo group of communities, Warmun and Kalumburu. Bidyadanga, the upper Dampier peninsula communities and Warmun in particular, appear to have less health service resources devoted to them. The Kutjungka area is further disadvantaged by having four major locations to provide services for (Wirrimanu (Balgo), Mindibungu (Bililuna), Mulan and Yagga Yagga), and by the high cost of transport to and between such remote locations. Thus, while at first glance the amount of funds devoted to the service is larger than for other under-resourced remote areas, in practice it is equally poorly resourced. Smaller remote communities are, of course, generally even more poorly served and many have no services or only very occasional services (see Appendix 2).

Overall the district in the Kimberley that is clearly least well served by Primary Health Care is the Halls Creek district. In addition this is also the most remote area of the Kimberley and has the poorest level of hospital services, as discussed below. Table 7 above presents hospital expenditure for each of the six hospitals in the district. The first point to note is that expenditure on hospitals approaches three times the expenditure on community PHC services and this does not include the substantial expenditure on hospital services outside the Kimberley. While hospital expenditure is difficult to reduce for reasons discussed above, hospital expenditure needs to be examined very carefully in the context of increasing expenditure on PHC services. Certainly hospital budgets are part of the equation that needs to be on the table in planning services for the Kimberley as a whole.

Primary Health Care Service Staffing in the Kimberley

As shown in Tables 10 and 11 below, at the beginning of 1999 a total of about 51 AHWs (with an additional 11 undergoing on the job training), 55.5 Nurses and 33 or 34 general practitioners were employed in the Kimberley. Most of these staff work primarily but not exclusively in Aboriginal health. Some of the nurse time and a significant proportion of the doctor time is spent serving the non-Aboriginal population in the Kimberley. Probably less than the equivalent of 50 nurse FTEs are devoted to PHC for Aboriginal people and possibly the equivalent of only about 22 to 25 of the doctor FTEs are in Aboriginal health, although this is difficult to estimate.

Table 10 Aboriginal Health Workers – Full time equivalent staff numbers

	Aboriginal Health Workers (FTE)					
	KHS			**Other**		
Area	**Funded FTEs as of March 99 †**	**Trained AHWs***	**Other**	**Trained AHWs***	**In training**	**Other**
Broome town and surrounds	1.5 (plus casual AHW)	2	1 (mental health)	10 (inc 2 Health promotion)		
Bidyadanga				1.375		
Beagle Bay				1.375		
One Arm Point/Bardi	1	0				
Lomdadina/Djarindan		0				
Derby town area & Mowanjum	4	4		3 DAHS		
Gibb River Road communities				1 Jurrugk		
Looma	0.75	1				
Lower Fitzroy area other than Looma		0				
Fitzroy Crossing town area	1	1			11 NCHS (for district)	7 NCHS (for district)
Muludja		0				
Bayulu, Eight mile and other communities	1.8	0.5				
Wangkatjungka, Ngumpan etc.		0.5				
Yungngora/Nookanbah Yakanara, Millajidee	1	1				
Halls Creek town area	2	2		5 YYHS		
Yiyili		0				
Ringer's Soak		0				
Wirramanu/Balgo				3		
Yagga Yagga						
Mindibungu/Bililuna				2		
Mulan				1		
Warmun	0.5	0.5				
Kununurra town area	2	2		6		
Doon Doon , Glen Hill Kununurra area				(included in above)		
Wyndham town area	3	2				
Oombulgurri		0				
Kalumburu	1.5	1				
Total	**20.05**	**17.5**	**1**	**33.75**	**11**	**7**

* Trained to advanced certificate level or above and employed at the time of survey (late 1998/early 1999)

† Budgeted KHS positions as provided to the consultant in March 1999 (4 level 3, 13.8 level 2 and 1 level 1). In addition 4 Aboriginal Environmental Health Workers (AEHW) are employed through KPHU and a level 4 Manager of Aboriginal Health Work has been employed in Derby in 1999.

Note: AEHWs employed through CDEP are not included in this tabulation. CDEP based services are important and provide a wide range of useful services but are not a substitute for full time health sector employees.

Table 11 Distributions of Community Registered Nurses and General Practitioners – Full time equivalent staff numbers

	Nursing Staff (excluding hospital staff)		**General Practitioners (all GPs)**	
Area	**KHS**	**Other**	**KHS**	**Other**
Broome town and surrounds	5.52	1 (BRAMS) 1 (health promo)	3 (hosp)	3 BRAMS 3.5private (1KAMSC not primarily GP)
Bidyadanga		2(KAMSC)		
Beagle Bay		2(KAMSC)		
One Arm Point/Bardi	1.62			
Lomdadina/Djarindan	1.24			
Derby town area & Mowanjum	5.55		8 GP (+3 specialists & 2 Public Health)	1 (DAHS)
Gibb River Road communities	0.86			
Looma	1.10			
Lower Fitzroy area other than Looma				
Fitzroy Crossing town area	4.08	2 (NCHS)	2/3 (hosp)	
Muludja	(included in above)			
Bayulu, Eight mile and other communities	(included in above)			
Wangkatjungka, Ngumpan etc.	0.33			
Yungngora/Nookanbah Yakanara, Millajidee	0.63			
Halls Creek town area	4.94		2 (hosp)	1.5 (YYHS)
Yiyili	(included in above)			
Ringer's Soak		1 (YYHS)		
Wirramanu/Balgo		1 (Mercy)		
Yagga Yagga				
Mindibungu/Bililuna		1 (Mercy)		
Mulan		1 (Mercy)		
Warmum	2.27			
Kununurra town area	4.64	4 (EKAMS)	4 (hosp)	3 (EKAMS)
Doon Doon , Glen Hill Kununurra area		(included in above)		
Wyndham town area	2.78		2 (hosp)	
Oombulgurri	1.16			
Kalumburu	2.77			
Total	**39.49**	**16**	**21 or 22 GPs, 2 Public Health**	**12 (9 primarily Aboriginal Health)**

A 1997 report for Central Australia considered issues of staffing for services to Aboriginal communities in that area and the recommendations from this report are a reasonable starting point for staff requirement in remote areas of WA, including the Kimberley (Wakerman, Bennett, Healy, & Warchivker, 1997). The suggested ratios for the above three categories of staff serving Aboriginal people in remote areas are: 1 AHW for each 100 population (a total of 155 for the Kimberley), one community nurse for each 250 population (62 for Kimberley) and one General Practitioner for each 600 Aboriginal population (26 GPs). Obviously both doctor and nurse resources are also required by the non-Aboriginal population and this adds to the numbers required. The Australian average for GPs is one FTE for every 1143 people (General Practice Strategy Review Group, 1998), which equates to an additional 19 GPs for the non-Aboriginal population of the Kimberley, an overall total of 45 GPs. There are no readily available figures for community nurse numbers for non-Aboriginal populations, but clearly the figure of 62 nurses is also an understatement of the needs.

Obviously there is a need for increased staff across the board, with a large increase in appropriately trained PHC Aboriginal Health Workers in all areas being the main priority. There also needs to be an increased number of nurses and doctors, especially in the more remote areas of the Kimberley. Ways to address these requirements are set out in the recommendations.

A Description of some of the Specialised Health Care Services in the Kimberley

Mental health services

Mental health consists of two distinct areas, both of which are very important issues in the Kimberley. These two areas are major psychiatric morbidity (including schizophrenia, bipolar affective disorder and major depression) and the general mental health of people without major psychiatric conditions. This second area is crucial, as most of the people who commit suicide do not have major psychiatric conditions. Mental health services, while having the capacity to contribute to community based initiatives in this second area, have a much more limited role as outlined in the recommendations.

Mental health services have developed rapidly over recent years and this has resulted in a number of improvements, most notably a substantial decline in referrals to Graylands Psychiatric Hospital in Perth. The recent increase in spending in this area is to be welcomed. The personnel employed and where they are located are listed in Table 12 below.

The North West Mental Health Service is providing very important expertise through specialist staffing and has made a significant difference to the care provided to people with serious mental health problems.

Unfortunately the mental health services in the Kimberley appears, at times, to have operated in parallel with other services in the Kimberley rather than in genuine partnership. This appears to have led to problems with the integration of mental health services and other PHC services. These concerns were expressed to the consultant by a range of people across both the government and community controlled sector from towns across the Kimberley. The community sector was particularly disappointed at both what they saw as a serious lack of consultation on important planning issues in this area and on a lack of integration between specialist and broadly based PHC services.

Table 12 Mental Health Services

Mental health staff	Aboriginal Health Workers (Emotional, Spiritual and Social Wellbeing Workers)	Mental health Nurses	Psychiatrists / Registrars
Kununurra	1 (unfilled at time of survey)	2	
Derby	0	1	
Broome	1	3 (inc coordinator)	2.5

Examples of lack of integration include the locating of Aboriginal employees in isolation from generalist health services (or even other community organisations) and the development of alcohol related services separate from both existing health services and from existing alcohol services. While excellent people may have been employed to fill these positions such approaches are likely to lead to fragmentation and competition between services, and to recurrent problems in the future due to staff lacking a locally supportive working environment.

The priority for the North West Mental Health service is to work much harder at developing true partnerships with other health care providers and agencies with a role in mental health. This is addressed in the recommendations.

Dental services

Dental services are separate from other health services in the Kimberley and run as part of the State dental health services. It is widely recognised that existing Kimberley services in this area are inadequate. There is little use of AHWs and an uneven distribution of government services. Clearly there are insufficient dental staff as shown in Table 13 below and even the extent of the unmet need is not known.

Some limited general recommendations concerning dental services are made later in the report.

Table 13 Dental Services

Area	HDWA Dentists	Dental Therapists	Private Dentists
Derby	2		
Fitzroy Crossing	1		
Broome		0.89	1
Kununurra		0.89	1

Aged care services

Aged care is provided by a wide range of staff, working for a number of different organisations. Given the complexity of the services needed in this area and the broad range of issues that need to be addressed these services are working well, although as with other services the quantity and distribution of resources remains an important issue that needs continuing effort. While much of the aged care provided is in the community, a major concern is problems with residential facilities. The most important concern raised was the

lack of local aged care beds, in particular high dependency care beds, in most of the Kimberley.

Medical, nursing and allied health support for aged care services are provided in an integrated fashion with local PHC staff and it is therefore difficult to completely apportion staff resources devoted to aged care. Apart from administrative staff, Kimberley Aged Care employs two registered nurses, one social worker and one occupational therapist directly and also contracts the services of a range of other staff through local health services. In addition they contract for two visits per year by a geriatrician from Royal Perth Hospital. This model of utilising the expertise of the local health service and providing additional support and specialist advice is to be encouraged and expanded as it fits well with the principles of PHC listed later in this document. Commonwealth and State funding agencies need to recognise the benefits of flexible integrated approaches to aged care and ensure that program based funding guidelines do not obstruct the increased flexibility required to provide appropriate care for the range of communities in the Kimberley.

Aged care has changed considerably over the last decade and a much broader range of services are provided. One of the major issues is that the vast majority of high dependency aged care have been provided through Numbala Nunga Nursing Home (NNNH) in Derby and this facility is no longer considered adequate for the task. Indeed Kimberley Health Service has been informed that, while care is excellent, the building is no longer considered suitable and is unlikely to be accredited beyond the year 2000. This in fact presents a golden opportunity to review bed needs, further decentralise services and provide more aged care closer to the communities the older people come from. There is also concern with the uncertainty of use of the existing places in hostels. On one hand the Commonwealth states ageing in place can occur, but beds are still classified as high and low places. This is also influenced by the approvals for high or low care that occurred prior to October 1997.

A recent survey recorded 75 people currently occupying high care beds – this included 50 places at NNNH, people with high care needs living in hostels, nursing home type patients living in Wyndham and Broome hospitals, and several patients awaiting placement in acute hospitals. It is estimated that there is already a need for up to 90 high care beds in the Kimberley. Problems with respite care and palliative care in the Kimberley were also raised with the Consultant. Clearly while many aspects of the current services are working well and innovative collaboration is occurring there is also a substantial need for increased resources for long term and respite residential aged care, especially for high dependency aged people.

Residential aged care, both long term and respite, is more difficult to arrange than in more densely populated areas because the Kimberley Aboriginal population is widely dispersed. Transport is a particular problem for aged people and long difficult trips on poor roads is a major obstacle to people spending more time in their community and having appropriate respite options. In addition patients with particular needs related to physical or mental disability such as people with significant dementia, present problems for small facilities that have limited resources. Some of these difficulties can be reduced with increases in resources, but providing appropriate care will continue to be substantially more expensive than in more densely populated areas. In addition a small number of people will need to be accommodated in a facility outside their district, or even on occasions possibly outside the region.

Apart from funding for various types of residential care there is a major deficiency in trained staff to work with aged people especially, but by no means exclusively, outside the major towns. There is a large unmet need for improved funding for, and access to, training for aged care workers in communities in the Kimberley. Funding for training also needs to be flexible, work across programs and utilise local training resources, such as the KAMSC health school. Some recommendations concerning aged care are made later in this report.

Alcohol and substance misuse programs

Compared to other regions of the State and the country as a whole, the Kimberley region is relatively well serviced by substance misuse programs – or, at least, alcohol programs. In 1997–98, a total of 14 agencies were each conducting one or more specific substance misuse projects in the Kimberley. These agencies and the services they provide are summarised in Table 14. While some of these agencies also provide services for those misusing drugs other than alcohol, these are minimal. In addition, some substance misuse services are provided as part of the regular activities of other health care service providers.

Alcohol intervention projects fell into four categories: acute interventions, treatment, prevention, and support services. It is difficult to allocate some projects exclusively to one or other of these categories as some – like the Kimberley Community Drug Service Team – include both prevention and treatment components that are not easily separable. However, in Table 14, projects are categorised in terms of their main role.

In 1997–98, budgets for these programs totalled just over $3.11 million – of which $215,948 (6.9 per cent) was non-recurrent funding. As well as funds for service provision and associated facilities, Table 14 also includes allocations for items such as staff training and project evaluation. Just under half of this funding ($1.49 million) was allocated for the provision of treatment services – either some form of residential or non-residential counselling (although the activities of staff in these programs also included some preventive activities). The next largest allocation of funds – 33 per cent or $1.03 million—went to the provision of acute intervention services such as night patrols and sobering up shelters. Preventive services were the poor relation receiving only $0.50 million or 16.1 percent of the funding allocation. (It should be noted that this is an over-estimate as it includes treatment services, as well as services to non-Aboriginal people, provided by the Kimberley Community Drug Service Team.) In addition to funds for the provision of services and related facilities and equipment, funds totalling $75,093 (2.4 per cent) were provided for purposes such as staff training, project development, and program evaluation.

Most of the funding for these projects was provided by government agencies. The agencies providing the bulk of funds were the Office of Aboriginal and Torres Strait Islander Health Services (39.2 per cent) and the Western Australian Drug Abuse Strategy Office (31.6 per cent). The amount of funds and the proportion of the total provided by each agency is listed in Table 15. Table 15 also includes $12,870 raised in rental collections from community members by Ngnowar-Aerwah Aboriginal Corporation. Importantly, all of these services rely to some extent on the voluntary efforts of community members.

Both Table 14 and Table 15 show the total amount of funds allocated to each of the health service areas we have delineated. Table 14 also shows these amounts as a percentage of the total funds allocated and as a per capita amount for each health service area. Some funds have been allocated to the Kimberley Region as a whole. These include funds for the HEATWorks program provided by the Kimberley Aboriginal Medical Service Council, and funds for the Kimberley Community Drug Service Team which has staff based in Broome, Derby and Kununurra who service adjacent communities.

There is considerable variation in the funds provided to each health service area on a per capita basis. These range from a low of $35 per capita in the Derby area to a high of $343 per capita in the Kununurra area. However, it would be a mistake to simplistically infer that existing funds should be re-allocated on the basis of health service area populations. As will be discussed below, to a greater or lesser degree, all of these substance abuse services appear to be under-resourced.

Table 14 Funding for alcohol intervention projects by project type by health district

Organisation	Location	Project/Service type	Funding Agency	Acute intervention	Treatment	Prevention	Client Support	Other	Totals	Per cent	$ Per capita
Kimberley Aboriginal Medical Services Council	Regional	HeatWorks	OATSIH			300,000					
Kimberley Community Drug Service Team	Regional	Community Drug Program	Drug Abuse Strategy Office			130,485					
		Salary and on costs	Office of Aboriginal Health			71,517					
					0	502,002	0	0	502,002	16.1 %	32
Kularri Patrol	Broome	Night Patrol	Aboriginal Affairs Dept	30,000							
Milliya Rumarra Alcohol and Drug Centre	Broome	Rehabilitation program	Office of Aboriginal Health		40,800						
			Aboriginal Hostels		284,489						
		Rehabilitation program	OATSIH		239,997						
		Vehicles x 2	OATSIH		*58,169*						
		Building Repairs	OATSIH		*40,400*						
		Administration	Family and Children Services		12,312						
		Crisis care	WA Council of Social Service				14,000				
				30,000	676,167	0	14,000	0	720,167	23.1 %	190
Numbud Patrol	Derby	Night patrol	Aboriginal Affairs Dept	30,000							
Garl Garl Walbu Aboriginal Corp.	Derby	Sobering up shelter	Drug Abuse Strategy Office	92,906							
				122,906	0	0	0	0	122,906	3.9%	35
Nindingarri Cultural Health Centre	Fitzroy Crossing	Marrala Patrol	Aboriginal Affairs Dept	30,000							
		Sobering up shelter	Drug Abuse Strategy Office	134,950							
		Sobering up shelter	Drug Abuse Strategy Office b/f	100,000							
				264,950	0	0	0	0	264,950	8.5%	136
Jungarni Jutiya Alcohol Action Council	Halls Creek	Kija' Jaru Night patrol	Aboriginal Affairs Dept	30,000							
		Alcohol and counselling service	OATSIH		178,747						
		Building repairs	OATSIH		5,000						
		Staff training	OATSIH					*4,720*			
Halls Creek People's Church	Halls Creek	Sobering up shelter	Drug Abuse Strategy Office	264,900							

				294,900	183,747	0	0	4,720	483,367	15.5 %	179
Table 14 (continued)											
Ngnowar-Aerwah Aboriginal Corp	Wyndham	Wyndham Patrol	Aboriginal Affairs Dept	30,000							
		Counselling project	}								
		Seven Mile rehabilitation project	} Office of Aboriginal Health		195,000						
		Community education & training project	}								
		Seven Mile rehabilitation project	Rental Collections		12,870						
Kalumburu Action Group	Kalumburu	Development of Education Program	Office of Aboriginal Health					*10,000*			
				30,000	207,870	0	0	10,000	247,870	8.0%	198
Kununurra Youth Service	Kununurra	Counselling and Prevention	Office of Aboriginal Health		*10,000*						
Waringarri Aboriginal Corp	Kununurra	Miriwong patrol	Aboriginal Affairs Dept	30,000							
		Miriwong patrol (petrol)	Wyndham Shire Council	1,000							
		Moongong Dawang sobering up shelter	Drug Abuse Strategy Office	259,100							
		Alcohol (counselling) project	Office of Aboriginal Health		58,300						
		Marralam alcohol rehabilitation project	OATSIH		287,804						
		Vehicle	OATSIH		*43,679*						
		Staff training	OATSIH					*7,483*			
		Management Support	OATSHIS					*14,750*			
		Evaluation of Waringarri & Ngn.	OATSIH					*38,950*			
Mirrilingki Warmun	Warmun	4 Week Healing Program	Office of Aboriginal Health		*20,000*						
				290,100	419,783	0	0	61,183	771,066	24.8 %	343
Totals				**1,032,856**	**1,487,567**	**502,002**	**14,000**	**75,903**	**3,112,328**		**201**
Proportion of total to Different types of services				**33.2%**	**47.8%**	**16.1%**	**0.4%**	**2.4%**			

Figures in italics indicate non-recurrent funding ($228,151)

Table 15 Funding for alcohol intervention projects by funding agency by health district

District	Regional	Broome	Derby	Fitzroy	Halls Ck	Wyndham	Kununurra	Total	Percent
OATSIH	300,000	338,566			188,467		392,666	1,219,699	39.2%
Drug Abuse Strategy Office	130,485		92,906	234,950	264,900		259,100	982,341	31.6%
Office of Aboriginal Health	71,517	40,800				205,000	88,300	405,617	13.0%
Aboriginal Affairs Dept		30,000	30,000	30,000	30,000	30,000	30,000	180,000	5.8%
Aboriginal Hostels		284,489						284,489	9.1%
Family and Children Services		12,312						12,312	0.4%
WA Council of Social Service		14,000						14,000	0.4%
Wyndham Shire Council							1,000	1,000	0.0%
Community cash contribution						12,870		12,870	0.4%
	502,002	**720,167**	**122,906**	**264,950**	**483,367**	**247,870**	**771,066**	**3,112,328**	**100.0%**

The effectiveness of substance misuse services

Few of the substance misuse projects in the Kimberley have been formally evaluated. However, in 1998, the Aboriginal research team at the National Centre for the Prevention of Drug Abuse was contracted to evaluate the projects conducted by the Waringarri and Ngnowar-Aerwah Aboriginal Corporations in Kununurra and Wyndham (Somerford & Serafino, 1998)

Waringarri Aboriginal Corporation has developed one of the most comprehensive alcohol prevention and treatment programs in Australia. The objectives of each of Waringarri's four projects enjoyed wide community support. However, while there was evidence that each had achieved some positive outcomes, both community members and the evaluators were of the view that more could be done to improve project outcomes. The major factor constraining the performance of all projects was lack of, and limited opportunity for, staff training. This limited program development and resulted in poor management and accountability. Particularly with regard to the Miriwong Patrol, CDEP wages were an inadequate incentive to perform the difficult and stressful work involved, and there was a high staff turnover rate. In the case of the Marralam Treatment Centre, the inadequacy of existing facilities was also noted (Sputore, Gray, Bourbon, & Baird, 1998).

Results of the Ngnowar-Aerwah evaluation were similar and, again, there was some evidence that each of the projects was achieving its objectives. While Ngnowar-Aerwah had more effective management structures in place than did Waringarri, the projects were constrained by inadequate staffing of the counselling and treatment program, the need for more staff training, high turnover of night patrol staff, and the inadequacy of facilities at the Seven Mile Treatment Centre (Sputore et al., 1998).

The report by Sputore *et al*. contained a large number of recommendations. Already, the Office of Aboriginal and Torres Strait Islander Health Services is assisting Waringarri to implement some of the recommendations—particularly those relating to project management—and steps are under way to develop a strategy for the implementation of the others.

The findings of the Waringarri and Ngnowar Aerwah evaluations reflect those of evaluations of other Aboriginal substance misuse programs – particularly with regard to the need to provide adequate training and support for program staff (Gray, Saggers, Sputore, & Bourbon, 1998). It is likely that, to a greater or lesser degree, they also apply to other projects being conducted in the Kimberley, and it is recommended that – should they wish – all agencies providing substance misuse services should be assisted to: conduct audits of their services; provide appropriate training of existing staff or recruitment of new staff; and to address any identified deficits. Mirrilingki and the Kimberley Community Drug Service Team already provide some training in this area and this could be expanded and better integrated in partnership with other agencies, if they feel it will address their needs.

Service coordination

There exists the potential for the Health Department's Kimberley Community Drug Service Team to duplicate some of the services provided by Aboriginal community controlled substance misuse agencies. The Team Leader is well aware of this and has indicated that the Team's priorities are to provide services where there are currently minimal levels of service and to provide professional development support to staff of other organisations. However, in this regard, it is important that the Kimberley Community Drug Service Team's role be monitored and that it should continue to liase closely with the community controlled organisations to ensure that there is no duplication of services.

