COMMUNITY PARTICIPATION IN GOVERNMENT AND PRIVATE SECTOR PLANNING: A CASE STUDY OF HEALTH AND TELECOMMUNICATIONS PLANNING FOR RURAL AND REMOTE WESTERN AUSTRALIA

by

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Abstract

This study was conducted in the context of health service planning in an environment of changing government strategies for regional, rural and remote area health care and telecommunications infrastructure planning in Western Australia. The study provides an account of the State Government of Western Australia’s planning for the implementation of a telecommunications network infrastructure, and specifically the Telehealth Project, conducted between 1998 and 2002.

The purpose of this study was to examine influences on community participation in planning within the dynamic political, economic and social forces that impact on the development of regional, rural and remote area health services. Specifically, the study outlines the issues and barriers in providing for significant local participation in projects that are centrally initiated and controlled. It examines the influences in planning for projects that incorporate local community based beliefs and needs, the requirements of collaborating with multiple state and national government departments, and the private sector.

This study was situated within the interpretive paradigm, and is conceptualised within Donabedian’s (1969) framework for assessing and assuring quality in health care. The methodological approach is bound within a case study and consists of a participatory action research approach. The research method uses the single case to undertake in-depth interviews, observations and a survey to collect data from community, government and industry members as a basis for reflection and action.

The findings of the study clearly indicated that there was consensus between all rural, remote and metropolitan area participants that telecommunications did offer the opportunity to provide increased, improved or alternative health services. However, there were a number of obstacles to the success of the planning process, including a lack of local community inclusion in planning committees, poor communication within central government agencies, overuse of external consultants, a bias toward the medical view, a limited scope of invitation to contribute, and local information being overlooked in the final implementation plan.

Analysis of planning for the Telehealth Project reveals the implications of organisational and political stakeholders making final decisions about outcomes; and provides a reminder of the importance of engaging communities authentically when
planning for health and telecommunications services which involve the public and private sectors.

The originality and significance of this study stems from understanding how technology can advance community health; through measures such as the use of community participation strategies, through authentic community based leadership, truly representative participants, decentralised decision making, a focus on community based health needs and change management strategies that include all of these. Consequently, the study advances knowledge of community participation in planning, and the evidence suggests implications for practice, education and further research.
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Importantly, I would like to thank my family in Adelaide for always being there for me and believing in me. Finally, I acknowledge my children, Elena and David, born during the journey of this study, and my constant reminders to look at what is truly important in life.
STATEMENT OF ORIGINALITY

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Angelita Maria MARTINI
GLOSSARY OF TERMS

**Telehealth Project:**
The (West Australian Department of Health) WADOH Telehealth Project is the title of the case on which this study is based.

**Site:**
Four towns were chosen for this study. Each is referred to as a site – Site A, Site B, Site C, and Site D.

**Site Implementation Plan:**
The Site Implementation Plan (SIP) is a summary of the data collected from each Site. The SIP is the final report of each site.

**Telehealth Project Plan:**
A summary of the Site Implementation Plans, presented to the WADOH.

**Telehealth Implementation Plan:**
The Telehealth Implementation Plan (TIP) is the final WADOH plan for telehealth services. It is the Telehealth Project Plan with amendments made by WADOH management.

**Bandwidth:**
A term used to describe a range within a band of frequencies or wavelengths. For telecommunications purposes it is expressed as the amount of data that can be transmitted in a fixed amount of time. In this case, it is expressed in kilo bytes per second or kbps.
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<td>OIC</td>
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<td>SIP</td>
<td>Site Implementation Plan</td>
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<td>STEP</td>
<td>State-wide Telecommunications Enhancement Program</td>
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<td>TIWG</td>
<td>Telecommunications Infrastructure Working Group</td>
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<td>TSC</td>
<td>Telehealth Steering Committee</td>
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<td>WA</td>
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CHAPTER ONE

INTRODUCTION

INTRODUCTION TO THE STUDY

This dissertation is about community participation in health service planning in the context of political, technological and social change. It is a participatory action research study that uses a single case to describe and analyse community participation in health service planning in an environment of government strategies for regional, rural and remote area health care and telecommunications infrastructure planning in Western Australia between 1998 and 2001. The case study provides an account of the State Government of Western Australia’s planning for the implementation of a telecommunications network infrastructure to provide telehealth services to remote and rural areas of Western Australia – The Telehealth Project (Health Department of Western Australia, 1997). The Telehealth Project was a government-initiated development, funded jointly by the state and federal governments.