The activities provided by the community controlled health services are generally well coordinated. However, among the community controlled substance misuse services, there is no regional agency such as KAMSC (which coordinates activities such as purchasing of supplies, advertising of staff vacancies, development of treatment protocols, and policy development) nor a state-wide body such as WACCHO (which provides a political voice to agencies and enables the exchange of information). It is recommended that, in the Kimberley, government funding and purchasing agencies should provide resources to enable regular meetings between representatives of the substance misuse agencies. This would facilitate the exchange of information, improve service delivery, and ensure an optimum return on the resources invested in these agencies.

Generally, the clients of the substance misuse agencies are also clients of the community controlled health services. At present, most of the contact that occurs between these agencies is related to the care of clients. It is our view, that the activities of all agencies would be strengthened if there was more contact between them and we recommend that there be regular meetings between those agencies conducting substance misuse projects and the community controlled health services with the aim of facilitating program coordination.

The National Aboriginal Health Strategy Working Party reported that:

> *... there is a consensus in the Aboriginal community which understands the 'alcohol' problem ... as a symptom (ultimately a symptom of dispossession) of alienation* …(National Aboriginal Health Strategy Working Party, 1989 p194).

This is a point which cannot be given enough emphasis. While health promotion and treatment services are essential, on their own they are not sufficient to adequately address problems of substance misuse. Accordingly, there is also a need for close coordination between substance misuse services and the community and economic development programs being conducted by the Aboriginal and Torres Strait Islander Commission and other community controlled organisations.

Gaps in existing substance misuse programs

A major problem identified by Sputore *et al.* with respect to the provision of substance misuse programs in Kununurra and Wyndham was the lack of after-care services for those completing treatment. Similar concerns have also been expressed for example, in the case of clients returning to Fitzroy Crossing after spending time at Milliya Rumarra in Broome. Without after-care services, much of the resources allocated to treatment are wasted. It is our view that this issue should be addressed and it is recommended that as resources become available, after-care services should be linked to all of the existing treatment programs.

There are important social and cultural differences between Aboriginal people residing in different areas within the Kimberley. Also, those requiring treatment for alcohol related problems have differing needs. As a consequence, Sputore *et al.* found there was little support in the East Kimberley for suggestions that the rehabilitation programs conducted by the Waringarri and Ngnowar Aerwah Aboriginal Corporations be amalgamated. Furthermore, in both Derby and Halls Creek there are moves by community members to seek the establishment of local alcohol rehabilitation programs.

Members of the Derby Aboriginal community have given considerable thought to what components should be included in appropriate prevention and rehabilitation services. While many of their recommendations are specific to their local area, others are generalisable to other areas, and it is recommended that the existing substance misuse agencies should examine the strategies developed as part of the Derby Aboriginal Alcohol Free Bush Camp/Bush College Project with a view to incorporating relevant strategies into their own programs.

The push for new treatment services in the Kimberley presents a dilemma. It is very important that government funding and purchasing agencies are responsive to the needs of local communities. However, as indicated above, the treatment services provided by Waringarri and Ngnowar-Aerwah (and possibly Milliya Rumarra) are under resourced and as a consequence are experiencing difficulty in achieving their objectives. While there is a real need for intervention projects in other health service areas, it is the view of the consultants that it is better to have three adequately resourced and effective services than five which are limited in their ability to achieve desired outcomes. Accordingly, it is recommended that—until there is a significantly large commitment of new funds—proposed intervention projects in Derby and Halls Creek should not be funded.

As indicated above – largely because of the social disruption that accompanies excessive use – most of the focus in the provision of substance misuse services has been upon alcohol. While it makes a major contribution to Aboriginal mortality and morbidity the resources directed to the reduction of tobacco smoking have not been proportional to the magnitude of the contribution of smoking to ill-health. Also, to date, limited effort has gone into the development of formal intervention programs to address the emerging problems of cannabis and other illicit drug misuse. This situation needs to be remedied and substance misuse and health care agencies need to work together to develop appropriate intervention programs aimed at tobacco smoking, the emerging problems of cannabis and other illicit drug misuse. Detailed recommendations are listed later in this document.

Visiting Specialist Services

Table 16 on the following page outlines specialist visits across the Kimberley for 1998. There are substantial differences in the levels of service provided in different areas. Some of the bigger apparent differences in Table 16 below are at least partially explained by local factors. For example the differences in the number of visits between Halls Creek and Fitzroy Crossing are in part due to separate visits to the Balgo area being included under the Halls Creek district. Additional paediatric visits to the Balgo area are justifiable based on the lack of resident medical staff in this area. Some of the other apparent deficiencies presumably relate to lack of staff for part or all of 1998.

While many of these differences reflect a range of local factors, the distribution of services does not appear to be equitably based in all cases. There was not time during this consultancy to document why services were provided the way they were, however it is apparent that for some specialties the smaller towns appear to be missing out on services. Requirements for specialist services in different areas need to be monitored and reviewed at the district level.

Table 16 Actual visits by specialist and allied health staff in the Kimberley by District, January to December 1998

Specialist	Broome District	Derby District	Fitzroy Crossing District	Halls Creek District	Kununurra District	Wyndham District
DERBY BASED						
Paediatrician	28	8*	6	22	3	2
Gynaecologist/ Obstetrician	12	1*	2	4	11	5
Surgeon	20	*	clinics not conducted	clinics not conducted	8	1
BROOME BASED						
Psychiatrist†	12*	26	12	8	26	26
ALLIED HEALTH STAFF BASED IN THE KIMBERLEY						
Physiotherapist	18*	9*	11	9	6*	8*
Occupational therapist	21*	7*	13	12	9*	19
Speech Pathologist	17*	4*	8*	10	10*	19
Regional Pharmacist	1	*	0	7	1	1
PERTH BASED SPECIALISTS						
Paediatric Consultant	15	6	3	3	21	10
Renal Physician	4	2	2	2	4	2
Orthopaedic Consultant	13	8	3	2	12	2
ENT Team	18	15	4	4	19	4
Ophthalmology/Optometrist	18	13	4	5	19	4
Physician	22	12	4	8	8	6
Rheumatologist	5	4	0	0	4	0
Dermatologist	7	8	4	4	10	5
Paediatric Cardiologist	2	2	0	0	2	0
Adult Echo Cardiologist	2	2	1	0	5	0

* Speciality Staff based in the Region/Town therefore accessibility is generally much better than in other towns. The number of visits included here represents visits to communities surrounding these towns, not services to the towns themselves.

† Other Broome based mental health staff, and staff in Kununurra visit widely in the Kimberley but are not recorded separately here

Notes

Visits by both the Derby Based Specialists and Allied Health Staff based in the Kimberley is a record of the number of days where visits occurred. Most visits would involve perhaps half a day actually providing a service, however some would involve a full day. It was not possible to document the hours of work in the time available.

The frequency of the visits of the Perth Based Specialists approximates the number of half days spent in each district. On some occasions two district were visited on one day.

Barriers to Aboriginal People Accessing Health Care

Many of the barriers to access for Aboriginal people are discussed above or are indirectly referred to. These issues have also been explored in detail in many documents on the health of Aboriginal people in remote areas over many years (Dodson, 1991; Gray & Atkinson, 1990; National Aboriginal Health Strategy Working Party, 1989; Task Force on Aboriginal Social Justice, 1994; Wakerman et al., 1997). This section summarises some of these issues.

Aboriginal people are dispersed across the Kimberley much more widely than non-Aboriginal people, and this has obvious implications in terms of access to health care. For Aboriginal people this means often not having qualified staff close at hand when health problems occur, and then all the logistics of obtaining care. This involves getting access to a telephone that works and access to one or more forms of suitable transport. Even for less urgent health problems, it may require a full day to obtain services that a person living in a large town can obtain in at most a couple of hours. Also if health staff only visit once a fortnight to a nearby community then either this becomes the sole priority, or if other important issues arrive the service can not be accessed. There is no such thing as after hours doctors clinics in areas such as Balgo, Bidyadanga or Kalumburu. In small communities you see the doctor when he or she arrives or not at all.

People in communities outside the larger towns also usually have no choice of doctor, or even a choice of the gender of the doctor they see (or any choice in the gender of the remote area nurse or Aboriginal health worker who may be the only resident staff member).

These and other problems with accessing health services make it all the more important that, when people are seen, their problems are treated in the most sensitive manner and with even greater care than otherwise might be required. Anything forgotten on a fortnightly clinic will have to wait two weeks or could involve an unnecessary evacuation.

These geographical difficulties with access substantially increase the costs of providing services and the cost of the infrastructure to maintain services, both visiting and resident, in remote areas.

Bound up with geographical problems are transport problems. As discussed above, and in Appendix 2, access to many communities is difficult and obtaining suitable transport to obtain health care is often a problem. Even for communities reasonably close to town with bitumen roads transport can be a problem if there is no vehicle available. For communities without good road access obtaining a suitable vehicle for a trip to the nearest health service is often a problem, since four wheel drive vehicles in good condition are often in short supply. While for other communities the only practical way of obtaining assistance is by air, either by charter or from the Royal Flying Doctor Service (RFDS). Many of these transport options have a considerable price, to the individual, to the community (in the case of community vehicles or community paying for charter flights), to the health service provider (RFDS, Aboriginal Community Controlled Health Service, Community Health Service, Hospital or other health service) or to a combination of these.

It is impossible to put a price on all the expenses involved in simply getting to health care services since only some aspects of urgent or emergency health care provided by certain organisations are accounted for separately. However there is no doubt that the cost is substantial, and a major drain on the Aboriginal community. Apart from the cost before getting to health services there are also concerns about the cost associated with receiving care, both direct and indirect.

Certainly the PATS scheme and the existing emergency services (RFDS, St John's Ambulance and hospital based Ambulance services) are the focus of many concerns from a wide range of people across the Kimberley. These concerns include, in particular, the cost of

using St John's Ambulance (and hence a reluctance to access this service), the inequity of having to pay for ambulances in two towns but not in the others, problems with airstrips and problems with the type of transport provided under the PATS scheme. Particular concerns about PATS include issues such as long bus trips for new mothers going home with their babies and patients getting lost between the Kimberley and the destination in Perth. There are concerns about the visible retraction of RFDS services in the Kimberley over the past decade - the closure of the Wyndham base and the Derby radio operations, the loss of Kimberley RFDS management and recently the move of a long-range aircraft to Kalgoorlie. Much of this restructuring relates to the increasing cost of providing RFDS services and funding constraints. A wide range of other examples of perceived problems with transport and emergency services were also provided.

Services providing emergency care and transport are functioning within their own technological, staffing and financial constraints, and this review did not have the time or resources to investigate the concerns expressed. However clearly an ongoing process to address concerns about emergency care and transport is an important part of addressing the immediate health concerns of Kimberley Aboriginal people.

Another major barrier in terms of expense is the cost of pharmaceuticals. This has been a major ongoing issue in the Kimberley, with recurrent stories of people running out of medications or not obtaining them in the first place because of the expense. Many people do not have a Health Care Card (HCC), even though they qualify for one. Even if they do have a HCC they may not have the $3.20 (or multiple thereof when more than one medication is required) and hence have to wait for pension day to pay for medication, or their cash strapped community organisation has to pay. Health care services have had various means of getting around these difficulties but the cost of medication is a continuing problem. For chronic diseases such as diabetes and hypertension consistent medication is essential and very cost effective (Couzos & Murray, 1998). With good care renal damage can be prevented or significantly delayed, a very important cost saving. Yet problems with relatively small expenses become major barriers to this continuity of care. Non-PBS medication, which is required for a number of significant conditions, is very expensive for individuals and the cost can be a real barrier to receiving appropriate treatment (for example most treatment for fungal infections, including ringworm and thrush, has not been covered by PBS for several years).

On occasions health staff have focused on encouraging 'personal responsibility' by working very hard at getting people to pay for medications. However, as stated in the Keys Young report, the most appropriate time to teach self reliance is not when people are ill and have no money (Keys Young, 1997). Paracetamol tablets cost around one cent each purchased in bulk by health care services, yet health staff in one small town stated to the consultant that getting people to buy boxes of paracetamol from the supermarket at over twenty times this price was a significant step towards self reliance. Community development requires a much more comprehensive approach. Devoting time and energy to saving small sums on medications such as paracetamol saves little money and can have a significant negative impact on relationships between Aboriginal clients and health staff, potentially leading to worse health outcomes.

There has been some recent progress on access to medication, with the extension of Section 100 and the cooperation of the Pharmacy Guild, however cost is still an unnecessary barrier to accessing required drugs.

The above barriers to health care are a function mainly of geography and poverty, however there are a number of equally or more serious barriers that can apply to Aboriginal people across the Kimberley. These barriers relate to the interaction between Aboriginal people and non-Aboriginal health care providers. Unfortunately there is a high turnover of non-Aboriginal staff in most health services in the Kimberley and this is particularly a problem in hospitals. The attitude of many staff in hospitals has long been documented as a major barrier to improved health care with reports documenting problems ranging from insensitivity and

ignorance to outright racism (Dodson, 1991; Gray & Atkinson, 1990; National Aboriginal Health Strategy Working Party, 1989)

An illustration of the extent of ongoing problems in this area is that members of the consultancy team have been told on a number of occasions by Kimberley Aboriginal people how good some of the non-Australian professional staff are. It is reported that, even though these people had not been in Australia very long, they seemed to understand and be sensitive to Aboriginal concerns. This is a telling indictment of some of the non-Aboriginal Australian staff and the attitudes towards Aboriginal people they bring with them.

Insensitive or overt discriminatory treatment is a very important barrier to accessing health care and is a significant factor in many people seeking care from hospitals at a much later stage in illness than is advisable. Even more importantly problems with staff attitudes make it almost impossible to develop good systems to follow up chronic illness. This makes control of diabetes and hypertension, which could delay or prevent coronary heart disease and renal disease, almost impossible.

The other major set of barriers to care for Kimberley Aboriginal people is access to specialist services outside the Kimberley. These are extensions of the problems described above in terms of geography and staff attitudes. Aboriginal people tend not to like being in Perth and, in addition, many Aboriginal people, especially older people, have a great deal of difficulty adapting to Perth. Kimberley Aboriginal people need considerable additional support if they are to receive maximum benefit from the health services in Perth.

The above section is only a brief review of some of the more important barriers to Aboriginal people accessing health care. Processes to address many of these barriers to good health services for Aboriginal people are included under the principles relating to different levels of service and recommendations below.

Chapter 5 – Recommendations for the Kimberley Regional Aboriginal Health Plan

This chapter outlines the rationale for the recommendations, based on the information provided in previous chapters, and lists the recommendations on which it has been agreed on-going planning in the Kimberley should be based. Recommendations concerning resources, major priorities, principles and processes that should be followed and an outline of proposed evaluation strategies to assess the Kimberley Aboriginal Health Plan are provided.

Introduction to Recommendations

There are two distinct aspects to planning for Aboriginal health that need to be addressed. These are:

- Underlying issues that contribute to ill health. These need a comprehensive approach by all agencies involved; and
- Health services to address the immediate and medium term needs of people who already have or are likely to develop health problems.

It is important that health services that address the second dot point above also make a significant contribution to the underlying issues and address prevention, both in the narrower health promotion sense and in the broader community development sense.

The first section briefly covers some of the essential long term strategies to address underlying issues, however details of the specific action required will need to be developed by partnerships between the agencies involved at the local level.

In the section on health services the principles on which this plan is based (these principles were agreed to by the Steering Committee at a meeting on the 11th of December 1998) are outlined first. This is followed by priorities for various areas of health service and concludes with a discussion of mechanisms for continuing and evaluating the planning process.

Plans should not be seen as recipes and need to evolve continually over time. One of the most important aspects of planning is that mechanisms to continue the planning process and to ensure collective decisions on priorities can be made at regional and district level are put in place and acted upon. Recommendations as to how this should happen therefore form a third section of this chapter.

Finally the chapter concludes with recommendations that begin to address the need for evaluation. This area will require on-going development as the plan is implemented.

Underlying Issues

As stated by many reports in the past Aboriginal health is not just a series of diseases that require treatment but is inextricably bound up with historical, cultural and social circumstances. Improving the underlying factors that lead to good health therefore requires action in a wide range of areas.

The principles of Aboriginal community control and partnerships between Aboriginal and mainstream agencies have been formally recognised by governments of all political persuasions over many years as being the best way to improve the circumstances, and hence the health, of Aboriginal people. These principles have most recently been confirmed by both State and Federal Health Ministers in the Framework agreements on Aboriginal health, and

the bilateral agreements that have come out of this process. What has often been limited has been action on the ground in the regions affected.

These principles need to be kept firmly in mind as the implementation of the Kimberley Aboriginal Health Plan proceeds.

Community development

A larger focus on community development is strongly recommended in a range of reports to reduce the problems discussed in the first part of this report. Self determination and empowerment are the cornerstone of health improvement and are the focus of a number of Kimberley organisations. Unfortunately these organisations are often working with insufficient resources. In the absence of adequate resources for community development as well as for needs such as education, training and employment, significant long term improvements in health will be difficult to achieve.

It is good community development that in the medium to long term is going to be most effective in reducing problems such as suicide, domestic and other violence and problems with substance abuse.

While central components of community development are outside the control of health services, and the funding agencies for health services, health services can still make an important contribution to community development. As discussed elsewhere in the report this includes fostering the increasing involvement of Aboriginal people and improving Aboriginal community control in both decision making and service provision. In addition health care service providers need to be involved in lobbying for the resources necessary for health in the broader sense, not just for the provision of health care to those who are already in ill health, important though this is.

Often community development does not appear to have been considered sufficiently when developments are proposed and planned, resulting in many missed opportunities for local Aboriginal communities.

1. **It is recommended that the community development consequences of all planning decisions in the Kimberley be given a high priority by government departments and agencies across all levels of government when making decisions.**

As part of the process of community development, limited general recommendation in the areas of Education, Employment and Training, and Community Infrastructure are presented below.

<u>Education, training and employment</u>

Real employment is one of the central components to long term improvement in the overall health of Kimberley Aboriginal people. There is already a considerable amount of employment in the Kimberley, unfortunately most of the employed are non-Aboriginal migrants to the region and many of these people come to the region for at most a few years and then leave.

The most common form of Aboriginal employment is essentially a ‘work for the dole’ scheme - through the Community Development Employment Program (CDEP). While CDEP has some tangible benefits, and is a demonstration of the commitment of Aboriginal people to improving employment, it was only ever intended to be part of a strategy to improve the well being of Aboriginal people. In many ways CDEP is more like a welfare payment than genuine part-time employment; for example eligibility is dependent on spouse income. This

scheme is in addition to other training and employment activities and is not intended to act as a substitute for the usual responsibilities of government and other agencies.

Long term strategies are required to reverse the current pattern of employment in the Kimberley, and to employ significant numbers of long term Kimberley residents in the range of employment available. Many of the jobs potentially available, and many of the most important positions in terms of Aboriginal health, require considerable training emphasising the need for greater efforts in education and training as part of these strategies.

Apart from the employment benefits of education, a reasonable standard of education is essential if people are to have the option of being involved in many aspects of modern Australian society. Education in the broad sense is also essential to personal empowerment, reducing alienation and contributing to developing a sense of personal control over one's life. A new collaborative approach to the education needs of Kimberley Aboriginal people is therefore also an essential component of long term and permanent improvement in Aboriginal health.

2. **Recommended general strategies to improve education and training include:**
   - **increased Aboriginal community involvement in schools and with the aims of education;**
   - **cooperative efforts to ensure high levels of attendance, especially in early school years when many of the problems develop (and could be identified and remedied more easily);**
   - **talent identification and a range of bridging programs to link Aboriginal students with post compulsory educational institutions;**
   - **programs to link education to possible future employment using Aboriginal role models;**
   - **use of the Community Development Employment Program (CDEP) as a development program and a prelude to real jobs, but not as a low cost substitute for training or employment that is the responsibility of other agencies;**
   - **Government agencies fully implementing existing Aboriginal employment strategies where they have been developed; and**
   - **the provision of increased numbers of traineeships and a range of other on the job education and training programs by employers, especially government funded employers, providing services to Aboriginal people and communities.**

Unfortunately some of the messages from government on education over recent times have been mixed. Recent changes to Abstudy have had a detrimental effect on access to training for Aboriginal Health Workers in the Kimberley (and on access to tertiary training in other areas) through the limitations on block release programs and the restriction of a number of other benefits previously available. While some of the changes in terms of student support have been positive the net effect of all the changes to Abstudy on education for Kimberley Aboriginal people has undoubtedly been negative.

3. **It is recommended that the Commonwealth Government urgently review, in conjunction with training providers and tertiary institutions:**
   - **funding (including Abstudy) for students in AHW courses and develop an appropriate mechanism to ensure that students can be funded to complete their training in the minimum time; and**
   - **support (both financial and other) for Aboriginal students from the Kimberley to pursue post secondary education.**

Employment across a range of industries is obviously of the utmost importance. Areas where there is every reason to expect more employment for local Aboriginal people include service industries such as health care and education, as well as the important industries of tourism and

mining. A range of strategies for all these industries is required and should be a focus of government and non-government agencies.

4. **It is recommended that all government funding for services in the Kimberley be tied to the implementation of appropriate employment strategies (including addressing training needs) and be at least partially dependent on performance indicators based on achieving agreed targets for Aboriginal employment at regional, district and community level.**

Health services in particular need to recognise the importance of the employment of local Aboriginal people to long term improvements in Aboriginal health and to the provision of appropriate services to the majority of clients. Health care services should lead the way on the employment issue. While the Aboriginal Community Controlled Health Services encourage and foster Aboriginal employment, the State run health care services employ relatively few local Aboriginal people. The Aboriginal employment that does exist within these services consists of a small number in positions such as cooking, cleaning and general maintenance, a small number of AHWs and very few indeed in other professional positions.

5. **It is recommended that mainstream health care services (and all health care services receiving Government funding) implement, and be accountable for, stated WA policy positions of increased Aboriginal employment at all levels in the health industry. Regional and district monitoring of Aboriginal employment is essential, in addition to statewide reporting (as recommended by the Royal Commission into Aboriginal Deaths in Custody).**

   Strategies that health care services should develop to achieve this recommendation include:
   - **expanding the skills and making greater use of AHWs for a wide range of tasks, and as a consequence reducing the numbers of some other professional staff (for example some tasks currently performed by nurses could readily be performed by AHWs, others could be performed by AHWs if they had suitable additional training, while some tasks would need to continue to be carried out by nurses – similar principles apply to other professions);**
   - **developing partnerships with training bodies (Aboriginal health schools, TAFEs, Universities including the new Combined Universities Centre for Rural Health) to train local Aboriginal staff for as many as possible of the required positions so that by 2020 a realistic proportion of professional staff across all areas are Kimberley Aboriginal people;**
   - **ensuring that less skilled positions are mainly filled by Aboriginal people (at least in proportion to the utilisation of the service by Aboriginal people, for example if 90 per cent of inpatients are Aboriginal in a particular hospital then 90 per cent of inpatient service positions should be filled by Aboriginal people); and**
   - **goals and targets for Aboriginal employment in health service delivery in the Kimberley region should be agreed and regularly monitored at both a district and regional level.**

Community infrastructure

To maintain good health, as a minimum, people must have access to adequate shelter, plentiful clean water, safe waste disposal systems, reliable power supplies and an appropriate community environment. In many areas these very basic needs are still a long way from being met. The very large infrastructure needs of Kimberley Aboriginal people need to be addressed if other aspects of community development, including education and employment programs, are to be effective in improving the health of Kimberley Aboriginal people.

While there may have been a number of examples of inappropriate provision of services in the past, and on-going problems with maintenance, the main problem has been, and still is, an absolute insufficiency of resources. Even if there had not been a dollar misspent there would still be large numbers of Kimberley Aboriginal people living in poor conditions and living in communities without adequate community facilities.

Evidence in this report indicates a minimum deficiency in housing for Aboriginal people in the range of 700 to 1000 three bedroom dwellings. This is not allowing for replacement of existing housing and does not include the need for housing to match the annual population growth of the order of 300 people, which at an average of 4.5 people per house would equate to an additional 70 houses per year. In addition many of the houses already occupied are either substandard and need to be replaced, or require substantial maintenance to bring them back to an acceptable standard. In 1999 only 48 houses for Aboriginal people are planned, thus the deficiency in Aboriginal housing appears to be growing.

It is beyond the scope of this report to prioritise infrastructure needs but it is important to acknowledge the very large amount of work still required in this area. All bodies represented on the steering committee need to recognise the extent of the infrastructure needs, and lobby for the very substantial financial investment required in this area.

6. It is recommended that:

- **every year for the next five years in the Kimberley over 300 good quality houses be funded and built, along with the associated infrastructure of power supply, water and waste disposal;**
- **all agencies providing housing ensure that adequate provision is made for maintenance (and the larger cost of maintenance in remote areas);**
- **a high priority be placed on community facilities, including sports and recreation, arts and culture and adult learning, especially in the most remote and otherwise disadvantaged communities;**
- **consideration be given to co-location of a range of services where appropriate;**
- **local level involvement in decisions concerning community infrastructure be given a high priority; and**
- **priorities for funding be determined and agreed at both district and regional level and then supported by all agencies when asking governments for funds.**

A range of concerns about variations in the responsibility different local government authorities take for Aboriginal communities, and the fact that some by-laws and regulations at both a local government and state government level do not always apply in some Aboriginal communities, were raised during the development of this plan.

7. It is recommended that:

- **Aboriginal communities have the same access to local government services as towns or settlements that are not Aboriginal communities, based on population and need;**
- **local government by-laws or equivalent standards be applied to all housing and infrastructure in Aboriginal communities;**
- **governments at all levels do not use government exemptions to avoid funding to meet health standards that would be required if the owner were not a government agency (for example using crown privilege to avoid action that would be required of a private owner); and**
- **ATSIC/AAD initiatives, which encourage Shires to enter into Memorandums of Understanding with Aboriginal communities, be promoted across the region. These agreements should stipulate the level and standard of services provided by the Shire to that community.**

Community supports to maintain infrastructure and reduce environmental health hazards are very important. A range of training and employment for Aboriginal Environmental Health Workers (AEHWs) has been in place in one form or another for over a decade, unfortunately there are still serious deficiencies in appropriately paid employment and support for AEHWs. A number of agencies work with AEHWs but they are thinly spread and often are forced to rely on CDEP funding.

8. **It is recommended that:**
   - **ATSIC, OAH, Commonwealth Health and Aged Care, Health Department of Western Australia, Aboriginal Affairs Department, Local Government and KAMSC work together to ensure fully funded AEHW positions (including travel and equipment) are provided in all areas; and**
   - **that AEHW training be provided routinely in the Kimberley.**

Health Care Services

Given the level of ill health amongst the Kimberley Aboriginal population it is important that excellent quality care is available to address this need. A number of areas of health care services need to be addressed to ensure this.

General

A number of general issues apply to all health services and variations on these have been repeatedly recommended in many reports over recent decades. In particular working in partnership with Aboriginal organisations and communities has been widely recommended. There has also been frequent criticism of decisions by government agencies that appear to have been made without consideration of the broader implications in terms of community development.

9. **It is recommended that in all areas there need to be partnerships between the community sector (represented by KAMSC and other Aboriginal Community Controlled Services), the State health services (represented by Kimberley Health Services and the Office of Aboriginal Health) and the Commonwealth Department of Health and Aged Care Services. Such a process was recommended in the National Aboriginal Health Strategy ten years ago, has recently been confirmed in the Framework Agreement on Aboriginal Health and the bilateral agreements that have been signed more recently, but has yet to eventuate in many areas.**

10. **It is recommended that the community development consequences of possible health service planning decisions be given a high priority when making these decisions.**

Primary Health Care

The meeting arranged by the World Health Organisation and UNICEF at Alma Ata in 1978 identified Primary Health Care (PHC) as the major plank of the 'Health For All' strategy and defined it as:

> 'Essential health care based on practical, scientific and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that can be maintained at every stage of development in the spirit of self-reliance and self-determination. It is the first level of contact of individuals, family and community with the health system. Primary health care is based on:
> - the economic and social realities of a community, and the country;
> - the existing knowledge of the community, its health problems and the most appropriate health services which address the main health problems in the community, providing promotive, preventive, curative and rehabilitative services.'

Principles of Primary Health Care

11. It is recommended that the following principles for PHC services, grouped under headings related to Accessibility, Acceptability, Affordability, Appropriateness and Community participation be agreed to and acted upon.

To be suitably accessible PHC services in the Kimberley should:
- **be located in the community for which the service is provided;**
- **where communities do not have a locally based service, visit the community rather than have the community visit distant services;**
- **be equitably distributed on the basis of population, degree of difficulty in access to major centres and health needs;**
- **be available at times that suit community needs; and**
- **be flexible to changes in community circumstances.**

PHC services in the Kimberley need to have appropriate staff to be acceptable, this includes having:
- **Aboriginal staff in as many positions as possible across all levels of employment within the service and a process to increase the number of Aboriginal staff over time (this will need to involve arrangements for the provision of training, including training for a range of health professions, for Kimberley Aboriginal people);**
- **staff of both genders; and**
- **staff who are culturally safe, which is taken to mean having a good understanding and empathy with local Aboriginal community culture as well as an understanding of the impact of social conditioning (ethnocentrism, prejudice, stereotyping) and the health care environment (social context, institutional policies, power inequalities etc) on quality of health care.**

Health care services should be affordable and
- **cost should not be a barrier to accessing PHC services. This includes the cost of medication, transport and accommodation as well as the cost of the services themselves.**

To be appropriate to the needs of the population being served PHC services in the Kimberley need to:

- **utilise facilities that are designed for the delivery of PHC services. This means having facilities that make clients feel comfortable and welcomed and that have appropriate access for people with disability or illness;**
- **address the actual health needs of the population being served, not just focusing mainly on centrally dictated policy if this does not match the health priorities in the community;**
- **be flexible to meet changing needs on a timely basis;**
- **have staff based outside major centres being generalists rather than specialised to a limited range of functions; and**
- **be provided with appropriate levels of support from specialist workers across a range of areas (including medical specialists, specialists in aged care, mental health, substance abuse etc.). The main role of specialist workers in PHC should be to provide training and support to empower generalist PHC staff and not to take over primary responsibility for services.**

PHC services in the Kimberley should ensure full community participation.

- **An important goal of all PHC services should be to increase community participation in the delivery of PHC. This should involve participation at all levels - inception, planning, prioritising, direct provision of services, evaluation and decision making on PHC services provided for the community. Appropriate community participation involves Aboriginal community control of PHC services wherever possible.**

Essential features that should be part of PHC in the Kimberley

12. As a minimum it is recommended that PHC services will:

- **have an appropriate mechanism to ensure community involvement as above;**
- **a capacity to provide appropriate services in the communities in which people live;**
- **provide community based health care including services for common acute and chronic diseases and provision of appropriate care for special groups including people with disabilities and older people;**
- **have procedures for addressing emergencies in a timely manner; and**
- **provide a comprehensive range of preventive health care and related services as part of an integrated package. This would include, for example, immunisation, screening for disease, health education, dealing with environmental health issues, drug and alcohol issues and other issues of concern to the community. Community screening strategies should be scientifically sound and subject to the consent of appropriate community bodies and individuals.**

The interface between PHC and other levels of health care

Integration of services / continuity of care

One of the most important aspects of health services is continuity of care for the clients of the health service. To this end it is important that the different elements of PHC are integrated as far as possible to ensure consistent care from health care providers. This means that health promotion, primary medical care, infectious disease control, community based prevention of non-infectious disease and community chronic disease programs (including specialist services such as community mental health and renal dialysis programs) should, as far as possible, be provided as part of an integrated care process (as against simply co-locating some primary and secondary care services).

13. As far as possible the full range of PHC services described above should be provided by the one agency to reduce the potential for inter agency problems, people missing out on services and people having problems dealing with multiple agencies.

Integrating primary medical care with hospital care without integrating other aspects of community based care is likely to widen the gulf between primary medical care providers and the community thus compromising the acceptability of PHC (see under Hospital care). In addition the imperatives of urgent hospital based care have the potential to draw services away from more productive but less acute long term initiatives.

14. It is recommended that there be an operational separation between inpatient/secondary care and community-based primary care.

Contracting out

One mechanism that can potentially improve the integration of PHC services is for Government agencies to contract out the provision of services to community based PHC providers. However it is important that when this occurs it does so with the objective of improving PHC services.

The Framework Agreement in Aboriginal Health commits governments to increasing expenditure on Aboriginal health care. Contracting out is designed to improve the efficiency and effectiveness of services; these improvements need to result in improved outputs rather than reduced expenditure.

15. It is recommended that contracting out in Aboriginal health should have neither the aim nor the effect of cutting government expenditure on Aboriginal health.

Emergency health care and transport

Emergency health care and transport are areas of great importance to the community and areas where there is considerable dissatisfaction. To reduce problems, and the perception of problems, clear protocols and procedures need to be in place in all communities and in all health services for the provision of emergency care. Apart from being able to deal with emergencies for individuals, communities also need to be prepared for major emergencies that may affect all of a community, or a large number of people within a community. This is a function that the State Emergency Service has an important role in.

16. It is recommended that emergency procedures be well documented and adhered to, including:

- **arrangements for handling emergencies 24 hours a day including assessment and transfer from local communities to health services, transfers between local health services and the nearest hospital, transfers to larger hospitals in the region and transfers to tertiary care, either in Perth or Darwin;**
- **designated people to handle emergency calls and designated lines of communication;**
- **adherence to the general principle that advice concerning the need for evacuation will be taken from the person or persons present at the site where assistance is needed, unless there is good evidence to the contrary, and this evidence needs to be documented;**
- **the development and use of duplicate forms to record requests for health care assistance. These forms to be completed by all health and emergency care services (both community based and hospital services) for all phone calls or**

other requests for medical services for a person not present at the health service at the time of the request; and

- **the development and regular updating of community emergency plans to address major emergencies, including emergency evacuation plans. These plans need to be developed collaboratively between Aboriginal communities, local Aboriginal community organisations including health services and the State Emergency Service. The Department of Family and Children's Services, the Kimberley Health Services, the Royal Flying Doctor Service and other emergency services need to be involved in developing and updating these plans.**

17. **It is recommended that there be appropriate and rapid provision for acute transport. This needs to include the principles:**
    - **that the ability to pay should not affect access to transport. In particular fee for service ambulance retrieval is a barrier to many Aboriginal people accessing ambulance services, is not an appropriate model for service delivery to Aboriginal populations in the Kimberley and needs to be changed;**
    - **the availability of appropriate vehicles for road retrieval. This includes the need for suitably designed four wheel drive vehicles in all locations;**
    - **the timely availability of air evacuation services with access to air craft that best suit the needs of the communities. This may include current RFDS aircraft, smaller aircraft for small strips in newer communities and the capacity to use helicopters where travel to the nearest airstrip is impossible or will not be timely;**
    - **suitable airstrips and/or barge landings for emergency evacuation should be regarded as essential infrastructure for remote Aboriginal communities in the Kimberley region; and**
    - **that further joint planning for the on-going monitoring and future planning of emergency health service delivery be carried out between the Kimberley Regional Planning Body and the Royal Flying Doctor Service.**

18. **It is recommended that for non-emergency transport of staff the following apply:**
    - **wherever possible, visiting clinical services should be provided by staff from the closest centre to which the population being served relates, rather than from the regional centre;**
    - **visiting health services be transported using a combination of air and road depending on the local needs and conditions and local health services should have control over the appropriate timing and mode of transport for staff to visit communities; and**
    - **the future role of the RFDS in the provision of non-emergency care be reviewed.**

19. **It is recommended, for the non-emergency transport of patients, that first and foremost health services need to acknowledge a duty of care to their patients, including, where necessary:**
    - **the provision of escorts;**
    - **acceptable arrangements for meeting patients on arrival at their destination (including formal arrangements with airlines to provide assistance where patients do not require escorts); and**
    - **travel arrangements that take into account the circumstances of the patient and their community (including mode of transport, time of day, condition of patient, degree of infirmity, language/cultural barriers, presence of children or babies, and need for accommodation).**

Hospital Care

General principles for provision of hospital services

Many of the principles of hospital care are similar to the principles applied to PHC above and recommendations on this are listed below.

20. It is recommended that the following principles for hospital services, grouped under headings related to Accessibility, Acceptability, Affordability, Appropriateness and Community participation be agreed to and acted upon.

To be accessible hospital services for Kimberley people should be:

- **located as close to the communities for which the service is provided as is practical;**
- **equitably distributed on the basis of population and health needs;**
- **available 24 hours per day; and**
- **flexible to changes in community circumstances.**

To be acceptable hospital services for Kimberley people need to have appropriate staff, this includes having:

- **Aboriginal staff in as many positions as possible, at all levels, and a process to increase the number of Aboriginal staff over time (including a process to address training needs);**
- **staff of both genders;**
- **staff who are culturally safe (as outlined under PHC above) with a good understanding of, and empathy with, local Aboriginal community culture;**
- **Aboriginal liaison staff to assist with problems which may interfere with hospital care. This will include, among other things, communicating with family and the PHC staff not involved in hospital care, assistance with accessing money from accounts and assisting people the patient is responsible for (children, older relatives, other family members etc.) to ensure suitable arrangements are made for them while the person is unable to care for them;**
- **flexible visiting arrangements and easy telephone access; and**
- **sensitivity to particular Aboriginal cultural needs (eg food or avoidance taboos, initiation law-related sensitivities).**

To be affordable hospitals providing services to Kimberley Aboriginal people need to have:

- **mechanisms to ensure that the cost of care and the associated costs of care such as medication, transport and accommodation are not barriers to accessing hospital services need to be put in place.**

To be appropriate hospital services for Kimberley people need to:

- **utilise facilities that are suitably designed for the community they are providing services for. This means having facilities that make clients and visitors feel comfortable and welcomed and that accommodate the particular needs of Kimberley Aboriginal people (for example access to outdoor areas, ready access to a telephone to keep in touch with family and community, support for family from distant communities);**
- **aim to keep patients who need to be in hospital in a suitable hospital as close to where they live as possible;**
- **address as far as possible the actual health needs of the population being served;**
- **be flexible to meet the changing needs of the population on a timely basis;**
- **have staff with a wide range of skills to meet the differing requirements of differing health problems; and**
- **for specialist services not available routinely in the particular hospital, be provided with appropriate levels of support from specialist workers elsewhere.**

Mechanisms to promote community participation need to be implemented. This includes:

- **appropriate mechanisms to encourage and increase community involvement in decision-making in hospital services to ensure that hospitals are responsive to the needs of the populations they serve. Boards or governing body composition should, as far as possible, reflect the pattern of consumption of health care services.**

Principles for differing levels of hospital care

Local community hospitals
(all six Kimberley hospitals)

Local community hospital refers to the hospital in the town closest to where a person lives – for example Derby for people from Mowanjum, Halls Creek for people living in Halls Creek or in Balgo.

21. For in-patient Care in Local Community Hospitals it is recommended that:

- **to improve integration of services and continuity of care, the practitioner providing PHC for a person should wherever possible, provide services at the local community hospital;**
- **where care is not being provided by the PHC provider, care should be transferred back to the PHC provider as soon as practicable; and**
- **hospitals should have designated staff to ensure appropriate liaison support, both to families and to patients' PHC providers, is provided.**

Hospitals should have accountable arrangements for discharge planning including ensuring that:

- **realistic and workable travel arrangements are made that will get the patient from the hospital door to their house;**
- **discharge medications are arranged prior to discharge; and**
- **appropriate follow up care by the usual PHC provider is arranged prior to discharge.**

Kimberley referral hospitals
(Derby, Broome and Kununurra – non local patients)

Patient who have been transferred from their community to a hospital a long way away often require additional support. In addition maintaining continuity of care with PHC providers is more difficult as they will usually not be directly involved in patient care in hospital. Discharge is often a complex process of transfer through two or three hospitals and one or more community service.

22. It is recommended that, as well as the principles listed above, hospitals in this category need to provide additional resources:

- **to ensure good communication with the patient's family, community and PHC providers (Aboriginal Liaison Officers, medical, nursing and AHW staff all need to be involved);**
- **to ensure the needs of patients from different areas within the Kimberley are met;**
- **to ensure discharge processes, through the range of services that are involved work smoothly; and**

- **comfortable, homely and well supported accommodation options for patients or carers (especially women awaiting delivery or parents of children with serious illness).**

Out of Kimberley referral hospitals

This generally means Perth or Darwin tertiary care hospitals. Hospitals outside the Kimberley have similar responsibilities to hospitals within the Kimberley and many of the principles listed above apply. However in addition the recommendations below apply.

23. It is recommended that the nearest appropriate service that can meet the likely needs of patients should be used. This should include the use of Darwin Hospital services for East Kimberley patients where appropriate.

In tertiary hospitals communication with the range of people involved in a patient's care is even more important. Thus the role of liaison staff is also even more important and they need a wide range of skills and experience. A single person will rarely have all of these skills and it is unrealistic to expect an Aboriginal Liaison Officer in a Perth Hospital to be able to address all these issues for people from all over the State.

24. It is recommended that the process of liaison for people from areas such as the Kimberley should involve an integrated liaison service across Perth tertiary hospitals to ensure both adequate support for people working in these positions and adequate expertise across the range of requirements including:
- **empathy and understanding of Aboriginal people from a very wide range of locations and circumstances;**
- **understanding of specific aspect of the culture of patients from different areas;**
- **recognising cultural protocols for issues such as consent for medical procedures (for example the person responsible under Aboriginal cultural protocols may not be the person who is asked to sign the form by the hospital);**
- **understanding the circumstances in the person's community, the local hospital and the referring Kimberley hospital; and**
- **understanding the processes of the tertiary referral hospital.**

25. There should be a mechanism to involve Aboriginal people from the Kimberley in planning, monitoring and evaluating liaison services based in Perth.

Priorities for extra resources for health services

As outlined above, the long term improvement of health is in large part dependent on action in many areas outside the traditional role of health care services. Until these underlying issues are addressed more fully there will be a continuing and increasing need for health care services amongst Kimberley Aboriginal people.

Access to appropriate health care services is a matter of equity and citizenship entitlement. In addition, if health care services maintain a focus on primary and secondary prevention then they have the capacity to make a significant difference to the health and happiness of Aboriginal people in the Kimberley. They also have the potential, if well planned, to make a small but important contribution to addressing the underlying causes of Aboriginal ill health.

Funding

There is a clearly demonstrated need for increased funding from a range of sources, with perhaps less than one third, and at best half the amount of funds realistically required actually being spent on PHC in the Kimberley at present. In addition the distribution of existing funding needs significant changes.

Greater access to Medicare funding is the only realistic way of increasing recurrent Commonwealth funding for PHC services in the Kimberley in the short term.

26. It is recommended that suitable hospital employed doctors provide services in ACCHOs in Kimberley towns (beginning with Derby, Halls Creek and Fitzroy Crossing) and that the increased Medicare funds be used to employ additional health staff.

The potential additional Medicare funding from town based services is substantial. After five years of this process it should be possible to net about $1 million a year if 8 or more full time positions were transferred to the community sector across the Kimberley. While this would be a valuable contribution it would only make up a relatively small amount of the overall shortfall in resources. There is a large need for capital funding and a large need for recurrent funding. Mooney has reported that health services for Aboriginal people in remote areas need three to five times the funding that non-Aboriginal populations require. Evidence in this report supports the need for funding for primary health care of the order of three times the existing funding for these services. To provide adequate services in more remote communities is even more expensive. As a realistic beginning the Kimberley Aboriginal Health Plan requires a doubling of recurrent funding for PHC services as soon as possible.

27. It is recommended that additional resources be sought from State and Commonwealth Health to implement the plan. As a minimum first step total recurrent funding for PHC (including Medicare funding) needs to be increased by $2 to 3 million a year each year to a total of a 100 per cent increase or an additional $13 million per year at the end of 5 years. Future needs for recurrent funding should be formally reviewed before the end of this five year period.

Primary health care services also have an urgent need for substantial capital resources, although the process of developing this plan did not allow time to make detailed estimates of the actual cost involved. A large number of communities have inadequate facilities, both in terms of clinics and housing for staff, and the KAMSC Health School is in urgent need of increased space and resources, particularly if the number of AHW positions is to be trebled as recommended below.

28. It is recommended that substantial funds for capital are provided in the short term for:

- **clinics;**
- **accommodation and facilities for staff; and**
- **training facilities for Aboriginal Health Workers through the KAMSC health school in both the East and West Kimberley.**

29. **It is recommended that where suitable facilities or suitably trained staff are not available immediately then, in the short term, some of the increase in recurrent funding should be used for capital purposes.**

Staff

Staffing should be planned on the basis of need and staff should be located as close as possible to the people they serve. Targets need to be set for ideal staffing in each area at both a regional and a district level. While there are difficulties recruiting and retaining staff in remote areas, if the positions do not exist they will never be filled. Clearly suitable support structures need to be put in place to assist with the recruitment and retention of all staff, once desirable levels of staffing have actually been set.

30. **It is recommended that the following goals for staff/population ratios be agreed to (based on recommendations by Wakerman *et al* for Central Australia):**
    - **one AHW to every 100 Aboriginal people;**
    - **one Community Nurse to every 250 Aboriginal people (plus a realistic number for public health services for non-Aboriginal people) ; and**
    - **one general practitioner for every 600 Aboriginal people (also allowing for one GP for every 1200 non-Aboriginal people).**

31. **It is therefore recommended that the overall target for increased staff numbers should be:**
    - **100 additional trained Aboriginal Health Workers (and this will need to increase by at least three a year just to cope with the natural population increase);**
    - **12 additional community based nursing staff (increasing by at least 1 every year to cope with population increase); and**
    - **10 additional general practitioners (increasing by at least one every two years to cope with population increase).**

32. **In addition it is recommended that:**
    - **realistic interim targets for levels of staff be developed by the district and regional planning bodies;**
    - **the needs for increased allied health services be included; and**
    - **some expansion of Kimberley based and visiting specialist services be considered once the need for increased primary health care services is addressed.**

For example expected staff for the Balgo area based on these ratios would be for 10 trained Aboriginal health workers, 4 registered nurses, one GP (with regular additional relief and other support) and appropriate management and administration support. An interim plan would be for 3 trained Aboriginal health workers and 5 trainee Aboriginal health workers, 6 Community Nurses (until the number and level of the training and experience of the Aboriginal health Workers could improve) and one doctor with locum relief for leave.

Aboriginal Health Workers

Problems with conditions of employment, training and support for Aboriginal Health Workers (AHWs) will make it difficult to increase numbers unless improvements occur.