In this context, the purpose of the study is to examine community participation in planning within the dynamic political, economic and social forces that impact on the development of regional, rural and remote area health services. Specifically, the study outlines the barriers and influences in providing for significant local participation in projects that are centrally initiated and controlled. It examines the issues in planning for projects that incorporate local community based beliefs and needs, and the requirements of multiple state and national government departments.

This dissertation does not seek to provide an in depth analysis of telehealth services, telecommunications technologies or to investigate the democratic process of government. Rather it presents an overview of planning for health and telecommunications services, illustrating the process of participation and decision making in government projects, and attempts to answer the question – why after so
many political, economic and technological debates has rural and remote Australia failed to acquire appropriate telecommunications, and subsequent health services?

Consequently, this study seeks to investigate and analyse:

- the expectations, needs and interests of community members living in regional, rural and remote areas of Western Australia in relation to health, telehealth services and the changes required to their local health service to meet these needs;
- how the government formulates strategic plans for implementation of telecommunications technologies (in this case, the Telehealth Project);
- the influences of incorporating community, government and funding body expectations and needs; and
- the influences on community and stakeholder participation in planning for the Telehealth Project.

The study findings also provide a basis for developing a planning model for the delivery of new technologies to regional, rural and remote Western Australia.

This introductory chapter briefly describes background and contextual influences, the genesis of my interest, the methodological approach used to undertake the study, the significance of the study and the structure of the dissertation.

BACKGROUND AND CONTEXTUAL INFLUENCES

This study involves a number of intricately woven variables which require description to contextualise the study and locate the participants within the broader social, cultural and organisational context. It is also important to provide an understanding of the government and political components. The background is also aimed at explaining why the methodological approach developed as it did.

This chapter explains three major developments: Australian rural and remote health initiatives, the Telehealth Project, and the expansion of Western Australian government telecommunications infrastructure. Further description of the organisational and political context links the three developments together. The necessity for community participation in planning with remote and rural areas completes the contextual influences.
Rural And Remote Health In Australia

Approximately six million (or 31 per cent) people in Australia live in rural and regional areas, and approximately 650,000 (or 3 percent) live in remote areas (Australian Bureau of Statistics, 2003). Of Australia’s Aboriginal and Torres Strait Islander population, 49% live in rural, regional or remote areas (Australian Bureau of Statistics, 2003) and many experience both cultural and language barriers when accessing services in the community. Remote Australia makes up 78 per cent of the landmass (Dade-Smith, 2004). The areas of remoteness in Australia are presented in Figure 1.1 below.


**Figure 1.1 Remoteness Areas Across Australia - 2001**
Generally, the health status of Australians across rural, regional and remote areas is lower than in metropolitan areas (Australian Institute of Health and Welfare, 2006; Australia. Commonwealth Department of Health and Aged Care, 2000a; Australia. National Rural Health Policy Forum & National Rural Health Alliance (NRHPF & NRHA), 1999) with overall age standardised death rates and hospitalisations due to injury and major disease higher than in the metropolitan areas (Australian Institute of Health and Welfare, 2006). There are considerable health status differences between people, both Aboriginal and non-Aboriginal, living in rural places, compared with those in metropolitan areas (Australian Institute of Health and Welfare, 2006). Aboriginal and Torres Strait Islander peoples continue to have poorer health than the general population, with life expectancy at birth being seventeen years lower (Australian Bureau of Statistics, 2003; Edwards & Madden, 2001).