33. To increase the number of Aboriginal Health Workers employed it is recommended that:

- **the conditions of service for AHWs are improved by providing suitable accommodation, suitable remuneration, an appropriate career structure and other conditions of service for what is generally a very demanding role;**
- **training for AHWs is provided as close to home as possible, in the Kimberley in block release mode through the campuses of the KAMSC Health School;**
- **the KAMSC Health School is appropriately resourced to provide the increased training required in all major centres in the Kimberley;**
- **where suitable qualified AHWs are not available to be appointed, suitable people be employed as trainee AHWs, and supported to complete AHW training in block release mode as above (see also Recommendation 3 above);**
- **AHWs are supported more thoroughly on the job, including being employed to work with other AHWs and having adequate support and supervisory staff at a ratio of no more than 4 AHWs to one supervisor/support staff (preferably senior well trained AHWs as supervisors, but in the interim while these staff are being developed it will not be possible for all supervisors to be AHWs); and**
- **the State Government act urgently to provide legislative protection for AHWs. This would permit AHWs who have appropriate training to carry out essential tasks such as dispensing medication and following agreed protocols, under the general direction of a doctor.**

Community registered nurses

There are some deficiencies in nursing staff numbers, but even more important are the issues of high staff turnover, hence lack of continuity of care, and maldistribution with most nurses based in the larger towns rather than where the people they serve live. In the presence of well trained and resourced Aboriginal Health Workers the number of nurses required may only need to be increased slightly to be adequate, but in the interim a significant number of additional nursing staff are required to meet the immediate needs of remote communities.

34. It is recommended that all communities or clusters of communities with an average population of over 200 people have a full time community nurse and, where the population is over 375, two resident nurses. These nurses should, wherever possible, be based in the community rather than the nearest town.

35. It is recommended that further steps to improve the conditions of service of remote area nurses to encourage nurses to stay longer term. These include:

- **improving living conditions for nurses, including standard of accommodation, location of accommodation in relationship to the clinic and the community they work in, and the provision of other facilities for staff in district towns;**
- **making judicious use of salary loadings to encourage nurses to stay in the locations that are more difficult to staff; and**
- **appointing an experienced remote area nurse to address the conditions for nurses in remote communities and the smaller towns across the Kimberley.**

Doctors

There are some deficiencies in doctor numbers and more importantly there is a serious maldistribution of doctors, with most based in the larger towns and most of these based at the local hospital. An important part of developing more effective PHC is to increase the number of doctors, and the amount of time doctors spend working in the community outside of hospitals. Kimberley people, like other people in Australia, should be able to see a doctor in a community setting, and be able to see the same doctor on a regular basis for non-urgent conditions.

36. It is recommended that:

- **doctors provide most general practice type services in community rather than hospital settings;**
- **general practitioners employed through hospitals provide PHC services through Aboriginal Community Controlled Health Services where possible (and charge Medicare for the GP services provided);**
- **a full time doctor position be identified for each of the following three areas – Balgo, Bidyadanga, Dampier Peninsular communities (Beagle Bay/One Arm Point/Djaradjin/Lombadina) – and processes to locate the positions in these areas be set in place;**
- **a doctor be located three days a week at Warmun, Kalumburu, in the Fitzroy Valley to the south-west of Fitzroy Crossing and in the lower Fitzroy Valley (Looma and surrounds and communities to the West);**
- **a doctor be located two days a week at other larger remote communities or clusters of communities (for example the Gibb River Road communities, Yiyili, Wangkatjunka and surrounding communities); and**
- **one doctor consistently be responsible for specified smaller remote communities (with allowances for visits by a doctor of the other gender on a regular basis) and that all remote communities with a population consistently over 75 people be visited at least fortnightly.**

Public health services

The State has a responsibility to ensure that public health services, including infectious disease control, the monitoring of other health problems in the region and the fostering of preventive services.

Public health services at a regional level are provided by the Kimberley Public Health Unit (KPHU) in conjunction with the agencies providing health care in the Kimberley. This unit, according to its business plan, aims to provide services for the resident population of the Kimberley in:

- Communicable disease control
- Non-communicable disease control
- Environmental health
- Health promotion (Public Health Unit Business Plan)

The Kimberley Public Health Unit generally has good communication with most services, although there have been some problems in the past.

The thrust of the Public Health Unit business plan is as a provider of consultative services, however it also has a training role (for Aboriginal Environmental Health Workers) and a number of service delivery roles, which range from highly expert public health services to more general services in environmental health and health promotion. In the medium term the Kimberley Public Health Unit should aim to continue to focus on providing expertise and specialist public health consultation services and to devolve the less specialised services it

provides to other providers. This should occur in collaboration with its client agencies as defined in the Business plan.

37. It is recommended that:

- **the Kimberley Public Health unit have formal arrangements to ensure that regular, timely and consistent communication with all health service providers at both management and service delivery levels continues to improve;**
- **in the medium term the functions of the KPHU focus on disease monitoring, the oversight of disease control, the provision of expert public health services and keeping an up to date overview of population and health in the Kimberley; and**
- **when appropriate structures are in place, services that do not fit with these core areas of activity be devolved to local services (for example environmental health workers may be trained by a training organisation and managed by local community organisations, local government or local health services when adequate resources are available with only a consultancy role for the KPHU).**

Specialised services

Services such as Mental Health, Aged Care, Dental Services and Alcohol and Drug harm prevention and treatment services need to be well integrated with primary care services to be most effective. In some settings specialised services appear, to the consultancy team and a number of their informants, to be working in parallel with the PHC service rather than in partnership. Such a process can be counterproductive and invariably leads to some clients having services provided by two agencies, potentially leading to both conflict and inappropriate use of resources, while other clients miss out from both services.

38. It is recommended that in general the role of specialist services (for example aged care and mental health, but also other visiting medical specialist services) should be to:

- **provide support for PHC staff;**
- **training when and where requested;**
- **be a back up to PHC services and as far as possible focus on keeping management with local community organisations; and**
- **provide specialised services direct to clients in collaboration with the PHC service provider, and at the PHC provider's request.**

Aged care

Age care is already working along the lines of the model discussed above. Currently the manager of the regional service is consultative and works well with most groups in the Kimberley, however in the event of a change in personnel there is the possibility of future processes being less appropriate.

39. It is recommended that formal processes to ensure ongoing consultation with the broader community be specified and communicated to all organisations that might potentially work in partnership with the aged care services (this could include specifying mechanisms of community consultation and how people at a district level will be involved in decision making).

The distribution of some high care places from NNNH can meet some of the needs for communities. This is also dependent on the community's ability and wish to have high care beds redistributed to their area. However, the total availability of high care places is inadequate for regional needs.

In terms of needs for aged care beds it is preferable to suggest total number of places for each area, noting flexibility for high care use, rather than specifying care needs. It has been agreed that an increase in, and more appropriate and flexible distribution of, aged care beds in the Kimberley to about 150 places is required (Current Commonwealth approved places – 128, minus 7 unused at Broome, plus 14 State NHT = 135).

40. It is recommended that Aged Care beds in the Kimberley be increased and redistributed by district along the following lines:

Place	Total places	High care flexibility
Broome	**35**	**20**
Derby	**41**	**30**
Fitzroy	**24**	**10**
Halls Creek	**19**	**11**
Kununurra	**22**	**14**
Wyndham	**9**	**2**
Total	**150**	**87**

Wyndham hostel (if desired and feasible) is likely to be a more appropriate setting to take occasional high care people in Wyndham than the current hospital (once the other beds are established).

Mental health

Major psychiatric conditions need specialised support and the advent of increased psychiatric services to the Kimberley has made a big difference in this area with fewer people being transferred out of the Kimberley for these conditions, and more people coping in the community.

Unfortunately, even in a non-Aboriginal setting it is recognised that psychiatric services have a limited impact on suicide and the factors leading to suicide, other self harm type behaviour including substance misuse, as well as family violence, sexual assault and youth-at-risk. Clearly the issue of suicide is a community issue and services in the community working as part of Aboriginal community controlled organisations (both health and other Aboriginal community organisations) are the only services likely to make a significant long term difference. The employment of people in groups of one or two, as health workers or the equivalent, separate from existing organisations is counter productive and unlikely to be as effective as an integrated approach with health services working in conjunction with other community based services.

41. It is recommended that:

- **the regional priority for mental health funding is to develop community based programs, in partnership with, and under the control of, Aboriginal community controlled organisations (for example health services, community councils and other local community organisations), to reduce the risk of suicide and self harm, especially amongst youth and young adults (see section below);**
- **the Northwest Mental Health Services should consist of psychiatrists and other mental health professional staff providing a consultancy service that has a significant role in working with major psychiatric conditions (in collaboration with local PHC service providers) and a supportive role assisting with broader issues at the request of , and in collaboration with, community organisations;**

- **as with Aged Care, the Northwest Mental Health Service should have a role in identifying and supporting the obtaining of mental health resources for community organisations.**

Support mechanisms for staff are very important and the establishment of offices with one or two workers in different towns is likely to lead to problems for the workers. Aboriginal workers, such as those employed to work on social and emotional well being, need to be based in community organisations (be they health organisations or other community organisations) where they are part of a team working on community development issues.

42. It is recommended that:

- **resident counselling services be available in all towns, and regular visiting services be available in all major communities, in the Kimberley; and**
- **counselling services be part of more comprehensive services and not based in small separate offices (as has happened in the past with some programs);**
- **workers with specific counselling roles be part of the health team working in the community or town they are located in, so that they are supported in what is often a very difficult role; and**
- **further involvement of the** Northwest **Mental Health Service in the alcohol and substance use area in the Kimberley should only take place in formal partnership with existing alcohol related services and/or health services (see below).**

Suicide prevention

Youth suicide is a very important concern for Kimberley health services in general, and Broome district communities in particular. Youth are often reluctant to access services, even very culturally appropriate services, and it is not clear which approaches are most productive when attempting to address the very difficult problem of youth suicide. This is further complicated by the apparent tendency for suicides to be grouped, with one often followed by others in the same community within a relatively short space of time. In addition it is often difficult to obtain funding for proposed initiatives to support and improve the well being of youth because proposals do not appear to fit funding guidelines from any of the usual funding agencies.

Local community employment initiatives have a role in supporting youth at risk and some of the current restrictions on access to CDEP may prevent young people from accessing CDEP programs at times of particular vulnerability.

43. It is recommended that:

- **programs attempting to reduce youth suicide, even if they do not fit within existing programs or funding rules, should be given a high priority and funded appropriately by a range of agencies;**
- **community approaches that address youth issues in general are more likely to be effective than programs that focus mainly on self harm type behaviour and communities should therefore be assisted to develop appropriate programs with their young people, involving both youth and elders ;**
- **children no longer in the education system should be able to access CDEP and other training and employment programs and should not be prevented from doing so by age restrictions. This includes synchronising the school leaving age with general CDEP eligibility and providing for exceptions where this is a clear benefit to the child concerned;**
- **PHC services should have access to appropriate counselling services and a capacity to respond rapidly to communities where suicide or self harm has occurred and the community asks for additional assistance;**

- **the Northwest Mental Health Services should provide additional support to PHC services to ensure they can meet this need for rapid response to crises; and**
- **programs aimed at improving the mental health of Aboriginal youth should be evaluated carefully to assess which approaches are more likely to be successful.**

Alcohol and drug services

Alcohol and drug services need to be considered under the following headings:

- Preventive services [incorporating: personal injury and disease prevention (no glass containers, condom provision etc), supply reduction (liquor licensing, dry communities etc) and health promotion services];
- Acute interventions [such as patrols, sobering up shelters and refuges]; and
- Treatment services [including ambulatory counselling services and residential programs].

It is important that alcohol related services work in close collaboration with general health services to address community needs in this area. Preventive and harm minimisation initiatives need to have a high priority as many of these initiatives can have a very useful impact for relatively limited expense.

In the area of treatment services the major problem is that existing treatment services are generally under resourced and have inadequate supports. Therefore in the area of treatment the first priority should be to ensure that existing organisations are adequately resourced and staff have sufficient training to ensure that the service is viable and hence likely to be effective.

44. It is recommended that:

- **a drug use monitoring system be developed and resources be allocated to this development;**
- **all agencies providing substance misuse services be assisted to: conduct audits of their services; provide appropriate training of existing staff or recruitment of new staff; and to address any identified deficits;**
- **the Kimberley Community Drug Service Team's role be monitored and that it continue to liaise closely with community controlled organisations to ensure that there is no duplication of services;**
- **government funding and purchasing agencies provide resources to enable regular meetings between representatives of the substance misuse agencies;**
- **there be regular meetings between those agencies conducting substance misuse projects and the community controlled health services with the aim of facilitating program coordination;**
- **as resources become available, after-care services be linked to all of the existing treatment programs;**
- **the existing substance misuse agencies examine the strategies developed as part of the Derby Aboriginal Alcohol Free Bush Camp/Bush College Project with a view to incorporating relevant strategies into their own programs;**
- **should sufficient funds be available to adequately resource existing services (this includes services that are currently funded by either the State or the Commonwealth Government or both) and to fund new services then the proposed Derby service be supported as a priority;**
- **unless there is a significantly commitment of new funds, proposed intervention projects in Derby and Halls Creek not be funded; and**
- **substance misuse and health care agencies work together to develop appropriate intervention programs aimed at tobacco smoking and the emerging problems of cannabis and other illicit drug misuse.**

Dental services

Preventive dental care in the Kimberley is largely limited to school children and obtaining high quality modern dental care, with tooth preservation, can be very difficult for both financial and logistical reasons. In addition while most communities now have water supplies, not all water supplies in the Kimberley contain adequate fluoride to prevent caries, while others may have naturally excessive levels of fluoride, which can also cause dental problems.

The limited dental services that are available are also unevenly distributed and increased services need to be allocated in the areas with greater unmet need (see Appendix 2 for details of community visits).

There is an urgent need for increased dental services in the Kimberley that is recognised by most services. This should include increased use of AHWs. To do this effectively requires training of AHWs to both identify dental problems and encourage preventive strategies. The KAMSC health school has already begun working in this area in collaboration with the UWA School of Oral Health, and this process needs to be developed further. Ideally dental health care should be provided through Aboriginal Community Controlled Health Services, encouraging the role of AHWs in this area and enabling existing ACCHS transport services to be readily accessible.

45. It is recommended that:

- **a review of the extent of unmet dental health needs across the Kimberley be commissioned as a priority. This survey should include a review of fluoridation of Kimberley water supplies as well as a survey of individual dental health problems;**
- **dental services be provided in ACCHSs in the Kimberley(as they have been in a number of other ACCHSs around the country), with sessional employment of private dental practitioners;**
- **greater use be made of AHWs in promoting dental health and performing preliminary assessment of dental problems;**
- **increased training in dental health for Aboriginal Health Workers be provided (as has begun at the KAMSC Health School) and that this training be developed in conjunction with tertiary institutions training dental health staff; and**
- **the adequacy of the state dental subsidy scheme in providing a minimum acceptable access to dental services for Aboriginal people in the Kimberley be reviewed.**

Capital priorities: PHC facilities and hospitals

PHC facilities

It is a priority to ensure that each town and major community has an appropriate PHC facility providing a range of services. Fitzroy Crossing and Wyndham have no such facility outside their hospital and a number of major communities have inadequate facilities (for example Bidyadanga – although upgraded services are expected soon). In addition the PHC facilities in Broome and Halls Creek are already in need of upgrading and the Derby Aboriginal Health Service, should it gain access to additional medical staff, is likely to quickly outgrow its present facilities.

While it is recognised that many areas need to have upgraded PHC facilities, it was not possible for the consultant to visit most communities and assess the facilities, hence a detailed priority list can not be determined at this stage. Decisions on which areas have the greatest need should be determined by the Steering Committee in consultation with service providers in each area.

46. It is recommended that the Steering Committee (or its successor organisation) develop a list of required upgrading of PHC facilities and prioritise this list based on:

- **population;**
- **access to other facilities; and**
- **standard of current facilities (if any).**

Priorities should not be decided on the basis of which agency provides services in the particular community (for example KHS or an ACCHS).

47. It is recommended that a suitable PHC facility in Fitzroy Crossing and Wyndham and PHC facilities in other major communities with poor facilities be given a high priority as significant improvement in services will be difficult without these resources.

Hospitals

The major priority for improved hospital services is clearly the Halls Creek Hospital. The Aboriginal population in the Halls Creek area is close to the numbers in the Derby area and greater than the population in the Kununurra area yet facilities are the worst of any hospital in the Kimberley. This clearly takes priority over upgrading of the Broome or Derby Hospitals. The Halls Creek District population is increasing and there is no foreseeable reason for it to decline. Halls Creek does not have easy access to other hospitals and the road from Kununurra, the closest larger town, is regularly cut during the wet season.

The second priority in terms of expenditure on hospitals is to build a more suitable facility in Wyndham. This is because the current hospital is extremely expensive to run (although some of this expense still serves wider East Kimberley purposes), is inappropriate for Aboriginal people and is not centrally located in the town. Closure of the existing hospital and opening a new facility which better suits the needs of the community is recommended. Provision of a modern purpose built inpatient facility, with an adjacent PHC facility under Aboriginal community control, should save substantially on running costs and improve primary care services in the town. This could be a joint Commonwealth / State initiative.

Fitzroy Crossing Hospital is old and reaching the end of its useful life. This is the third priority for an upgrade of hospital services, before more resources are devoted to the larger

hospitals in Derby and Broome, which already have reasonable hospital facilities by comparison with the three neglected smaller towns.

48. It is recommended that, in order of priority for Aboriginal Health, the major priorities for hospital buildings are:
- **replace Halls Creek Hospital**
- **more appropriate emergency/Hospital facility and separate PHC facility in Wyndham (with Aboriginal Community Control of the new PHC facility)**
- **upgrade Fitzroy Crossing Hospital**

Services provided by hospitals

Hospital services need to be focussed on the provision of suitable inpatient facilities and 24 hour emergency care, rather than attempting to provide comprehensive general practice services. Within this context hospitals need to focus on the cultural safety of the care they provide at least as much as they should be concentrating on the technical excellence of the medical interventions used.

General

Short term

49. It is recommended that:
- **all hospital staff are provided with on-going local training in culturally safe practice for their Aboriginal patients;**
- **the local Aboriginal community is represented at management level (whether by being a member of the board or if there is no board through other means) as part of a mechanism to ensure hospitals are open to the scrutiny of the local community;**
- **hospitals reaffirm their commitment to affirmative action policies for Aboriginal employment; and**
- **the number of Aboriginal staff, and the proportion of Aboriginal staff in all hospitals (and the levels they are employed at) be monitored and consistent efforts made to recruit and retain Aboriginal staff in all staffing categories to reach targets for improving these figures (as outlined in Recommendation 3 above).**

Longer term

50. It is recommended that (as in Recommendation 5 above):
- **all hospital aim for staffing levels that broadly reflect the client base of the hospital (this means that all hospitals in the Kimberley should by aiming, in the long term, for majority Aboriginal staff for inpatient services);**
- **the body responsible for ongoing Aboriginal health planning in the Kimberley, in conjunction with hospitals and other health service providers, develop a plan to recruit, train and support local Aboriginal people to train for the full range of positions required to staff hospitals and other health services.**
- **the body responsible for ongoing Aboriginal health planning in the Kimberley, in conjunction with hospitals and other health service providers, enter into arrangements with training providers (for example with the Kimberley Health School and various universities), as well as working with local schools and TAFEs, to ensure that in the long term more people are able to be trained to fill the available positions in the health industry in the Kimberley.**

Obstetric services

Currently there are obstetric services available in four of the six towns in the Kimberley. People in the other two towns and surrounding communities place a high priority on being able to have their babies closer to home. While at present facilities and staff can not provide such services safely the current arrangements are most unsatisfactory and, on occasions, contribute to less than optimal care.

In particular the Halls Creek District, which has the third largest number of Aboriginal births in the Kimberley at about 65-70 per year, and is the town furthest from hospitals providing maternity services, has an overwhelming claim for improved services. Areas with far fewer births which are much closer to other services have obstetric services elsewhere in the State. While many factors have been involved over the years in such services not being provided in Halls Creek, it could appear to outsiders that the fact that most of the births are to Aboriginal mothers was part of the reason such a service did not exist. The possibility of such perceptions needs to be rectified urgently by providing suitable services.

Fitzroy Crossing is 2.5 to 3 hours drive from the nearest obstetric facility in Derby and there are about 50 Aboriginal births per year in the District. Elsewhere in the State such a profile would also almost certainly have ensured obstetric services were available before now.

51. It is recommended that:

- **modern obstetric services be included in the new hospital services in the Halls Creek District; and**
- **the provision of obstetric services in Fitzroy Crossing be part of future redevelopment of services in this district.**

In addition a number of other aspects of obstetric services, including antenatal care, accommodation for expectant women and their families when they have to stay in a town with a higher standard of services than they have available locally and cultural issues related to child birth are frequently raised as problems by Kimberley women.

52. It is recommended that, in conjunction with implementing recommendation 51, all aspects of the provision of obstetric services in the Kimberley be reviewed.

Renal related services

Renal disease is a serious and increasing health problem. Treatment that can reduce the need for dialysis in the future are now well tested, however in the medium term the number of people on dialysis is going to continue to increase. There need to be a range of services to address renal disease, ranging from general primary prevention to early intervention to prevent or delay renal failure, to dialysis and transplant services where required.

There is a long standing and urgent unmet need for renal dialysis services, with the number of people on peritoneal and haemodialysis increasing rapidly. There are currently about 15 people on haemodialysis in Perth who come from the Kimberley and could be returned to the Region if suitable facilities were available. Unfortunately dialysis services as provided at present for Aboriginal people are, according to Western Australian providers, resulting in at best a few years of extra life. Spending a large proportion of the last few years of life attached to a machine in a hospital or a hospital type environment is not an appealing prospect for anyone. Therefore there need to be improved arrangements for the routine delivery of 'home dialysis' in the Kimberley. Where a person's house is not a suitable place for dialysis an appropriate community location, such as in conjunction with the local Aboriginal Community Controlled Health Service, for 'homely dialysis' needs to be available. Such services have already been provided from time to time in Kimberley clinics.

53. It is recommended that dialysis services be available in all larger communities as a substitute for home dialysis where home dialysis is not practical. Provision for such services needs to be made in the planning of all new PHC facilities in major communities in the Kimberley.

In addition there needs to be a regional dialysis service to support home dialysis, to provide training for patients and carers in home dialysis, to provide dialysis for patients who have greater needs where home dialysis is not possible and to provide respite care where problems occur with home dialysis arrangements. Such a facility would avoid or reduce prolonged stays in, and repeated trips to, Perth. This service would also provide specialist support to PHC services to work on primary and secondary preventive programs.

54. It is recommended that a new collaborative regional dialysis service be based in the community in Broome, in close collaboration with KAMSC, in a new purpose built facility, with the preferred option being the KAMSC Anne Street site, jointly funded by the State and Commonwealth. A community based service will facilitate greater Aboriginal involvement in the service and therefore improve the long term chances of effective intervention for this difficult community problem. This facility will also have a major focus on the education of Aboriginal Health Workers, carers, clients and the community, and will provide a focus for preventive programs aimed at reducing or delaying the need for dialysis.

Processes to Implement and Develop the Plan

The single most important part of a Kimberley Aboriginal Health Plan is that this planning needs to be an on-going process, both to adjust plans to community needs and to lobby for resources to actually implement what has been identified as needed. Central to any on-going planning process is the need for both district and regional groups to update priorities and maintain community input as the plan is implemented and evolves over a number of years. This process needs to be supported by a small secretariat to coordinate meetings and ensure communication is occurring between the parties involved. This secretariat need to be responsible to the regional Aboriginal health planning body and jointly funded by the main agencies involved. Without a secretariat established along these lines implementation and development of this plan is likely to be very slow, as has been the case with some past attempts to coordinate action across State and Commonwealth Government departments.

55. It is recommended that each district have a committee made up of community representatives, representatives of the health services in the town and representatives of Local Government, and that this committee have majority Aboriginal representation. This committee should be responsible for identifying needs, identifying problems with existing services and be authorised to make a range of decisions that services agree to implement unless the particular health service management that is involved declines in writing within a specified period.

56. It is recommended that a regional committee to oversee the implementation of the Regional Aboriginal Health Plan be established. This committee would be a successor to the Steering Committee and should have similar representation with the addition of invited representatives from a number of other organisations. This committee may meet in full and may choose to have smaller sub-committees to look at specific issues.

It is appropriate that this committee have representatives from KAMSC, Kimberley Health Services, Aboriginal and Torres Strait Islander Commission and ATSIC regional councils, the Aboriginal Affairs Department, the Office of Aboriginal

Health at a State level and the Office of Aboriginal and Torres Strait Islander Health at the Commonwealth level, as is the case with the existing Steering Committee. Kimberley alcohol related services need to be represented and Local Government, Family and Children Services and the Kimberley Development Commission should also be invited to be represented in the on-going planning process at the regional level.

57. **It is recommended that a small secretariat, possibly based in AAD but responsible to the regional planning body and supported by joint agency funding, be established to coordinate the ongoing planning process.**

58. **It is recommended that one of the main tasks of the Regional Committee is to lobby as a cooperative group for the resources required to implement the plan.**

KAMSC is currently responsible for assisting most of the ACCHSs with data collection and analysis, and the Kimberley Public Health Unit has, in some areas a similar role for the public system and, on some issues for the Kimberley as a whole.

59. **It is recommended that a partnership between KAMSC as the representative of ACCHSs and the Kimberley Public Health Unit be developed and take up the role of collecting, analysing and distributing the information required for the planning process to continue.**

Evaluating Outcomes from the Plan

The second essential component to the success of the planning process over the long term is the evaluation of structure, process and outcomes of efforts to improve Aboriginal health In the Kimberley. What is to be measured needs to be specified based on the plan, the results of this evaluation needs to be regularly assessed and what is monitored needs to be regularly updated based on changes to the plan as it evolves over time.

Key measures will include statistics on underlying issues, health statistics, population numbers and location, staff numbers and location and health service infrastructure.

Performance indicators for underlying issues in Aboriginal health

No major success is possible without improvements in the underlying issues discussed in the background section of this report. Importantly this includes increasing Aboriginal participation and control at all levels in the process. While most of these areas are largely outside the control of health services and the agencies that fund health services, these issues still need to be monitored in partnership with ATSIC and AAD. Part of the on-going development of the Kimberley Aboriginal Health Plan will involve keeping track of statistics on issues such as education, economic status, employment, crime and arrests. These statistics are important indicators of the cultural, social and emotional health of communities.

Many of the appropriate statistics are already being collected, thus a large amount of additional work may not be required. Australian Bureau of Statistics figures on a number of these issues should be useful, however there will need to be a more collaborative relationship between ABS and Kimberley agencies to ensure a consistent high standard in the information they collect.

60. **It is recommended that the Regional Committee with oversight of the Kimberley Aboriginal Health Plan approve a list of indicators (including any indicators already**

routinely collected) of community development and underlying issues, such as those included in this report, and review reports on these indicators regularly.

61. It is recommended that the Kimberley Health Service and KAMSC work in collaboration with ABS, ATSIC, AAD and other relevant agencies to ensure a reliable system for the collection and regular monitoring of these important health statistics is established and maintained.

Performance indicators for health care services for Kimberley Aboriginal people

Performance indicators are an essential part of evaluating and improving services, and a crucial part of any on-going planning process. There is a considerable degree of distrust between some of the service providers in the Kimberley. Whatever the history and justification for this distrust, the Kimberley Regional Aboriginal Health Planning Process needs to operate in a more cooperative environment with agreement on openness and accountability. Without improved cooperation and trust little progress will result, whatever the plan says.

Trust can, in part be built on agreements to work together on performance indicators and the evaluation of services. Evaluation needs to be seen as a mechanism for improving services rather than as unnecessary paperwork, a mechanism to interfere with staff providing services, or a potential weapon that may be used by various parties to the planning process against other services. Agreement to work together on this part of the process is central to a successful ongoing planning process.

It is important that performance indicators are not limited to easily measured process variables related to attendance or specific medical interventions (for example rates of immunisation, frequency of monitoring blood pressure in hypertensive patients). While variables such as these need to be included they must be part of a more comprehensive process.

There is a tendency for organisations to focus on the performance indicators they have to measure and it is therefore important that performance indicators measure all of the aspects of the service that are considered important. A less than comprehensive approach to performance indicators is likely to lead to a focus on less than a comprehensive service. A range of performance indicators that address all of the above principles for a particular level of service is therefore required. Implementation of this process should begin immediately.

If appropriate indicators are selected, the use of performance indicators should lead to greater community involvement than currently occurs with some PHC services. This is one of the essential long term components to improving Aboriginal health.

Health care services in general

The process of compiling this report highlighted two major inadequacies in information recording that is relevant to all health care service organisations. Firstly, for many occasions of service, data on Aboriginality is not collected. This information is available on admissions to hospital and births and should be available on all health care services. Being able to report on services to Aboriginal people is an essential component of monitoring the performance of services, this can not be reported on accurately if the information is not collected. Secondly most accounting systems are not able to report reliably on health service inputs, including how much is spent, for each geographical area, making it very difficult to determine if the allocation of resources is appropriate. This applies to some extent to all services.

62. It is therefore recommended that:

- **All health care services record whether clients are Aboriginal or non-Aboriginal for all occasions of service (including hospital outpatient and emergency, services provided by ACCHSs and services provided by Community Health staff);**
- **All health services have a system of recording and reporting on staff and services provided down to the level of large Aboriginal community; and**
- **All health care services have accounting systems that allocate actual expenditure down to the level of large Aboriginal community (including realistic allocation of staff costs between areas for shared staff).**

Primary Health Care

Performance indicators for Primary Health Care need to be agreed by the Steering Committee or its successor organisation, and need to be set at several levels. The outline below includes examples to assist the Steering Committee in its deliberations.

Regional

The Steering Committee, or the body set up to succeed it, needs to agree on a list categorising all Kimberley communities based on broad criteria and a mechanism for adjusting the list as circumstances change. These categories would be used as a guide to service requirements and a mechanism for monitoring the equity of service provision. Adjustments would need to be made based on population fluctuations, both seasonal and long term and changes in infrastructure such as improving road access.

63. It is recommended that the indicators to be collected and acted on at a regional level include:

- **annual audit of funded positions, how many positions and what level they are funded at, length of time these positions were unfilled and the reasons (leave with no replacement, difficulty replacing staff who resign etc), minimum and average staffing in each service area;**
- **annual audit of services for communities based on agreed standards. For example it may be agreed that communities of over 75 people should have a full time Aboriginal Health Worker, should receive a medical visit once a fortnight and a nurse visit once a week. Performance indicators for such communities could include the number of communities having at least 44 visits a year by a nurse and 22 visits a year by a doctor and the number of communities having no AHW or any other service for more than a week during the year;**
- **annual audit of health service infrastructure (clinics, staff accommodation, air strips, road access etc);**
- **ratio of staffing to population (AHWs, RNs, GPs); and**

- **review of performance indicators collected at district level (see below).**
  This information should be used to set priorities for new infrastructure, staff recruiting strategies, to monitor equity between areas and to lobby for resources.

District

Each district (probably 6, based on the towns in the Kimberley) also needs to have performance indicators for PHC.

64. It is recommended that district level performance indicators include:
- **documentation of local Aboriginal participation, and progress towards increasing this participation, in decision making for PHC services in each area;**
- **the number and proportion of Aboriginal staff in all health services in the district (this also needs to be collated at Regional level but, since employment is usually with local services, progress in this area needs to be the responsibility of people at the district level); and**
- **documentation of support for all PHC staff (with particular emphasis on support for staff based in remote areas and support for AHWs), both the structure designed to provide support and the support actually provided in practice.**

Individual PHC service organisations

Performance indicators for individual Primary Health Care Services need to be agreed and need to apply equally to Aboriginal Community Controlled Health Services, State Government run services and other services being funded to work in Aboriginal health. Performance indicators that apply to only one type of service are not acceptable. Clearly indicators covering a wide range of issues will be required.

65. It is recommended that an agreed list of performance indicators be established based on the national process mentioned above for determining 'Service Activity Reporting' for Aboriginal Community Controlled Health Services and, where this system does not cover the principles outlined earlier in this document, additional performance indicators. These indicators will need to be agreed by all the services involved.

66. It is recommended that these performance indicators include indicators for the follow up and monitoring of priority health conditions such as diabetes, renal disease and other diseases listed by the NorHealth 2020 documentation, but only if this is part of a comprehensive agreed set of performance indicators.

67. It is recommended that indicators of community input into evaluating the accessibility and appropriateness of the service provided be an essential component of assessing the performance of a PHC service and for documenting barriers to access.

Emergency health care and transport

Performance indicators for emergency health care and transport need to be agreed between services providing this care. This includes Kimberley Hospitals, the RFDS, Community Controlled Health Services, Community Health Services run by KHS, other PHC providers in remote communities and St John's Ambulance.

68. It is recommended that the performance indicators for emergency health care and transport be based on the protocols and procedures agreed, based on the principles listed earlier in this document. These will include:

- **emergency contacts – number of contacts, mode of contact (for example whether by telephone or in person and whether by someone on behalf of the person requiring emergency assistance or by the person requiring assistance themself), the problem for which advice or assistance was sought and the response from the health service;**
- **responses to requests for evacuations (could include evacuation, support for treatment in local areas, admissions to hospital, death) and outcome of this illness episode; and**
- **emergency evacuations: number, mode of transport and outcome.**

Hospital based care

Performance indicators for hospital based care need to apply to hospitals providing services to Kimberley Aboriginal people and the list below will need to be expanded based on consultation with all concerned agencies.

69. It is recommended that hospital performance indicators include:

- **monitoring of the number of people leaving hospital against medical advice and investigating a sample of such discharges. This is important to help identify inappropriate hospital processes and in promoting change (as suggested by the RCIADIC);**
- **monitoring of unplanned readmissions, within a week of discharge, and investigating a sample to determine if improvements can be made to both discharge processes and community support so as to prevent unnecessary readmissions;**
- **documenting the proportion of Aboriginal staff in each area of the hospital on a regular basis to assess if progress is occurring in this area;**
- **documenting the presence and distribution of staff of both genders;**
- **documenting training processes designed to improve cultural safety;**
- **documenting the employment of Aboriginal liaison staff;**
- **documenting problems with facilities that are inappropriate for Aboriginal people and reporting this so that applications for funds to redress these problems can be prioritised;**
- **document the specialist services available in the hospital and desired changes in these services;**
- **document the mechanisms by which the Aboriginal community that utilises the service is involved in decision making about hospital services; and**
- **document regular (at least annual) Aboriginal community assessment of the cultural safety of the services provided by the hospital.**

Conclusion

The recommendations above, if implemented in a spirit of true partnership, can result in significant improvements in health services for Aboriginal people in the short to medium term and in Aboriginal health status in the medium to long term.

A significantly increase in resources is required to address many of the recommendations and governments have a responsibility to redress the inequity in resources between the Kimberley and urban Australia identified in this report. This is a clear responsibility for governments at both State and Federal level.

In addition there are many other recommendations that require little or no extra resources, some of which can be implemented almost immediately. All that is required is that the agencies involved in this process commit themselves to continuing a process they have already agreed to. While there are deficiencies in many areas, the Kimberley at least has a service provision infrastructure to work on and has a history of many innovative programs over the past twenty years or more. With true partnerships this framework could be built on and the Kimberley region could quickly become an example for other regions of Australia.

Appendix 1: Population Estimates

Reasonably accurate figures for population are an essential component of planning health services, unfortunately even such an apparently simple exercise as getting a reliable count of population can be exceptionally difficult. Population estimates provided to the project team varied widely and, if allocation of resources is to be based on need, more accurate figures are required.

The Australian Bureau of Statistics (ABS) provides figures on which many decisions are based, unfortunately there is a long history of significant errors in Census counts of Aboriginal people. Particular Kimberley examples in the past include substantial under counting in the Kununurra area in the 1991 census (personal communication, Richard Murray) and substantial under counting in the Fitzroy Crossing area in 1981 (personal communication Helen Sullivan). Both these examples were coherently argued by people from these areas and acknowledged to be major errors. Based on the figures provided to the project team by the ABS the problem of significant under counting continues. Census figures are presented in Table 1 below.

To examine census figures further a comparison was made between ABS figures and two other sources of information which are likely to be reasonably reliable, school enrolment figures and figures on births based on the Western Australian Midwives Notification System. Comparisons between numbers of children from these three sources are made in Tables 2 and 3 below.

Years one to five were chosen for school enrolment figures because enrolment in the early years of primary school is likely to be closer to complete. The Education Department collates these figures from all schools including community schools and catholic schools. Despite limiting this analysis to early primary school it is still likely that some children in the eligible age group are not enrolled and that Education Department figures are an underestimate of the actual population. The extent to which children attend schools outside their usual geographic area of residence is not known, but is presumably relatively small in early primary school.

As can be seen from Table 2, the Education Department figures and the ABS figures follow a very different pattern. The East Kimberley figures provided by the ABS are particularly low when compared with the school figures, while the West Kimberley figures are closer, but still lower.

Figures for births collected through the Midwives Notification System during the ten year period 1987 to 1996 are compared with ABS figures in Table 3. Deaths amongst this cohort of children were deducted from the raw birth figures (Figures provided by Richard Murray of KAMSC from information provided by the Health Department of WA) so that only children still alive would be counted. Ten years of good quality information was readily available and therefore was used for this comparison. Similar comparisons using the most recent five years of information give reasonably similar results, but the difference between ABS and birth figures is a little larger. These figures should be reasonably accurate in terms of overall numbers, although given that the children concerned were on average about five years old at the time of the census there is more possibility of migration between districts than for the Education Department figures, which were current near the time of the census.

As with the School figures, the birth figures demonstrated a significant deficiency in the East Kimberley as shown in Table 3.

Table 1 ABS populations by Indigenous Local Areas from 1996 Census

	ABS 1996 estimates
Broome: Town	1942
Broome: Bidyadanga	510
Broome: Beagle Bay	255
Broome: Balance	284
Broome: Djarindjin (Lombadina)	152
Broome: Bardi (One Arm Pt)	279
Broome District total	**3422**
Wyndham-EKimb: Kununurra	597
Wyndham-EKimb: Eastern balance	254
Kununurra District total	**851**
Wyndham-EKimb: Wyndham	402
Wyndham-EKimb: Kalumburu	341
Wyndham-EKimb: Western balance	264
Oombulgurri (estimate from ABS – not Census figures)	(282)
Wyndham District total	**(or 1289) 1007**
Halls Creek: Warmun (Balingarri)	**209**
Halls Creek: Town	434
HCk:KundatDjaru(RingersSoak)	124
Halls Creek: Northern Balance	394
Halls Creek: Balgo Hills	245
Halls Creek: Mulan	199
HCk: Mindibungu (Bililuna)	165
Halls Creek: Southern Balance	178
Halls Creek district total	**1739**
Derby-WKimb: Derby	1164
Derby-WKimb: Looma	352
Derby-WKimb: Mowanjum	291
Derby-WKimb: Western balance	184
Derby-WKimb: Northern balance (including some of Gibb River communities)	165
Derby District total	**2156**
Derby-WKimb: Fitzroy Crossing (includes Junjuwa, Kurnangi and other town communities)	519
Derby-WKimb: Bayulu	167
Derby-WKimb: Wangkatjunka	116
Derby-WKimb: Eastern balance (includes Muludja and communities associated with Bayulu and Wangkatjunka)	272
Derby-WKimb: Yungngora,	162
Derby-WKimb: Southern balance (includes Yakanara, Millajidee etc)	565
Fitzroy Crossing District total	**1801**
Total	11185
Total (including Oombulgurri estimate)	**11467**

Table 2 Comparison between Australian Bureau of Statistics figures for 1996 enrolments in primary schools

Town and Postcode	Indigenous Population aged 6-10 in 1996 ABS n (%)	Indigenous School enrolments in years 1 to 5 in 1996 Education Department of WA n (%)	ABS Undercount based on Education figures %
Broome 6725 (includes OAP and Lombadina)	516 (30.3)	604 (28.9)	14.6
Derby 6728	295 (17.3)	328 (15.7)	10.1
Fitzroy Crossing 6765	261 (15.3)	302 (14.4)	13.6
Halls Creek 6770 (includes Balgo area)	239 (14)	374 (17.9)	36.1
Wyndham 6740 (includes Warmun, Oombulgurri may not be included in ABS)	191 (11.2)	279 (13.3)	31.5
Kununurra 6743	138 (8.1)	197 (9.4)	29.9
Unallocated		9 (0.4)	
Totals	1704 (100)	2093 (100)	18.6

Table 3 Comparison between Australian Bureau of Statistics figures for 1996 and births of Aboriginal children over the past ten years

Town and Postcode	Indigenous Population aged Under 10 in 1996 based on ABS figures n (%)	Indigenous births (less deaths*) 1987-1996 based on birth and death notifications n (%)	ABS Undercount based on births %
Broome 6725 (includes OAP and Lombadina)	911	1045	12.8
Derby 6728	573	673	14.9
Fitzroy Crossing 6765	441	467	5.6
Halls Creek 6770 (includes Balgo area)	474	629	24.6
Wyndham 6740 (includes Warmun, Oombulgurri may not be included in ABS)	315	401	21.4
Kununurra 6743	309	415	25.5
Total	**3023**	**3630**	**16.7**

*deaths of children born in the period (up to the end of 1996) have been deducted from the raw birth figures

Population estimate based on Education Department figures

To extrapolate from figures in particular age groups to whole population figures requires a realistic estimate of the population proportion in the age group under consideration. Based on ABS figures 27 per cent of the population was under 10 in 1996 and 14.7 per cent was aged 5 to 9. This suggests a substantially larger population for the 5 to 9 age group than for the 0 to 4 age group (1647 aged 5 to 9, compared with 1376 aged 0 to 4). The 6 to 10 year age group is reported by the ABS to be an even larger proportion than the 5 to 9 age group, at about 15.2 per cent of the population (1704 children, see Table 2).

In fact the Midwives notification system does document a lower number of births between 1991 and 1996 although the difference is less than the ABS reports and the number of ten year olds should be lower not higher than the number of 5 year olds based on the birth figures.

Using the ABS proportion aged 6 to 10 years and the Education Department figures the estimated Kimberley Population for 1996 is about 13,740. If the fact that the ABS proportion in this age group appears to be over estimated is taken into account and an estimate of 14.1 per cent of the population being in this 5 year age group age group is used (based on Midwives data), the population estimate is about 14,800 in 1996. Taking into account the potential under enumeration in the Education Department figures this would seem to be a realistic estimate of the population in 1996.

Population estimate based on Midwives Notification System figures

Using the figures in Table 3, and the ABS proportion under 10 years of 27 per cent, a more conservative estimate of 13,430 Aboriginal people in the Kimberley in 1996 results.

Midwives figures may also be underestimated for several reasons. Firstly, some Kimberley women give birth in the Northern Territory. This is not uncommon for women resident in the East Kimberley, and NT births are not recorded on the Midwives system. Secondly, a significant number of births to Kimberley residents occur outside the Kimberley. While the Midwives system is supposed to record usual home address, some of the births to Kimberley women occurring outside the Kimberley may well have been recorded as resident elsewhere (the extent of this problem has not been assessed.). The number of births tends to be smaller than Education Department figures and, apart from potential under enumeration, this may reflect net migration to the Kimberley between birth and reaching school age. Thirdly there is the possibility of some misclassification of Aboriginality in the recording system.

Apart from Midwives figures potentially providing a small underestimate of Aboriginal births there is also possibly a small amount of net inward migration of Aboriginal people, given the time lag between the births and the census date. Taking all these factors into account, estimates based on School enrolments and on the Midwives figures are reasonably consistent.

Other sources of population information

A further source of information that is available for some areas is the Ferret database kept by EKAMS, Yura Yungi and BRAMS. These figures were checked by local staff to exclude visitors and non-residents and are compared with ABS figures in Table 3 below. Clearly there are major differences and while there is the possibility of some people being counted who are not residents in an area this information provides further evidence to support the proposition that substantial under counting occurred in the 1996 census, especially in the East Kimberley.

The figures in Table 4 again suggest substantial under counting in the Census. The Ferret database figures are higher than estimates based on Midwives and Education Department

figures but only of the order of 10 to 15 per cent and certainly are much more consistent with the pattern from these other sources than with the pattern from the ABS figures.

Table 4 Aboriginal Medical Service figures compared with ABS

Town or area	Indigenous Population in 1996 ABS	Records based on the 'Ferret' system (Indigenous only) held by AMSs June 1997	Under count by ABS based on Ferret figures %
Broome / Bidyadanga / Beagle Bay	2991	4090	26.9
Halls Creek	434	1637	73.5
Communities outside Halls Creek (excluding Balgo area)	518	*352 (the complete ABS areas are not covered by Yuri Yungi)	
Kununurra and surrounds	851	2024	58

Summary of population estimates

In summary there are a range of possible estimates for 1996, from an ABS estimate of less than eleven and a half thousand to almost 15 thousand. Given that under enumeration appears more likely than over enumeration from the Government sources, a realistic compromise based on these estimates would be about 14,600 or a little higher. Using a conservative estimate of population growth, 2 per cent per annum, a final estimate for 1999 of about 15,500 results.

Population by area

Apart from estimating total population the distribution of population within the region is obviously important for regional planning. Various comparisons of population distribution are presented in Table 5 below. Included in this Table is information from Centrelink on the distribution of children for whom family payments were made in the second quarter of 1998. While these figures do not cover all children, reasonably similar proportions of children in all areas should be eligible. This is an additional independent source of information on the population distribution across the Kimberley that is reasonably up to date, although it may not be as accurate as some other sources.

Table 5 Summary of comparison between ABS, Education Department and Midwives data

Town and Postcode	Distribution of population in the Kimberley based on ABS data 0-9 year olds (%)	Distribution of population in the Kimberley based on Education data Years 1 to 5(%)	Distribution of population in the Kimberley based on Midwives data 1986-97 (%)	Distribution of children on family payments (Centrelink June quarter 1998) (%)
Broome 6725 (includes OAP and Lombadina)	30.1	28.9	28.7	28.2
Derby 6728	19	15.7	18.6	17.5
Fitzroy Crossing 6765	14.6	14.4	12.9	14.1
Halls Creek 6770 (includes Balgo area)	15.7	17.9	17.5	15.5
Wyndham 6740 (includes Warmun)	12.4	13.3	11.2	8.2
Kununurra 6743	8.3	9.4	11.2	16.5
Unallocated		0.4		
Totals	100	100	100	100

Overall there is general agreement on the relative distribution of population across the Kimberley from the non-ABS sources, although there are some discrepancies. Clearly the greatest discrepancies are in the East Kimberley, especially between Kununurra and Wyndham. There are a range of possible reasons for this lack of agreement between different sources. Firstly the ABS figures for Kununurra are so obviously a long way from accurate that they have to be ignored. Secondly school figures for Kununurra appear to be underestimated. A check by the school nurse in the area, on behalf of this project, revealed significantly larger Aboriginal enrolments in 1998 than the figures the Education Department provided (there may be similar under estimates in some other areas, however time and resources did not allow all areas to be checked). Thirdly differences between the relative proportion in these two towns have changed over time and this is apparent when looking at the Midwives data year by year, with a reversal of births between the two postcodes over the ten years under consideration. In addition, since some small communities physically in the Wyndham postcode area use a Kununurra address, a small proportion of the differences may be due to differences in postcode allocation by different agencies. While some of the reasons for discrepancies are apparent, obtaining an accurate estimate for Kununurra in particular remains a problem.