In many rural and remote areas of Australia, health care is not only inadequate, but non-existent (Australia National Rural Health Policy Sub-Committee & National Rural Health Alliance, 2003; Britt, Miles, Bridges-Webb, Neary, Charles & Traynor, 1993). There is inequitable access to health services, which spans a number of dimensions (Australian Institute of Health and Welfare, 2005). These include: availability, acceptability, geographical accessibility, and relative affordability (Australia Commonwealth Department of Health and Ageing, 1994). Additional factors such as cultural diversity, and problems with staff recruitment and retention, aggregate to create difficulties in the provision of equitable health services for all Australians (Dade-Smith, 2004; Gray, 1993).

Throughout much of rural and regional Australia there is a shortage of health care providers, high turnover in the health workforce, and major problems in gaining access to health services. This includes access to preventative health and health education services provided in urban areas. These problems are worse in remote areas (Australian Institute of Health and Welfare, 2006; National Rural Health Policy Forum & National Rural Health Alliance, 1998). Consultations with health professionals in these areas tend to be mainly for urgent problems, with some remote areas showing per capita use of services under Medicare as only one-quarter of the national average (Australia Commonwealth Department of Health and Ageing, 2000a). Issues of healthy ageing and support for children have been identified as needing special attention and are significant for both rural and remote areas. Overall,
people living in rural and remote areas of Australia remain disadvantaged in relation to their access to health care services (Humphreys, Hegney, Lipscombe, Gregory, & Chater, 2002). The unique health concerns for people living in rural and remote Australia can be directly related to their culture, living conditions, social isolation, socioeconomic disadvantage and distance from health services (Dade-Smith, 2004).

In a review of recommendations from four biennial national rural health conferences, nearly a decade ago, Clark and Martini (1997) identified seven issues of fundamental concern for rural health stakeholders. These were: workforce issues, local management, service delivery, research, public health, Aboriginal health, and health service organisations. These issues remain today and are reinforced by the Productivity Commission (2005):

“...The importance of providing appropriate, sustainable, high quality health care to all Australians, regardless of their socio-economic circumstances or geographical location is paramount” (cited in Liaw & Humphreys, 2006, p.95).

Currently, people residing in rural and remote areas are often required to travel to larger centres for specialist health treatment. State governments have differentially supported this travel in the form of patient assistance travel schemes (Health Department of Western Australia, 1998c). Due to funding cutbacks at the federal and state/territory levels over the last decade, alternative approaches to providing this care have been sought. Strategies have included telemedicine or more broadly, telehealth (Liaw & Humphreys, 2006; National Health Information Management Advisory Council, 2001; LaMay, 1997), a support strategy for health service delivery to rural and remote areas. Telehealth, which includes telemedicine, is defined nationally by the Commonwealth Government of Australia as:

“...the delivery of health care services and the exchange of health care information across distances using telecommunications and information technology” (Australian New Zealand Telehealth Committee, 2002, p.1).

Rural And Remote Health In Western Australia

As in other states of Australia, there is evidence that people living in rural and remote communities in Western Australia have poorer health than their metropolitan counterparts (National Rural Health Policy Forum & National Rural Health Alliance, 1999). Numerous health indicators indicate the health inequality is a reflection of the
remoteness of Western Australia. In Western Australia over 30% of the population live outside major cities (Australian Bureau of Statistics, 2003), with sixty percent of the Aboriginal and Torres Strait Islander population living in rural, regional and remote areas (Australian Bureau of Statistics, 2003).

In rural and remote areas of Western Australia, health service providers are grouped into regions, and are governed differently – some regions are governed by one board, while other regions have a board for each health service provider (Health Department of Western Australia, 2001). It is not clear in the government literature how decisions on governance are made. What is evident is that decisions involving structures for health are changeable and result in differing regional boundaries for service provision. Western Australia also has difficulties with health workforce attraction and retention in rural and remote areas, leading to a shortage of nurses, general practitioners and medical specialists. There are also problems addressing the special needs of Aboriginal and Torres Strait Islander people (Health Department of Western Australia, 2003). Health professionals working in these areas are often overworked, lack professional and social contact with peers, and find cover for holidays and professional education difficult.

The Human Rights and Equal Opportunity Commission (1999) state that “distance, isolation, lower incomes and minority status all exacerbate the experience of discrimination, harassment and a lack of services” (Dade-Smith, 2004, p. 75). This is particularly pertinent for people living in the remote north west of Western Australia, where it has been suggested by the Health Department of Western Australia (1998a) that this population experience significantly worse health status than other Western Australians, and “that the health status of the population will deteriorate further unless corrective action is taken” (ibid, p. 1).

A state government strategy

To address the worsening health trends and with the aim of achieving a health status experienced by other Western Australians, the North West Health Service Plan was developed (Health Department of Western Australia, 1998a). As one of its terms of reference, the Norhealth 2020 Position Paper detailed the need for the utilisation of “emerging technologies that can be applied to improve access to services and to enable alternative approaches for the delivery of primary health care”
(Health Department of Western Australia, 1998a, p.1). This need was again acknowledged by HDWA in the 2003 Country Health Service review, which stated that the enhancement of services should be increasingly possible using telecommunications technology and telehealth (Health Department of Western Australia, 2003).

This new approach recognised the necessity for ongoing development and adoption of innovative and flexible service models. This includes being cognisant of the diversity between health service regions, and that health services in country areas are a “part of an extremely complex system of government, non-government and private service providers” (Health Department of Western Australia, 2003, p. 16), thereby requiring differing approaches and priorities.

Concurrent with the planning for the northwest region of the state, the WADOH established community links with people living in other Western Australian rural and remote areas. As part of this process, the social contexts, health needs and technology requirements of people were determined. This was later to be known as the Telehealth Project.

**WADOH Telehealth Project**

Telehealth, or the use of communications technologies to transmit health related information over a distance, has the potential to make a positive difference in the lives of West Australians, and improve the delivery of health care to remote and rural areas (Shearer & Macaulay, 2004; Australian Rural Health Research Institute, 1996). Electronic health services have been noted to improve equity of access to health services, education and information for rural people, including community members and health professionals (Humphreys, 2002).

As in almost every other country in the world, new and rapidly emerging communications and information technology developments are occurring in a health context that is facing unparalleled pressures for a reduction in costs and the increasing demand for improved patient care (Australian Government Department of Communications, Information Technology and the Arts, 2004; National Telehealth Committee, 1998; University of Wollongong, 1998). Global health industry trends show the common need for integrated services and a continuum of care to improve quality, whereby patients and community members receive continuous care in an
appropriate setting from a network of multi-disciplinary providers in acute hospitals, community based facilities and home based care (Bushy, 2005).

To achieve this, health industry issues needed to be addressed including the escalating costs of delivering high quality care; inadequate access to primary and specialty care for segments of both rural and urban populations; duplication of expensive facilities and infrastructure; and access to current, relevant and accurate information for both providers and consumers (Marshall, 1996). However, the emphasis on cost cutting and downsizing has had a “detrimental effect on the quality of care and sometimes on patient outcomes” (Bushy, 2005, p.261).

This situation was recognised by staff within the West Australian Department Of Health (WADOH), who identified that new opportunities were offered by telecommunications, interactive multimedia technology and information technology to transform the quality, efficiency and effectiveness of health service delivery, management and administration, and to address some of the problems of access to and equity in health services. In their assessment, for telehealth applications to integrate successfully with existing health services, the Telehealth Project in Western Australia needed to address three major issues. These included first, the need for extensive community consultation; second, the lack of a suitable, economically costed communications infrastructure to support Telehealth; and third, a tendency for telehealth to follow a medical model of health care based on the management of illness rather than the maintenance of health (Gott, 1994).

In 1995 the WADOH began reviewing opportunities for telehealth services to rural and remote Western Australia. This review involved consultation with rural and remote community members, an investigation of opportunities for funding, and an evaluation of existing telecommunications capacity. Due to the recognised lack of communications in WA to support any telehealth applications, discussions were commenced with private industry on telecommunications service delivery.