The births recorded for residents of the Fitzroy Crossing postcode are low relative to the other sources of information. A number of Fitzroy Crossing people have strong family connections

in Derby and may choose to move to live with them for a period before giving birth, rather than be accommodated in Derby Hospital (the only option in the early part of the period being considered) or a hostel. Thus some births that should be recorded in the Fitzroy Crossing postcode may well have been recorded in the Derby postcode. ABS figures for Fitzroy Crossing appear to be more complete than in other areas as they more closely match other sources of information (and hence they over estimate the proportion of people in this area compared with other postcodes where more errors have occurred).

To compile estimates of population for different areas the above information was combined with other sources. These consisted of asking health care providers and other agencies for local estimates of population numbers and comparing these and the figures above with the 1997 Environmental Health Needs Survey conducted by the Aboriginal Affairs Department and the Health Department of WA. While it is clear that some of the individual figures on the 1997 Environmental Health Needs Survey are substantially overstated, this survey is still a useful guide for many communities when combined with evidence from other sources.

Final population estimates were therefore developed in three stages. Firstly the overall population was estimated, as described above, as being about 15,500 in 1999. Secondly estimates of the proportion of population in each area were made. Reasonably robust estimates of population distribution are that about 29 per cent of the Aboriginal population of the Kimberley live in the Broome postcode area, about 31 per cent in the Derby and Fitzroy Crossing postcodes combined, about 17 to 17.5 per cent in the Halls Creek postcode and 22.5 to 23 per cent in Wyndham and Kununurra postcode areas combined. The third stage was to estimate population in local areas and match this to the overall numbers for the district.

Based on all the above sources of information a breakdown of population by large community or groups of communities was compiled, as shown in Table 6. It needs to be recognised that populations fluctuate and many remote communities have larger numbers for considerable periods, which has implications in terms of the resources required. The figures below are an attempt to reach a compromise between the various sources of figures and to estimate an average population in each health service area.

Table 6 Overall population estimates

Broome Postcode	Broome and surrounds	2800
	Beagle Bay area	250
	Bidyadanga	700
	One Arm Point / Djarindjin / Lombadina and surrounds	700
	Broome total	**4500**
Derby Postcode	Derby, Mowanjum and surrounds	2100
	Gibb River Rd† Communities	250
	Looma area	500
	Derby total	**2850**
Fitzroy Crossing postcode	Fitzroy town area, Junjuwa, Kurnangki, Bayulu	850
	Other communities west of Fitzroy Crossing	700
	Other communities east of Fitzroy Crossing	400
	Fitzroy Crossing total	**1950**
Halls Creek Postcode	Halls Creek, Ringers Soak and surrounds	1900
	Balgo, Bililuna, Mulan and surrounding communities	800
	Halls Creek total	**2700**
Kununurra Postcode	Kununurra, Glen Hill*, Doon Doon* and surrounds	1800
	Kununurra total	**1800**
Wyndham Postcode	Wyndham and surrounds	650
	Kalumbaru, Oombulgurri	600
	Warmun	450
	Wyndham total	**1700**
	Overall total	**15500**

*Postal address via Kununurra, although physically in Wyndham postcode (total population of both under 100)

†Ngallagunda is in Postcode 6740 while other communities in the area are in 6728. Because individual estimates of smaller communities are difficult all the Gibb River Rd communities are included under 6728 here.

These figures can then be recombined to give figures by current or suggested health service area, and an example of such a breakdown is given in Table 7 below.

Table 7 Population by possible health service area

District	Approximate population 1999
Broome, Bidyadanga, Beagle Bay	3800
Derby, Looma, Gibb River* Rd, One Arm Point, Djarindjin, Lombadina etc.	3550
Fitzroy Crossing, Noonkanbah, Yukanara, Wangkatjunka etc.	1950
Halls Creek, Balgo area, Yiyili, Ringers Soak etc.	2700
Wyndham, Kalumburu, Oombulgurri,	1250
Kununurra, Warmun, Doon Doon, Glen Hill etc.	2250
Total	15500

Clearly establishing reasonably accurate information on population is crucial to planning. For this to occur health agencies in the Kimberley need to liaise closely with ABS and ensure that up to date accurate figures are widely available. Given their mission of providing high quality data, and the fact that high quality health statistics depend on accurate population information, the Kimberley Public Health Unit should have a major role in ensuring good population figures are available for different areas within the region.

Appendix 2: Health Services Provided to Aboriginal Communities in the Kimberley

Catherine Bridge, David Atkinson.

This appendix is designed primarily to provide a snap shot of general health services in larger Aboriginal communities outside of the major towns. The communities are described in approximate service areas moving from west to east across the Kimberley. A very brief introduction to each town is provided in the relevant section.

The quality of information in this appendix is dependent on information supplied by a range of health staff in late1998 and the authors do not guarantee the accuracy of this information. In particular the population estimates have not been verified and these are in some instances greater than estimates provided elsewhere in this document. Community populations are subject to significant changes for a range of reasons. At different times both the relatively conservative numbers based on extrapolations from the ABS and a range of other sources used in the body of this document, and the larger numbers provided by people working in a local area may be correct.

Dampier Peninsula

One Arm Point

One Arm Point, located 215 kilometres north of Broome has a population of approximately 450, which can fluctuate between 400 and 500 depending on cultural commitments such as law. The population of this community has connections with Beagle Bay, Lombadina, Broome, Derby, as far south as Bidyadanga and even east to Fitzroy Crossing.

One Arm Point is serviced by the unsealed Cape Leveque Road which is closed to heavy haulage vehicles (11 tonnes or heavier) and small vehicles during and after rain in the wet season (early December to end of March). During the dry season, travelling time between One Arm Point and Broome, the community's major service centre, is 3 to 4 hours, and this is considerably longer during the wet, should the road be open at all.

The community has an unsealed "all weather" airstrip, which is equipped with permanent lights activated by remote control by the RFDS pilot, prior to landing. All client evacuations are via RFDS and transferred to Derby Hospital. Evacuations/transfers of clients to other service centres, such as Broome, are initiated, coordinated and funded by the individual, family and/or community.

The One Arm Point Health Clinic, which operates Monday to Friday, is staffed by a full time Remote Area Nurse (RAN) who also provides a 24 hour on-call service 7 days a week. The RAN, who resides in the community, travels to Broome and Derby every 12 weeks, for her 5 days remote area leave, when she is relieved by a health care professional from the Kimberley Health Service.

The RAN has been assisted and supported in the clinic by a female community member who had been undergoing Aboriginal Health Worker training. This person worked in the clinic on a voluntary basis and has recently graduated from BRAMS Aboriginal Health Worker Training School (end of November 1998), and will be employed full time as an Aboriginal Health Worker at One Arm Point by the Kimberley Health Service. Funding for an Aboriginal Health Worker in One Arm Point has been available, but the Kimberley Health Service has had difficulty recruiting staff due to the lack of adequate accommodation. Although the Kimberley Health Service employs the Aboriginal Health Worker, the community is responsible for the provision of accommodation.

On alternate Fridays, a clinic is conducted by a medical officer from Derby Hospital who, accompanied by the Primary Health Care Nurse and, at times, by Allied Health Professionals, is transported via RFDS. Commencing at approximately 0830 hours, the clinics closure time is subject to community attendance and demand. On other alternate Fridays, this clinic is held at Lombadina, so those clients requiring medical review are transported 35 kilometres on unsealed road to Lombadina to attend the clinic there.

Lombadina/Djarindjin

Lombadina and Djarindjin are two communities located 180 kilometres north of Broome and have a population of approximately 250 which can fluctuate between 200 and 300 depending on seasonal changes. The community's population has most connections with and travels most often to the Derby, Looma and other areas in the West Kimberley.

Lombadina is serviced by the unsealed Cape Leveque Road which is closed to heavy haulage vehicles (11 tonnes or heavier) and to vehicles during and after rain in the Wet season (early December to end of March). During the Dry season, travelling time between Lombadina and Broome, the community's major service centre, is 2 to 2 1/2 hours and considerably longer during the Wet, should the road be open.

The community has an "all weather" airstrip with portable lights which are put into position and activated prior to the RFDS arrival. Two members of the Djarindjan council have been allocated the responsibility of the maintenance, positioning and activating the lights following notification by the RAN of an evacuation.

The Lombadina Health Service is comprised of a full time Remote Area Nurse (RAN), who operates the clinic Monday to Friday and provides a 24 hour on-call service, 7 days per week. The RAN, who resides in the community, is relieved by another health care professional from the Kimberley Health Service when she leaves the community during her five day isolation leave every 12 weeks.

The Kimberley Health Service funds 1 1/2 Aboriginal Health Worker positions. Another 1/2 time position is funded by the community via CDEP. Although funding is available, filling these positions has been difficult, due to the lack of accommodation available in the community.

On alternate Friday, a clinic is conducted by a medical officer from Derby Hospital - Kimberley Health Service who, accompanied by the Primary Health Care Nurse and, at times, by Allied Health Professionals, is transported via RFDS. Commencing at approximately 0830 hours, the clinic's closure time is subject to community attendance and demand. On other alternate Fridays, this clinic is held at One Arm Point, so those clients requiring medical review are transported 35 kilometres on unsealed road to One Arm Point to attend the clinic there.

Beagle Bay

Beagle Bay, located 155 kilometres north of Broome, has a population of approximately 250 which can fluctuate between 200 and 350 depending on seasonal changes. People converge from outstations during the wet season. People from Beagle Bay have strong connections with Broome and travel to Broome most frequently.

Beagle Bay is serviced by the unsealed Cape Leveque Road which is closed to heavy haulage vehicles (11 tonnes or heavier) and small vehicles during and after rain in the Wet season (early December to end of March). During the Dry season, travelling time between Beagle Bay and Broome, the community's major service centre, is about 2 hours and considerably longer during the wet, should the road be open.

The community has an unsealed "all weather" airstrip without lights, so air access is prohibited after dark and individuals needing evacuation during the night are taken by road to Lombadina and transferred via RFDS to Derby Hospital.

The Beagle Bay Health service is comprised of a Senior Aboriginal Health Worker and two Registered Nurses. The clinic is staffed by 2 of these health care workers at anyone time. The staff, who provide a 24 hour on-call service 7 days per week, reside in the community and are rostered 2 weeks on and one week off. They commute to Broome for their one week leave.

Every Tuesday morning, a clinic is held by a medical officer from BRAMS who, together with accompanied allied health staff, is transported by RFDS charter. This clinic is conducted every Thursday for approximately 3 1/2 - 4 hours, depending on community attendance and demand.

Broome

The communities located within and in close proximity to Broome are serviced by the health care services which include Broome Regional Aboriginal Medical Service (BRAMS), Broome Health Service (Community Health and the Broome District Hospital), private general practice services through the Broome Medical Centre and the North West Mental Health Service. Broome is by far the largest town in the Kimberley and a number of region wide services are based here. Most Health Department of WA services still have their regional base in Derby but some services are based in Broome and Broome is also the location of the Kimberley Aboriginal Medical Services Council offices. A wide range of services are available and these will not be described here in detail. Ambulance services in and around Broome are provided by the St John's Ambulance Service, as is the case in Kununurra but not in other Kimberley towns.

Bidyadanga

Bidyadanga, located 170 kilometres south of Broome and 13 kilometres off the Great Northern Highway. The community's population is approximately 700 people which can fluctuate between 500 - 1200 depending on cultural commitments such as, law and funerals. The people have cultural ties with communities as far south as Jigalong/Punmu (Central Desert) and far east as Noonkanbah (Fitzroy Valley Region).

The access road of 13 kilometres of unsealed pindan is accessible throughout the year to small vehicles, although, during the Wet, the travelling time from the highway is increased to 20 - 30 minutes and vehicles become bogged if drivers are not familiar with the road. It is then a further 1.5 hours to Broome on the Great Northern Highway.

The community has an unsealed, "all weather" airstrip without lights, so night use is prohibited. Consequently, persons needing evacuation, during the night, are transferred via road. Most client transfers are "Half ways". This involves the coordinated transfer of a client from the Community Clinic Ambulance to the St John Ambulance at a location half way between Bidydanga and Broome.

The Bidyadanga Health service consists of an Aboriginal Health Worker (AHW) and three Remote Area Nurses (RANs). The clinic is staffed by 3 health care professionals at any one time (for example, one AHW and two RAN). The Aboriginal Health Worker and RANs work in the clinic, Monday to Friday 0830 - 1630 hours. In addition, a 24 hour on-call service 7 days, a week is alternated between two rostered registered nurses every 48 hours. All four health care professionals reside in the community and travel to Broome every 2 weeks for their 5 days remote area leave.

Every Thursday morning, for 3 1/2 - 4 hours depending on attendance, a clinic is held by a medical officer from the Broome Aboriginal Medical Service (BRAMS) who, together with accompanied allied health staff, is transported by RFDS charter. Once a fortnight, the clinic is conducted by two medical officers from BRAMS.

Derby

The communities located within and surrounding Derby are serviced by the health care services which include the Derby Health Service (Community Health and the Derby Regional Hospital), the recently established community controlled Derby Aboriginal Health Service and the North West Mental Health Service (headquarters in Broome). As this is still the regional centre for health services many regional services are based here and a wide range of services are available. These are not described in detail here. Derby is also the regional base for the RFDS and the Derby hospital provides ambulance services to the town, surrounding communities and adjacent towns.

Mowanjum

Mowanjum, located about 9 kilometres east of Derby, has a population of approximately 300 which can fluctuate depending on cultural commitments such as, law etc. Given the proximity of Derby it is not surprising that this community has close connections with Derby and also to communities on the Gibb River road..

Road access to Mowanjum is via the sealed portion of the Gibb River Road. This section of the Gibb River Road is not subject to closure. Travelling time between Mowanjum and Derby, the nearest service centre, is 10 minutes.

Mowanjum has an onsite health clinic, staffed by an Aboriginal Health Worker 4 days per week, and a Community Health Nurse Generalist who services the community Tuesday afternoon for 1/2 day antenatal clinic. A Diabetic Educator also visited the community each alternate month on a Wednesday between 0900 - 1200 hours. Community members need to travel into Derby to see a medical officer.

Looma

Looma is located approximately 120 kilometres south east of Derby off the Great Northern Highway. The community's population of approximately 400 can fluctuate between 300 - 700 depending on cultural commitments such as, law. The population is very mobile and travels mainly to Derby, Noonkanbah and surrounding communities in the Fitzroy Valley.

The community's 30 kilometre unsealed access road off the highway is generally open but occasionally subject to closure during the Wet season. During the Dry season, travelling time from Looma to Derby, the community's major service centre, is approximately 1.5 hours. During the Wet season (beginning of December to the end of March) travelling time may be longer.

The unsealed airstrip, located at Camballin, approximately 10 kilometres from Looma, is rarely used for evacuations. Most client transfers are "Half way transfers" which involve the coordinated transfer of a client from the Community's Clinic Ambulance to the Ambulance from Derby Hospital at a location half way between Looma and Derby. Transfer is coordinated by the on-call medical officer from Derby Hospital.

The Looma Health Service is comprised of a Remote Area Nurse (RAN) and one Aboriginal Health Worker (AHW) who is employed full time. The AHW works in the clinic Monday to Friday 0830 -1200 hours and 1300 - 1530 hours. In addition to conducting the clinics the RAN who provides a 24 hour on-call service 7 days a week, is entitled to 5 days remote leave every 12 weeks. The AHWs reside in Looma, while the RAN, who resides in Camballin, commutes to the community, a return trip of approximately 20 kilometres.

Every Wednesday morning, for 3 1/2 - 4 hours depending on attendance, a clinic is held by a medical officer from the Derby Health Service who, accompanied by allied health staff, travels to Looma via road.

Communities Accessed via the Gibb River Road

Imintji

Imintji, located 227 kilometres east of Derby, has a population of approximately 100 which can fluctuate depending on cultural commitments such as, law etc. The population is very mobile and travels mainly to Derby.

Road access to Imintji is via the unsealed Gibb River Road which is closed to heavy haulage vehicles (11 tonnes or heavier) and to small vehicles during the Wet season (beginning of December to the end of March). During the Dry season, travelling time between Imintji and Derby, the nearest service centre, is about 3 hours.

The community has no airstrip. The closest unsealed "all weather" airstrip equipped with flares appropriate for night landings is Kupunjarri approximately, 100 kilometres north east; travelling time approximately 1 hour and 20 minutes, access to this air strip is often cut in by wet weather.

Imintji has an onsite health clinic, staffed by a Senior Aboriginal Health Worker (SAHW) each Wednesday and one day a fortnight by a Remote Area Nurse (RAN) who services the community on Monday and Friday for two half day clinics.

Every alternate Tuesday a 3 - 3 1/2 hour clinic (depending on attendance) is conducted at either Ngallugunda (Gibb River) in the morning and Ulumboo in the afternoon or Kupunjarri (Mt Barnett) in the morning and Dodnun in the afternoon by a medical officer from Derby

Health Service who, is accompanied by the Primary Health Care Nurse and the RAN and is transported via RFDS aircraft such as, Each community receives one of the above visits per month.

Dodnun

Dodnun, located 344 kilometres east of Derby, has a population of approximately 50 which fluctuates depending on cultural commitments and seasonal factors. The population is very mobile and travels mainly to Derby.

Road access to Dodnun is via the unsealed Gibb River Road which is closed to heavy haulage vehicles (11 tonnes or heavier) and to small vehicles during the Wet season (beginning of December to the end of March). Drying the Dry season, travelling time between Dodnun and Derby, the nearest major service centre, is about 4.5 hours.

The community has access to an unsealed airstrip, equipped with flares, which is not "all weather" and is subject to closure during and after moderate/heavy rainfall. The airstrip is located at Mt Elizabeth Station, approximately 15 kilometres away. Travelling time during the Dry Season is 20 - 30 minutes. Road access to the strip includes two creek crossings, which become impassable during the Wet.

Dodnun has an onsite health clinic staffed by a Senior Aboriginal Health Worker (SAHW) each Monday and by a Remote Area Nurse (RAN) on alternate Thursdays for half a day.

One Tuesday a month a 3 - 3 1/2 hour clinic (depending on attendance) is conducted at Dodnun by a medical officer from Derby Health Service who, is accompanied by the Primary Health Care Nurse and the RAN, is transported via RFDS aircraft.

Kupungarri

Kupungarri, located 306 kilometres east of Derby, has a population of approximately 90, which can fluctuate depending on cultural commitments and seasonal factors. The population is very mobile and travels mainly to Derby.

Road access to Kupungarri is via the unsealed Gibb River Road which is closed to heavy haulage vehicles (11 tonnes or heavier) and to small vehicles during the Wet season (beginning of December to the end of March). During the Dry season, travelling time between Kupungarri and Derby, the nearest major service centre, is about 4 hours.

The community has an unsealed "all weather" airstrip, equipped with flares, that is still subject to closure when there is moderate to heavy rainfall. The airstrip is situated approximately 3 kilometres away and travelling time, during the Dry season, is 10 - 15 minutes. Road access to the strip includes two creek crossings which can become impassable during the Wet.

Kupunjarri has an onsite health clinic staffed by a Senior Aboriginal Health Worker (SAHW) each Thursday and by a Remote Area Nurse (RAN) on alternate Tuesdays.

One Tuesday a month a 3 - 3 1/2 hour clinic (depending on attendance) is conducted at Kupunjarri by a medical officer from Derby Health Service who, is accompanied by the Primary Health Care Nurse and the RAN, is transported via RFDS aircraft. This service alternates its visits between these communities, and is conducted once a month in each community.

Ngallagunda

Ngallagunda, located 369 kilometres east of Derby, has a population of approximately 100, which can fluctuate depending on cultural commitments and seasonal factors. The population is very mobile and travels mainly to Derby.

Road access to Ngallagunda is via the unsealed Gibb River Road which is closed to heavy haulage vehicles (11 tonnes or heavier) and to small vehicles during the Wet season (beginning of December to the end of March). During the Dry season, travelling time between Ngallagunda and Derby, the nearest major service centre, is 5 hours.

The community has an unsealed "all weather" airstrip, equipped with flares for night landings, which is subject to closure due to moderate/heavy rainfall. The airstrip is situated approximately 1 1/2 kilometres from the community and travelling time during the Dry is 5 - 10 minutes. Access to the strip is via "The House Creek" which can become impassable during the Wet.

Ngallagunda has a onsite health clinic staffed by a Senior Aboriginal Health Worker (SAHW) each Tuesday and by a Remote Area Nurse (RAN) on alternate Wednesday for a full day. The SAHW resides in the community.

One Tuesday a month a 3 - 3 1/2 hour clinic (depending on attendance) is conducted at Ngallagunda by a medical officer from Derby Health Service who, accompanied by the Primary Health Care Nurse and the RAN, is transported via RFDS aircraft. This service alternates its visits between these communities, and is conducted once month in each community.

Fitzroy Crossing and Surrounding Region

The communities located within the Fitzroy Valley are serviced by two health care services, the Fitzroy Valley Health Service (Community Health and the Fitzroy Crossing Hospital) and a relatively new community controlled service, the Nindilingarri Cultural Health Service (NCHS). Medical staff are only available through the Fitzroy Valley Health Service, with NCHS having nursing and AHW staff. Most staff are based in Fitzroy Crossing and travel to the many surrounding communities. Ambulance services for the area, including at times all many of the Fitzroy Valley communities discussed below, are provided by the Fitzroy Crossing Hospital.

The Fitzroy Valley Region is comprised of approximately 30 communities, these include: Bayulu, Joy Springs/Eight Mile, Karnparrmi, Mimbi, Yiyili, Moongardie, Yakanarra, Kadjina, Koorabye, Wangkatjungka, Ngumpan, Galeru Gorge, Kapartiya, Ngalingkadji, Djugerari, Muludja, Jimbalakudunj, Mindi Rardi, Kurnangki, Junjuwa, Biridu, Bungardi, Darlingunaya, Parukupan.

Some of the communities with larger populations will be discussed in terms of provision of health services. The larger town communities are Kurnangki and Junjuwa, and a significant number of Aboriginal people are also housed in the main town area. Kurnangki is in effect in the town and obtains services from the town health services, Junjuwa is very close to the town but has some services delivered in the community and these are described below.

Junjuwa

Junjuwa is located close to the townsite of Fitzroy Crossing between the main town area and the local District High School, approximately 2 kilometres north of the Fitzroy Valley Health Service. The community's population, according to the local health service, is approximately 300 - 400 with some seasonal fluctuations, according to AAD the population is about 450. A sealed road connects Junjuwa and the Fitzroy Crossing townsite and this road is only very rarely closed due to flooding. People from Junjuwa access health services in the town but also have some services provided on site.

COMMUNITY HEALTH SERVICES - Fitzroy Valley Health Service
Junjuwa has its own health clinic. The clinic is staffed by a School Health Nurse (SHN) and Aboriginal Health Worker (AHW) from the Fitzroy Valley Health Service. The SHN and AHW conducts clinics about 3 days per week, generally on Monday, Wednesday and Friday. The frequency and duration of the clinic is somewhat dependent on the child health and school health work load. The SHN, during the school term, conducts School Health Screening at the Primary School on Tuesdays, in addition to conducting the Ear Health Program for approximately 1 - 1 1/2 hours each morning Monday to Friday. This is done prior to conducting the clinic at Junjuwa and the School Health Screening program. The AHW is usually in the clinic and continues with current health programs when the outpatient aspect of the clinic is closed.

NINDILINGARRI CULTURAL HEALTH SERVICE
Junjuwa is also serviced by the Nindilingarri Cultural Health Service. Between January and November 1998 HACC work was the major service with about 100 visits. There was also substantial input on Men's and Women's health with 10 days on each and there were also three days of Environmental health activities.

Muludja

Muludja, located approximately 40 kilometres north west of Fitzroy Crossing, has a population of approximately 150, which can fluctuate depending on in particular on seasonal influences. The community is situated near the Margaret River and, having experienced severe flooding with deaths in the past, relocates their vulnerable and elderly population into town during the wet season.

The community's 30 kilometre, unsealed access road branches off the Great Northern Highway and is subject to closure during the Wet season. Travel to Fitzroy Crossing, the major service centre, during the Dry season takes approximately 40 minutes. During the Wet season (early December to end of March), the sandy, river plain road becomes very boggy, at times impassable and, as a result, the community can become isolated.

The community has no airstrip, therefore, all evacuations occur via road to Fitzroy Crossing Hospital.

Muludja has a clinic onsite, which is operated every alternate Tuesday by a Community Health Nurse, opening at about 0800 hours with the closing time determined by community need and demand. The CHN who resides in Fitzroy Crossing, and travels out to conduct the clinics, is accompanied monthly by a medical officer from Fitzroy Valley Health Service.

Muludja is also serviced by the Nindilingarri Cultural Health Service. Between January and November 1998 Women's health was the major program area with 25 visits. There was also substantial input on Environmental health (12 days) and Men's health (10 days) with four other general health days.

Bayulu

Bayulu, located 15 kilometres south east of Fitzroy Crossing, has a population of up to about 400 although it fluctuates depending on seasonal factors. The community is situated close to the Great Northern Highway and access to Fitzroy Crossing is dependent on the highway which is subject to occasional flooding, and the community can be cut off for up to 2 or 3 days in the wet season and occasionally for longer.

The community has no airstrip and all client transfers occur via road to Fitzroy Crossing Hospital.

Bayulu is a service centre and has family ties with a number of smaller surrounding communities which include, Bidjijul, Kurlku, Mimbi, Eight Mile, Three Mile and Gillarong. Members of the following communities generally relocate to Bayulu during the wet season. Ngalingkadji, Djugerari and Moongardie.

Bayulu has a health clinic onsite, conducted by a Community Health Nurse (CHN) twice weekly, usually on Monday and Wednesday, commencing at approximately 0900 hours. The community also has access outside clinic hours to the CHN who resides in the township of Fitzroy Crossing and frequently visits the community. The clinic is periodically opened by the AHW. A medical officer from the Fitzroy Crossing hospital visits the community monthly on either a Tuesday or Thursday.

Bayulu is also serviced by the Nindilingarri Cultural Health Service. Between January and November 1998 Environmental health was the most important program area with 39 days spent in the community. There were also six Women's health visits and two Men's health days.

Wangkatjungka

Wangkatjungka, located 140 kilometres south east of Fitzroy Crossing has a population of approximately 250 - 300 which can fluctuate between 150 - 500 due to Law commitments. The community's population fluctuates depending on the influx of people from surrounding communities. The community is 40 kilometres off the Great Northern Highway and is frequently inaccessible during the Wet season, due to the roads being impassable for several days or even weeks at a time. During the Dry, it takes approximately one and a half hours via road, from Wangkatjungka to Fitzroy Crossing, the communities major service centre.

The community's unsealed airstrip is not "all weather" and is subject to closure from even moderate rainfall. The airstrip becomes unusable more easily than the road access to the Great Northern Highway. The airstrip has no portable lights, therefore night landings are prohibited. For emergency evacuations, the community also has access to an "all weather" sealed airstrip at Cadjebut which is 50 kilometres north east via road (40 kilometres unsealed road and 10 kilometres sealed highway).

Wangkatjungka is a service centre and has family ties with a number of surrounding communities which include: Galeru Gorge/Mt Pierre, Kypartiya/Bohemia Downs, Ngumpan, Kurlku and Ngarantjadu.

Wangkatjunka has a health clinic onsite, staffed full time by an Aboriginal Health Worker (AHW) and four days a fortnight by a Community Health Nurse (CHN). The AHW conducts a clinic Monday to Friday 0800 - 1400 hours and the CHN visits and services the community Monday - Thursday, 0800 - 1200 and 1330 - 1700 hours. Every alternate week the CHN is accompanied by a medical officer. The medical clinic commences at approximately 0800 hours with closing time determined by community need and demand. All the health care professionals travel to the community to conduct the clinics. The AHW resides in Galeru George, the Medical officer and CHN reside in Fitzroy Crossing.

Wangkatjunka is also serviced by the Nindilingarri Cultural Health Service. Between January and November 1998 there were visits for General Health Education (eight) Environmental Health, Men's Health and Women's Health (three each).

Yakanarra

Yakanarra is a relatively new larger community of up to about 150 people that has not in the past received the level of services a community of that size would normally receive. Some visiting services have been provided by both health services and plans to increase services to this community were being considered in early 1999.

Millagidee / Kadjina

Millagidee, located 220 kilometres south east of Fitzroy Crossing and is one of the more isolated communities. It has a population of over 50 at times although because of the isolation this varies quite considerably and the community may have very few inhabitants during the Wet season. The population has connections with Bayulu and Noonkanbah as well as Fitzroy Crossing itself.

The community's140 kilometre unsealed access road off the Great Northern highway is subject to closure during the Wet season. During the Dry season, travelling time from Millagidee to Fitzroy Crossing, the community's major service centre, is approximately 3 hours. The community's nearest service centre is Noonkanbah, over 60 kilometres of unseal road and across the Fitzroy River, which takes 1 hour to travel during the Dry. During the Wet season (beginning of December to the end of March) this road becomes impassable for long periods and access to Fitzroy Crossing on other roads is also often cut, leaving the community isolated for weeks or even months at a time.

The community's unsealed airstrip is small and is not "all weather" and hence is subject to closure with even moderate rainfall. The airstrip has no portable lights, therefore night landings are prohibited.

Every alternate month in the dry season, a clinic is conducted by a Community Health Nurse from the Fitzroy Valley Health Service, by road from Noonkanbah. During the Dry season, community members also travel into Noonkanbah or Fitzroy Crossing to attend a medical clinic. The community has an RFDS box, which is maintained by the Fitzroy Valley Health Service. In the past monthly visits by charter flight by a doctor from Fitzroy Crossing had been provided, however this service no longer occurs.

Yungngora /Noonkanbah

Yungngora is located 172 kilometres south west of Fitzroy Crossing. The community's population, according to the local health service, is approximately 250 people but can fluctuate between 150 - 350 depending on seasonal changes. Smaller communities frequently migrate to larger communities prior to and during the Wet season for safety reasons and also for law commitments.

The community's unsealed access road (about 80 kilometres from the Great Northern Highway about 90 km West of Fitzroy Crossing) is subject to closure during the Wet season. Travelling time from Yungngora to Fitzroy Crossing, the major service centre, is two hours during the Dry season and during the Wet season (early December to end of March) the road can become impassable and the community can become isolated by road for significant periods.

The community has an unsealed "all weather" airstrip with no lights. Therefore, night landings are prohibited and emergency evacuations occur via road when possible, to Fitzroy Crossing.

Yungngora is a service centre and has family commitments with a number of surrounding communities which include: Millagidee/Kadjina, Ngarlipita/Koorabye, Jimbalakadunj, Ngurtuwarta, and Fitzroy Crossing (in particular the Kurnangki community in town).

Yungngora has a health clinic on site, staffed full time by an Aboriginal Health Worker (AHW) and four days a fortnight by a Community Health Nurse (CHN). The AHW conducts a clinic Monday to Friday 0800 - 1400 hours and the CHN visits and services the community Monday - Thursday, 0800 - 1200 and 1300 - 1630 hours. Every alternate week the CHN is accompanied by a medical officer and travels via chartered aircraft to the community. The medical clinic commences at approximately 0800 hours and closes when community demand has been met. The AHW resides in the community and provides a 24 hour on-call service 7 days per week. The on-call is shared when the CHN visits the community.

Yiyili

Yiyili, located 110 kilometres north west of Halls Creek. The population, according to the local health service, is approximately 300, which can fluctuate between 20 - 400 depending on school holidays etc. The Yiyili community has family/cultural ties with communities in both Fitzroy Crossing and Halls Creek and utilise both health and other services in both towns.

Yiyili's 10 kilometre, unsealed access road off the Great Northern Highway crosses a large creek making the road inaccessible during and after rain in the Wet season. During the Dry season, travelling time from Yiyili to Halls Creek, the community's major service centre is 1 1/2 hours. Community members also often do business in Fitzroy Crossing, which is closer to two hours away.

The community has no airstrip. The closest "all weather" sealed airstrip equipped with lights appropriate for night landing is either Cadjebut, approximately 50 kilometres north west, or Halls Creek approximately 110 kilometres south east.

The health clinic is used once weekly on a Thursday by a medical officer from Halls Creek Health Service, accompanied by a Community Health Nurse and periodically by a Aboriginal Health Worker. This clinic is poorly equipped so virtually all medical/nursing supplies are brought from Halls Creek each visit. Only medical files remain in the clinic. The clinic commences at approximately 0915 hours and is usually finished by 1200 - 1230 hours.

Yiyili is also serviced by the Nindilingarri Cultural Health Service from Fitzroy Crossing. Between January and November 1998 a women's health worker spent eight days in the community and there were two visits for Environmental Health and Men's Health.

Halls Creek

The communities located within and near Halls Creek are serviced by two health care services, the Halls Creek Health Service (Community Health and the Hall Creek District Hospital) and the Yura Yungi Health Service, the local Aboriginal Community Controlled Health Service. General health care and limited hospital care is provided and details of the services available are not provided here. Primary care type services are available from Yura Yungi and from the hospital. After hours services are provided through the hospital, but

involve medical staff from both services. Ambulance services are available, staffed by after hour on-call volunteer drivers and nursing staff from the hospital.

Ringers Soak

Ringers Soak, located 180 kilometres south east of Halls Creek with a population of approximately 120 which can fluctuate between 50 and 150 depending on cultural and family commitments as well as seasonal factors. The Ringers Soak community has cultural ties with the communities Wirrimanu, Mindibungu, Mulan, Yiyili and Wave Hill.

The community has a 50 kilometre access road off the Duncan Road. Both roads are unsealed and are subject to intermittent closure during the Wet season. During the Dry season travelling time from Ringers Soak to Halls Creek is about 2 1/2 hours. The travelling time during the Wet season can be significantly greater, should the road be open.

The community has an unsealed "all weather" airstrip. It has portable battery operated lights which are assembled and activated on the strip prior to the RFDS arrival. Evacuation of clients occurs via road or air. Road evacuation uses the clinic vehicle and air evacuation involves either, a local air charter company which transfers the client to Halls Creek or, the RFDS which transfers the client to Derby Hospital.

The Ringer Soak Health Service is comprised of a registered nurse, who conducts the clinic Monday to Friday 0730 - 1230 hours and 1500 - 1630 hours, in addition to providing a 24 hour on call service. The nurse resides in the community and is entitled to 1 weeks leave every 12 weeks. The registered nurse is not relieved and Yura Yungi provides support to the community. The registered nurse is paid by the community via CDEP (this person declines better employment conditions)
1 FTE Aboriginal Health Worker trainee January - March 1998

The community also has a fortnightly clinic conducted by a medical officer from Yura Yungi (Halls Creek Aboriginal Medical Service) who is transported by a local commercial aircraft chartered by Yura Yungi. This clinic is held on alternate Wednesday mornings for 3 -4 hours, depending on community attendance and demand.

Kutjungka Region

The Kutjungka region is comprised of the following main communities, Wirrimanu (Balgo), Mindibungu (Bililuna), Mulan and Yagga Yagga. The Mercy Community Health Service, which provides health care services to these communities under contract for the Health Department of WA, is supported by visiting medical, nursing and allied health staff from both Halls Creek Health Service, Derby Health Service and the Royal Flying Doctors Service.

Wirrimanu - Balgo

Wirrimanu, located approximately 270 kilometres south of Halls Creek, has a population, according to the local health service, of approximately 500, which fluctuates between 400 - 600 depending on cultural commitments/business such as, law and funerals. The Wirrimanu community has cultural ties with communities in the Northern Territory and Central Desert Region.

A 35 kilometre access road off the Tanami Road services Wirrimanu. Both roads are unsealed and become impassible to all vehicles for up to 15 to 20 days at any one time during the Wet season. During the Dry season, travelling time between Wirramanu and Halls Creek, the major service centre, is 3 1/2 to 4 hours.

The community has an "all weather" unsealed airstrip located on relatively high ground with good drainage. Closure occurs only after heavy rainfall (for example if water is seen on the strip, planes do not land). This strip is the best "all weather" strip within the Kutjungka Region. Lights are permanently located along the strip and are activated by a community member prior to the RFDS plane landing. The community's generators operate the lights. However, when generators are not functioning, the lights can not be activated. Most visitors use aircraft as a means of transportation to and from the community, especially during the Wet season. The majority of emergency clients are transferred/evacuated via RFDS to Derby Hospital.

During the Dry season, clients are transferred from the community to attend specialist appointments either in the East (Kununurra/Halls Creek) or West (Derby) Kimberley. On occasions, planes are chartered but the majority of clients are transferred by road. A hired vehicle is driven from Halls Creek to Wirramanu to collect people to take them to Halls Creek for transfer by public transport such as, Greyhound bus, to Kununurra or Derby. On occasions the RFDS have been able to take people to Derby on a clinic flight however this depends on the payload and is unreliable. The clinic vehicle is rarely used as a means of transporting clients. It is, however, used to access dental services coinciding with the servicing of the vehicle in Halls Creek. There is one HDWA funded vehicle in Wirramanu, which has, until recently, serviced both Wirrimanu and Yagga Yagga. The other vehicle has been privately funded by the Sisters of Mercy for administrative purposes and to function as an emergency back-up vehicle.

The health service in Wirrimanu is comprised of two trainee Aboriginal Health Workers (AHW), two remote area nurses (RAN) and a remote area nurse manager (RANM). The RANM supports services at Mulan, Mindibungu and Yagga Yagga as well as Wirramanu. The RANs work full time and have 5 day isolation leave every 12 weeks. Due to the remoteness and inaccessibility of the region, the Mercy Community Health Service permits the nurses to combine the 5 day isolation leave with their annual leave.

The clinic opens at 0800 hours, closes for 30 minutes for lunch and reopens until all clients have been seen. Often, closing time is 1600 or 1700 hours despite the contract being for only four hours only a day. In addition, RANs provide a 24 hour on-call service, 7 days a week. The trainee Aboriginal Health Workers have varying experience and expertise and are funded through CDEP with top up funds from HDWA.

The community is also serviced weekly by a medical officer from Derby Health Service. The RFDS plane transports the Medical Officer, Primary Health Care Nurse (RFDS) and accompanying allied health staff. This clinic is conducted every Thursday commencing at approximately 0930 hours until approximately 1400 - 1630 hours, depending on community attendance and demand.

Yagga Yagga

Yagga Yagga is located 365 kilometres south of Halls Creek and 95 kilometres south of Wirrimanu. The community's population, according to the local health service, is approximately 50 but can fluctuate between 20 and 100. According to AAD the average population is 55 and fluctuates between 5 and 125.

Yagga Yagga is accessible only via Wirrimanu and the unsealed access road is often impassable during the Wet season. During the Dry season, travel time between Yagga Yagga and Wirramanu can still be up to 2 hours depending on road conditions.

The community has an airstrip 10 kilometres away which is not "all weather" and is closed during wet weather. The airstrip has no lights, so night landings are prohibited.

The community has a clinic on site, which is staffed by RANs from Wirrimanu. Although, the Mercy Community Health Service is contracted to conduct a clinic 3 days per week, inadequate funding, staffing levels and availability of transportation influences the provision of this service. The population is quite mobile which also has an impact on the provision of the health service.

A medical officer from Halls Creek visited Yagga Yagga twice in 1998, for half a morning on both occasions. Although, the RFDS made a commitment to provide Yagga Yagga with a monthly visit by a medical officer from the Derby Health Service, the community has received this service only three times in 1998.

Yagga Yagga did not, until recently, have a clinic vehicle. The HDWA had funded one vehicle for Wirrimanu, therefore the Sisters of Mercy were subsidising the Yagga Yagga component of the health service for some time. Recently, Yagga Yagga received an ATSIC funded vehicle for health purposes. The community houses this vehicle and collects the RAN from Wirrimanu transports her to Yagga Yagga and then returns her at the end of the clinic before returning to Yagga Yagga, a 360 kilometres round trip. A specific purpose vehicle provided by the health services is urgently required to reduce this burden.

The community has access to a medical officer each Thursday via Balgo, approximately 95 kilometres via road. This is dependent however, on the availability of transportation and weather permitting.

Service to Yagga Yagga according to the HDWA contract is population dependent.

Less than 20 people = 2 days/week
20-60 people = 3 days/week
Greater than 60 = 5 days a week

The Mercy Community Health Service, because of current staffing levels, is only able to offer 2 days and very occasionally 3 days service per week even though the population may warrant greater services.

At the time of survey it was expected that the community was going to expand (by approximately 3 families) and the Mercy Community Health Service wanted to increase the frequency of health services to Yagga Yagga. The proposal was to undertake two separate two day visits a week, however such a service would only be possible with increased commitment of funding and staff.

Mindibungu - Bililuna

Mindibungu is located approximately 160 kilometres south of Halls Creek and approximately 110 kilometres north west of Wirrimanu. The community's population, according to the local health service, is approximately 120 people. This can fluctuate between 100 and 200, depending on cultural commitments such as law and funerals. According to AAD the maximum population is 260 people. The Mindibungu community has cultural ties with communities in the Northern Territory and Central Desert Region.

The community has a one kilometre access road off the Tanami Road. Both roads are unsealed and often impassable to all vehicles during the Wet season. During the Dry season, travelling time between Mindibungu and Halls Creek, the major service centre, is 2 to 2 1/2 hours.

The community has an unsealed supposedly "all weather" airstrip located on low lying country and subject to closure due to moderate/heavy rainfall. The airstrip has pilot activated lights. The majority of visitors use aircraft as a means of transportation to and from the community, especially during the wet season.

The majority of emergency clients are transferred/evacuated via RFDS to Derby Hospital. Clients are transferred from the community to attend specialist appointments either in the East (Kununurra/Halls Creek) or West (Derby) Kimberley. On occasion, planes are chartered, but the majority of clients are transferred by road. A hired vehicle is sent from Halls Creek to drive people to Halls Creek for transfer by road transport such as a Greyhound bus to Kununurra or Derby. On occasion, the RFDS are able to take people to Derby on a clinic flight if the payload enables this. There is only one HDWA funded vehicle in Mindibungu. This vehicle is rarely used as a means of transporting clients. It is, however, used to access dental visits to coincide with servicing of the vehicle in Halls Creek.

The clinic opens at 0800 hours, closes 30 minutes for lunch and reopens until all clients have been seen. Often, closing time is between 1600 - 1700 hours despite only being funded for four hours a day. In addition, the resident RAN provides a 24 hour on-call service 7 days a week.

The health service in Mindibungu is staffed by two trainee Aboriginal Health Workers (AHW) and one remote area nurse (RAN). The RAN works full time and has 5 day isolation leave every 12 weeks. Due to the remoteness and inaccessibility of the region, the Mercy Community Health Service permits the nurse to combine the 5 day isolation leave with annual leave. As at Wirrimanu the Aboriginal Health Workers work 20 hours a week in the clinic and are paid CDEP plus a Health Service top-up.

The community is serviced on alternate Tuesday afternoons by a medical officer from Derby Health Service who with the Primary Health Care Nurse (RFDS), and accompanying allied health staff, is transported by the RFDS plane. The duration of the clinic is approximately 2 1/2 - 3 hours depending on community attendance and demand.

Mulan

Mulan, located 315 kilometres south west of Halls Creek and 45 kilometres due south of Wirrimanu, has a population, according to the local health service, of approximately 200, which can fluctuate between 100 and 300 depending on cultural commitments such as law and funerals, as well as seasonal factors. The people of Mulan have cultural ties with communities in the Northern Territory and Central Desert as well as with other communities in the area and communities as far away as Fitzroy Crossing.

Mulan has two access roads, one of which runs directly from the Tanami Road and the other which run from the Tanami Road via Wirrimanu. Wirrimanu is 35 kilometres off the Tamani Road and Mulan is 45 kilometres south west of Wirrimanu. Travellers are encouraged to use the access route via Wirrimanu to Mulan, as this road is the better of the two. The roads are unsealed and subject to closure during the Wet season. During the Dry, travelling time on the unsealed roads from Mulan to Halls Creek, the community's major service centre, is 4 1/2 - 5 hours. During the Wet season, the roads become impassible to all vehicles for up to 15 to 20 days at any one time.

The community has an unsealed "all weather" airstrip located on low lying country with poor drainage and subject to frequent closure after moderate to heavy rain. Lights are permanently located along the strip and activated by the pilot, prior to landing. Most visitors use aircraft to visit the community especially during the Wet season. The majority of clients are transferred/evacuated via RFDS to Derby Hospital. There is one HDWA funded vehicle in Mulan. It is occasionally used to access dental visits when these coincide with servicing of the vehicle in Halls Creek.

The health service in Mulan is staffed by two trainee Aboriginal Health Workers (AHW) and one remote area nurse (RAN). The RAN works full time and has 5 day isolation leave every 12 weeks. Due to the remoteness and inaccessibility of the region, the Mercy Community Health Service permits the nurse to combine the 5 day isolation leave with annual leave. As at Wirrimanu the Aboriginal Health Workers work 20 hours a week in the clinic and are paid CDEP plus Health Service Top-up.

On alternate Tuesdays, commencing at 0930 hours for 2.5 to 3 hours (depending on attendance) a clinic is conducted by a medical officer from Derby Health Service who, together with the Primary Health Care Nurse (RFDS) and accompanying allied health staff, is transported by the RFDS.

Kununurra

The communities located within and in close proximity to Kununurra are serviced by the East Kimberley Aboriginal Medical Service (EKAMS), the Kununurra Health Service (Community Health and the Kununurra District Hospital) and the North West Mental Health Service. Kununurra is the main centre for the East Kimberley and a reasonably comprehensive range of service is provided locally with fairly frequent visiting specialists from Derby. Primary care services and a range of other community health related services are provided by EKAMS and by the hospital. Ambulance services in Kununurra, as in Broome, are provided by the St John's Ambulance, unlike in other towns in the East Kimberley. Services in Kununurra will not be described in detail in this appendix.

Doon Doon

Doon Doon, located 115 kilometres south of Kununurra has a population of about 65 people, which can fluctuate between about 40 and 85, depending on cultural commitments and school terms.

The community's one kilometre access road off the Great Northern Highway runs through a creek bed and this inhibits access at times during the Wet season. During the Dry season, travelling time from Doon Doon to Kununurra, the major service centre, is about one hour. During the Wet season, departure from the community is often delayed until water in the flooded creek subsides.

The community has an airstrip located on "black soil" used only by the people who fly in to maintain the power house and subject to closure with only small amounts of rain.

The health service at Doon Doon is provided by EKAMS and has two AHWs (1.5 FTE) who staff the clinic Monday to Friday 0700 - 1400 hours. Each Aboriginal Health Worker is employed to work 6 hours per day and is rostered to work either from 0700 - 1300 hours or from 0800 - 1400 hours. The Aboriginal Health Workers do not provide an after hours service.

On alternate Wednesday a 3 to 4 hour clinic (depending on attendance) is conducted by a medical officer from East Kimberley Aboriginal Medical Service (EKAMS) who, accompanied by an Aboriginal Health Worker or registered nurse, travels to the community via road.

Warmun

Warmun, located 200 kilometres south of Kununurra and about 150 kilometres north of Halls Creek, has a population of 500, which can fluctuate depending on cultural commitments such as law and funerals. The population is mobile and travels mainly between Halls Creek and Kununurra.

The community is situated on the Great Northern Highway, yet despite being on a major highway there are often delays in travelling there during the Wet season due to the roads often being impassable for a number of hours at a time at creek crossings. Sometimes the delays extend to days, although this is less common. During the Dry, it takes approximately 2 hours via road, from Warmun to Kununurra, the community's major service centre and slightly less to Halls Creek, where people also travel reasonably often.

The community's unsealed airstrip is not "all weather'" and is subject to closure due to moderate rainfall. The airstrip has no portable lights so night use is prohibited. For emergency evacuations, the community has access to an "all weather" sealed airstrip at Argyle mine which is 50 kilometres south east via road (35 kilometres sealed highway and 15 kilometres unsealed road). Most client transfers are "half ways". This involves the coordinated transfer of a client from the Community Clinic Ambulance to the St John Ambulance at a location half way between Warmun and Kununurra. This transfer is coordinated by the on-call medical officer at the Kununurra Health Service.

The Warmun Health Clinic, which operates Monday to Friday, is staffed by a part time Aboriginal Health Worker (AHW) and two full time Remote Area Nurses (RANs) who also provide a 24 hour on-call, service 7 days a week. The RANs who reside in the community travel to Kununurra/Broome every 12 weeks, for their 5 day remote area leave when they are relieved by another nurse from the Kimberley Health Service.

Every Tuesday morning for 3 to 4 hours (depending on numbers attending) a clinic is held by a medical officer from the Kununurra Health Service who is transported by RFDS charter.

Wyndham

Wyndham is now the only town in the Kimberley without a community controlled health service and receives all its health services from the Wyndham Health Service (Community Health and the hospital) and other government services. Wyndham has a district hospital, the standard range of community health services and is only a one hour drive on a bitumen road from Kununurra, where more comprehensive services are available. Wyndham also provides

services to outlying communities and the ambulance service for the area is provided by the hospital.

Oombulgurri

Oombulgurri is located approximately 50 air kilometres north west of Wyndham and 120 kilometres via road. The population, according to the local health service, is approximately 300 which can fluctuate between 250 - 400 depending on cultural commitments such as, law and funerals. According to AAD, the average population is 230 and the minimum 62. The community members frequently commute by air or barge to Wyndham.

The unsealed road to Oombulgurri is closed during the Wet season (at least from the beginning of December to the end of March). During the Dry season, travelling time from Oombulgurri to Wyndham, the nearest service centre, is said to be about 12 hours over the 120 kilometre road. It is said "only keen four wheel drive motorists venture to Oombulgurri by road".

The community has an unsealed "all weather" airstrip located on low lying silt plains which is subject to closure following moderate to heavy rainfall. The airstrip has portable lights, for emergency use only, which require positioning along the strip, prior to the arrival of aircraft. Clients are either evacuated via RFDS to Derby Hospital or by mail plane or chartered plane to Wyndham Hospital. From Wyndham they may be transferred to Kununurra or to a tertiary hospital in Darwin or Perth.

The Oombulgurri clinic which operates Monday to Friday is staffed by a full time Remote Area Nurse (RAN), who also provides a 24 hour on-call service 7 days a week. The RAN who resides, in the community travels to Kununurra every 12 weeks for her 5 day remote area leave, when she is relieved by a health care professional from the Kimberley Health Service.

At the time of survey the Oombulgurri Health Service was without an Aboriginal Health Worker and the Wyndham Health Service has had difficulty filling this half time position. Funding for the half time AHW position was made available in June/July 1997 (funding re-allocated from Warmun Community Health Service). Prior to December 1996, Oombulgurri was funded for a full time AHW.

Every Thursday a 4.5 to 5 hour clinic (depending on attendance) is conducted by a medical officer from Wyndham Health Service, transported by RFDS charter.

Kalumburu

Kalumburu is located approximately 211 air kilometres north west of Wyndham and 515 kilometres via road. The population, according to the local health service, is approximately 400 and can fluctuate from 350 - 450 depending on cultural commitments such as law and funerals. According to AAD there is an average population of 240, a minimum of 190 and a maximum 400. When community members travel they usually have to travel by air, since road travel ranges from arduous to impossible depending on the season.

Road access to Kalumuburu is via Gibb River and the Kalumburu Road which are both unsealed and closed to heavy haulage vehicles (11 tonnes or heavier) and to small vehicles during the Wet season (beginning of December to the end of March). During the Dry season, travelling time between Kalumburu and Wyndham, the nearest service centre, is about 12 hours.

The Kalumburu unsealed airstrip, which is not "all weather", has areas which become flowing creeks after moderate to heavy rainfall. Kalumburu is also in one of the wettest areas of the Kimberley. The airstrip has portable lights, for emergency use only, which require positioning prior to aircraft arrival.

The Kalumburu Health Service is comprised of two Remote Area Nurses (RANs) and two Aboriginal Health Workers (AHWs), one of whom is employed full time. The other, who has graduated from AHW training, is contracted to work 20 hours per week, and would like to be employed full time but at the time of survey there was no funding for this position.

The clinic is open between 0730-1200 hours and 1300-1630 hours, Monday to Friday, staffed by both an RAN and an AHW. The RANs provide a 24 hour on call service 7 days a week. In 1998 the RANs alternated the on-call service every 48 hours although this may have changed since. The RANs work full time and have 5 days isolation leave every 12 weeks when they are relieved by another health care professional from the Kimberley Health Service.

Every Tuesday a 4 to 5 hour clinic (depending on attendance) is conducted by a medical officer from Wyndham Health Service, who is transported via RFDS charter.

Tables Summarising Services to Communities

(excluding generalist community nursing visits and Aboriginal health worker services)

Table 1 Visiting services to some major communities – East Kimberley

Name	Population#	Travel time**	Clinic Staffing (resident)			GP Visits	Specialist Visits						Allied Health Services Visits				Community Health Services Visits		Other Visits		
			Nurse (FTE)	AHW	AHW in training	(per week)	Paediatrician	Gynaecologist/ Obstetrician	ENT team	Ophthalmologist	Optometrist	Audiologist	Physio-therapist	Occupational Therapist	Speech Pathologist	Pharmacist	School nurse	Child health nurse	Dental	Kimberley Aged Care	NorWest Mental Health†‡
Doon Doon	65	1		2		1/2									1					9	
Kalumburu	400	12		2		1	2	1			1	1	4	5	5		2			5	12†
Mindibungu-Bililuna	120	2			2	1	5						1			2	3	0	4	16	*
Mulan	200	4.5			2	1/2	5				1					2	3		4	16	*
Oombulgurri	300	**			1	1	1				1		4	5	5		2			7	12†
Ringers Soak	120	2.5			1	1/2											4	4		2	
Warmun	500	2		1		1	3	3			3	1	6	9	9	1	7	12		6	*
Wirrimanu-Balgo	500	3.5			2	1/2	9		1	1		1	2	2		1	6	2	4	16	8†
Yagga Yagga	50	5				1/26															*

Travel time** = approximate dry season travel time in hours by road to nearest town , Oombulgurri rarely accessed by road – travel by barge or plane
† Mental health nurse visits - based on stated frequency rather than actual dates
‡ Psychiatrist visits fortnightly to Kununurra and Wyndham and 6 weekly to Halls Creek
* visits to these communities were not detailed separately but did occur in conjuction with visits to other communities or the nearest town

Table 2 Visiting services to some major communities – West Kimberley

Name	Population#	Travel time*	Clinic Staffing (resident)			GP Visits	Specialist Visits						Allied Health Services Visits				Community Health Visits		Other Visits		
			Nurse (FTE)	AHW	AHW in training	(per week)	Paediatrician	Gynae/ Obstet	ENT team	Ophthalmologist	Optometrist	Audiologist	Physio-therapist	Occupational Therapist	Speech Pathologist	Pharm-acist	School nurse	Child health nurse	Dental	Kimberley Aged Care	NorWest Mental Health†‡
Bayulu	400	0.15		1		1/4	*	*					14	14					2	*	*
Beagle Bay	250	2		1		1	5						7	3	4		8	10	3	4	26†, 8‡
Bidyadanga	700	3		1		1	4						6	6	4		12	14	3	11	26†
Dodnun	50	4.5		1		1/4	3										1			3	
Imintji	100	3		1		1/2											1			6	
Kupungarri	90	4		1		1/4	3										1		2	3	
Lombadina/ Djarindjin	250	3		2		1/2	4	1					3	5	5	1	10	4	2	5	26† 7‡
Looma	400	1.5		1		1	4	1					9	7	4		10		4	9	26†
Millagidee/ Kadjina	53	3																	2		
Mowanjum	300	0.1		1			*	*										24	school	2	*
Muludja	150	0.4				1/4	*	*											2		*
Ngallagunda	100	5		1		1/4	4										1		2	4	
One Arm Point	450	3.5			1	1/2	4						2	6	4		10	4	3	5	26†, 7‡
Wangkatjungka	275	1.5		1		1/2							6	4		1			2		
Yiyili	300	1.5	1	1		1													2		
Yungngora/ Noonkanbah	250	2		1		1/2							0	1					2		

Travel time** = dry season travel time in hours to nearest town
† Nurse visits - based on stated frequency rather than actual dates
‡ Psychiatrist visits fortnightly to Derby and four weekly to Fitzroy Crossing included services to surrounding communities
* communities close to town with reasonable access during town visits

Table 3 Visiting specialist services to towns in the Kimberley

Town	Specialist Visits														Allied Health Services Visits			Northwest Mental Health Services	
	Paediatrician	Gynaecologist/ Obstetrician	Surgical Consultant	Renal Physician	Orthopaedic Consultant & Registrar	Ear Nose Throat Team	Ophthalmologist	Optometrist	Physician	Rheumatologist	Dermatologist	Paediatric Cardiologist	Adult Echo Cardiologist	Audiologist	Physio-therapist	Occup-ational Therapist	Speech Pathologist	Mental Health Nurse	Psychiatrist
Broome	13	12	20	4	3	5	4	Services in town	8	2	2	2	1		Based in Broome	Based in Broome	Based in Broome	Based in Broome	Based in Broome
Derby	Based in Derby	Based in Derby	Based in Derby		3	5	4	4	4	2	2	2	1		Based in Derby	Based in Derby	Based in Derby	Based in Derby	26
Fitzroy Crossing	6	2		2	3	4	4	4	4		2		1		18	9	18	39	13
Halls Creek	7	3		2	2	3	4	1	4	0	2			1	12	16	16	26	8
Kununurra	21	19	16	4	8	13	14	3	8	3	2	2	2	7	Based in Kununurra	Based in Kununurra	Based in Kununurra	Based in Kununurra	26
Wyndham	7	4	1	2	2	3	3	4		2				1	*	*	*	52	26

* numbers of visits not provided – apparently frequent visits from Kununurra (shared positions).

Appendix 3: Estimates of Alcohol Consumption in the Kimberley

Estimates of per capita consumption of alcohol in the Kimberley were derived from the records kept by the Office of Racing Gaming and Liquor on wholesale purchases of alcohol by the operators of licensed premises. Other research has show that these data are the best available estimates of alcohol consumption. Table 1 presents purchases by beverage type for the financial years 1992–93 to 1996–97 for the Kimberley region and the state of Western Australia as a whole. Table 2 presents an estimate of the amount of pure alcohol contained in those beverages and per capita consumption of them among persons aged 15 years and over. Litres of each beverage type were converted using the following factors:

High beer	0.048
Low beer	0.035
High wine	0.119
Low wine	0.060

The category spirits includes both full strength spirits and pre-mixed drinks. The proportion of spirits sold as mixed drinks relative to full strength spirits has been increasing in recent years. Estimates of these changing proportions have been developed by Epidemiology and Analytical Services of the Health Department of Western Australia and are as follows:

1992–93	0.450	-	0.550
1993–94	0.474	-	0.526
1994–95	0.512	-	0.488
1995–96	0.548	-	0.453
1996–97	0.578	-	0.422

Estimates of the alcohol content of mixed spirit and full strength spirit beverages were made by multiplying the proportion of each type by the conversion factors:

Mixed spirits	0.060
Full strength	0.385

Given that there is some variation in actual alcohol content between beverages in each category, it is important to remember that the resulting calculations are estimates. For comparative purposes, what is more important than the estimates per se is the relative differences between those estimates.

The population denominator for the calculation of per capita consumption among persons aged 15 years and over for the 1996–97 financial year were the 1996 Census count of total persons in that age category and thus includes tourists. For the preceding years the population denominators were derived by averaging the change in the number of people in that category between the 1991 and 1996 Censuses and adding that average change to the1991 population for each subsequent year.

Table 1 Wholesale purchases of alcoholic beverages by licensees by beverage type by financial year, Kimberley Region and Western Australia

	92/93	93/94	94/95	95/96	96/97
Kimberley					
High beer	4,302,378	4,682,922	4,784,696	4,867,458	4,837,012
Low beer	2,126,458	1,967,520	1,863,507	1,988,765	1,985,220
High wine	899,591	871,014	727,087	782,512	810,573
Low wine	77,541	102,737	101,324	101,731	120,569
Spirits	172,372	225,892	221,878	303,129	310,123
WA					
High beer	110,879,740	111,579,705	116,206,627	114,859,005	117,024,620
Low beer	69,080,604	69,015,900	69,908,200	68,673,643	66,601,212
High wine	30,997,002	30,181,588	30,974,191	31,283,981	33,369,358
Low wine	1,979,216	2,313,430	2,657,125	2,407,067	2,940,058
Spirits	7,367,993	8,466,470	9,972,044	10,831,457	11,419,151

Table 2 Estimates of pure alcohol consumption by beverage type by financial year and estimates of per capita consumption among persons aged 15 years and over, Kimberley Region and Western Australia.

	92/93	93/94	94/95	95/96	96/97
Kimberley					
High beer	206,514	224,780	229,665	233,638	232,177
Low beer	74,426	68,863	65,223	69,607	69,483
High wine	107,051	103,651	86,523	93,119	96,458
Low wine	4,652	6,164	6,079	6,104	7,234
Spirits	41,154	52,170	48,503	62,834	61,141
Total	433,798	455,628	435,993	465,302	466,492
Pop >15 yrs	22,428	23,128	23,829	24,529	25,229
Per capita	19.3	19.7	18.3	19.0	18.5
WA					
High beer	5,322,228	5,355,826	5,577,918	5,513,232	5,617,182
Low beer	2,417,821	2,415,557	2,446,787	2,403,578	2,331,042
High wine	3,688,643	3,591,609	3,685,929	3,722,794	3,970,954
Low wine	118,753	138,806	159,428	144,424	176,403
Spirits	1,759,108	1,955,331	2,179,889	2,245,199	2,251,286
Total	13,306,553	13,457,128	14,049,950	14,029,226	14,346,867
Pop >15 yrs	1,237,988	1,263,458	1,288,929	1,314,399	1,339,870
Per capita	10.7	10.7	10.9	10.7	10.7

Appendix 4: Nindilingarri Cultural Health Vision for the Fitzroy Valley Aboriginal People

"We want to be responsible for our own health and we want to work on our health issues in our own way"

"We want the Government to work in with our new way"

Given a choice and adequate funding, the Aboriginal people of the Fitzroy Valley would wish to see a complete change in thinking and delivery of health services to their people. This statement creates a vision for the future in which Aboriginal people have control over their own primary health care and significant levels of authority over provision of secondary care. This vision firstly involves non-Aboriginal people admitting to the implicit value of Aboriginal people as the experts when dealing with cultural protocols, family/community networking, and communication.

Bearing in mind that 90 per cent of the population of the Fitzroy Valley is Aboriginal, the control and delivery of health services should be tailored to that fact, and the 10 per cent non-Aboriginal population should be catered for appropriately within that reform. Government funding bodies need to recognise the fact that a unique circumstance exists here as nowhere else in Australia, where the majority population is non-white and English is not spoken as a first language.

The vision of Nindilingarri that caters to these circumstances is expressed below.

PRIMARY HEALTH and COMMUNITY HEALTH
Nindilingarri should take control of most of the primary health care roles currently handled by Community Health. Employing Cultural Health Workers that work with other Professional staff delivering Primary health in a developmental way. Community Health would only have a small staff to deliver the Immunisation Program and Child Health, including Schools.

MAINSTREAM HEALTH
Nindilingarri would be recognised by Mainstream health as the Advisory board for all Aboriginal Health in the Fitzroy Valley and workable links between both services would be developed and kept to. The Hospital would continue to provide emergency care, in-patient care and some limited GP-type care, using Community based doctors.

LAND & BUILDINGS
Nindilingarri will have secured land and build a culturally and environmentally appropriate Health Building adjoining the Fitzroy Crossing Hospital. Primary and some secondary health programs, such as specialist units will then be developed and/or run from here. Having both buildings in such close proximity and adhering to the same regard for clients would create a seamless flow in terms of access and treatment between Hospital and Nindilingarri Building for clients needing to use both services.

DOCTORS
Nindilingarri would employ Doctors so that outpatients care for Aboriginal people in town can take place in a more culturally appropriate way. Nindilingarri could then contract the Doctor's time to the Hospital for in-patient care. Remote communities would have access visits from Doctors which they would have some control over. The Doctors employed by Nindilingarri would work with Nurses, Aboriginal Health Workers and Communities to develop holistic health strategies for prevention and education.

TRAINING
The old model of holding onto information and treating people needs to be dismantled. In place we want to be educating all Aboriginal people in self-responsibility so that as many

skills as possible will be available locally in remote communities. First Aid training would be available to all Aboriginal Organisations, Employees and Communities. Training of Aboriginal Health Workers should be ongoing, one AHW for every 10 families would be good, and 1 to 5 would be better. Our Doctors and Nurses will be supporting AHWs to do the health care in their own communities.

GENERAL EDUCATION
Nindilingarri would actively support all general health education in communities, encouraging people's interaction and responsibility for their own health by developing local based culturally appropriate health awareness material.

TRANSPORT
Every Aboriginal and non-Aboriginal person in the Fitzroy Valley would be funded to have free transport for routine health care, specialist care in other towns, and emergency evacuation both by air and road. Funding would also be provided for transportation of Aged clients around town.

ENVIRONMENTAL HEALTH
Nindilingarri would continue to have an environmental support team, which trains and supports Aboriginal Environmental Health Workers in Communities to deal with their environmental problems. The Pundulmarra Environmental Health Course owned by the Office of Aboriginal Health (developed by KAMSC in the late '80s and further developed since) would continue to run in Fitzroy Crossing at Karrayili Adult Education Centre for Kimberley Aboriginal people.

AGED CARE
Aged Care funding for Home and Community Care would be part of Aboriginal funding so that these very important programs are much more culturally appropriate, taking into account the needs and preferences of the Aged Aboriginal population in the Fitzroy Valley. Aboriginal people requiring nursing-home type care would be able to stay in Fitzroy Crossing.

STAFF HOUSING
As with other funded agencies there should be funding for staff housing. Aboriginal staff should not be discriminated against in terms of access to staff housing. Not all Aboriginal staff that are employed by Nindilingarri are from town, have relatives to live with or prefer to live in often overcrowded local community housing. Also Nindilingarri sometimes employs non-Aboriginal specialist workers in support roles and they and their families need to be housed.

CONCLUSION
Nindilingarri would continue to specifically include committee members from each Community and/or language group. Thus the link between the health care needs and health care services would be improved and strengthened, and most importantly Aboriginal people would then be given the right to independence over their own health care rather than the previous paternalistic approach. This offers a respectful approach to spiritual and cultural practices.

We would hope that an adequate time of say 10 years would be granted to appraise this new developmental model given that the pilot project has started with nearly all unqualified people. Health education courses continue to give us approximately 10 new people per year, and other staff are continually acquiring new skills and gaining experience. Also it needs to remembered that when we talk about the health of Aboriginal people being appalling that also includes workers and staff and that fact can sometimes be disruptive in terms of planning and programs.

We would envisage attracting more funding, both from our increased take-over of Community Health's role and also and acceptance of funding bodies that the budget figure of about $800 per person per year for all PHC services is an unrealistic distribution of funds across this diverse State. Given the remote access issues of distance and availability of services for both clients and professional health staff employed in the district, more money needs to be allocated to the Kimberley. Aboriginal people as a majority population need control over that funding directly relating to primary health care, so that the preventive and developmental health work with Aboriginal Communities can take place appropriately. It also needs to be understood that developmental work involves ever changing programs in answer to current needs, not static policies and inflexible outcomes, therefore any plans must have room for change as people develop and see other areas that need to be addressed. Unless Fitzroy Valley people are given the right to participate and work in holistic ways on their own health issues Aboriginal health is to improve

The ultimate goal is of clientele participation with their health needs; improved accessibility to secondary health services; and an improvement in the health status of Aboriginal people. We believe that our cultural links and knowledge are invaluable in our ability to provide the best primary health care service in the Fitzroy Valley.

PROPOSED STRUCTURE & STAFF REQUIREMENTS

NINDILINGARRI CULTURAL HEALTH SERVICE

Aged Care	***Primary Health***	***Clinical / Medical***
Culturally Appropriate HACC Town & Communities Service Hostel Short Term and Long Term Care Nursing Long Term Care	General Health Education Health Awareness Environmental Men's Health Women's Health Substance Abuse AHWs Training and Support	Town Based Out Patients Care Communities Clinical Based AHWs Training and Support
Staff Requirements	***Staff Requirements***	***Staff Requirements***
2 Nurses Coordinator 2 to 3 AHWs 6 to 8 Carers	3 Nurses 6 Cultural Health Workers Coordinator 2 Publication Officers Plumber 2 AEHWs in Nindilingarri 20 or more AEHWs in Communities	3 Doctors 4 Nurses 20 to 30 AHWs to be shared between all 3 areas

MAINSTREAM HEALTH SERVICES

Hospital Areas	**Community Health Areas**
In Patient Care of Sick People Delivery of Babies Specialists	Child Health Immunisations
Staff Requirements	**Staff Requirements**
Use of a Doctors Time for 3 Hours per day for 7 Days per week 3 Nurses Rotation of 2 AHWs	2 Nurses Use of AHWs in Communities

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