Planning for telehealth services by WADOH commenced in June 1997 with meetings of key rural and remote area stakeholders. In December 1997 WADOH formed the Telehealth Project Team, later to be named the Telehealth Development Unit.

Subsequently, sources of funding were identified, and in January 1998 an application was submitted to the Commonwealth Government’s Regional Telecommunications Infrastructure Fund (RTIF) Networking the Nation program,
through the Department of Communications and the Arts. RTIF Commonwealth government funding was officially confirmed in November 1998. During this time, an agreement was reached between two State Government departments (West Australian Department Of Health and the Department of Commerce and Trade) to second the Telehealth Team to the Office of Information and Communication (OIC).

Twenty rural and remote sites were chosen, with nine in Phase 1, to include a network of communities within one health service area and include different types of health facilities. Consultation with people from the sites commenced in June 1998, and determined community needs, project deliverables and the scope of requirements. Continuing discussions with private telecommunications providers were directed at meeting the identified requirements of the rural and remote communities, and delivering a communication network that was accessible by the public and private health sector, ensuring privacy and security of confidential information, and allowing the transfer of data, video and voice in a system.

In July 1999 the Telehealth Project Team completed a report of each site’s requirements (Site Implementation Plans, SIP), which was summarised and produced as the Telehealth Project Plan. This plan was subsequently amended at WADOH management meetings, to become the WADOH Telehealth Implementation Plan (TIP). This was endorsed by the Telehealth Steering Committee for implementation in rural and remote areas of Western Australia to commence in 2000.

**WA Government Telecommunications Infrastructure**

During the review of opportunities for telehealth services to rural and remote areas, the Health Department of Western Australia acknowledged the lack of a suitable, economically viable and reliable communications infrastructure to support Telehealth (Marshall, 1996). The need for an appropriate communications model was identified that considered Western Australia’s enormous size, very scattered non-metropolitan population, and the fact that most of the medical expertise was concentrated in the metropolitan area. The communications infrastructure needed to deliver telehealth services that reduced the cost of health outcomes (technical efficiency); resulted in more appropriate service provision (allocative efficiency), and/or improved access to services (equity) (van Gool, Haas & Viney, 2001).
Through community and industry consultation, WADOH identified common aggregated telecommunications requirements, and subsequently designed a telecommunications infrastructure model and telehealth service. This resulted in the release of two Health Department of Western Australia documents - West Australian Strategic Plan for Telehealth (Marshall, 1996), and an international Expression of Interest for telecommunications bandwidth (Health Department of Western Australia, 1997). This Telehealth project aimed to provide rural and remote communities with a modern, sustainable and economical telecommunications network. The basic infrastructure was to consist of a system that integrated fixed and mobile phones, fax, data, Internet, video services, broadcast television and radio media, and network management. Local community connections were to be made to health facilities for telehealth, and a community-based videoconferencing infrastructure established at a community chosen and managed site.

The telecommunications network was to enable the delivery a wide range of services for community members and health professionals, including clinical consultations, counselling, communications, administration, professional and personal support, education, training, medical image and data transfer, information access and a wide range of other community activities. In addition, the network was to have the capacity to provide other services. These could include community access to legal advice, education, training, job interviews, counselling, Federal and State government departments and services, banking and commerce, personal finance information, meteorological information, on-line services, and agriculture advice (Health Department of Western Australia, 1999b).

The Organisational And Political Context.

As part of the Telehealth Project, the WADOH planned for the implementation of a telecommunications network infrastructure. To facilitate this, discussions were commenced with the Office of Information and Communication (OIC), a group set up in late 1997 within the State Government’s Department of Commerce and Trade (DCT) to coordinate telecommunications throughout Western Australia (WA).

In July 1998 the Telehealth Steering Committee (originally the Telehealth Working Group) was established to oversee the Telehealth Project, incorporating
WADOH and OIC staff. In September 1998 a workshop was conducted between WADOH and DCT to refine the Telehealth Project’s aims, and the terms of reference of the steering committee; clarify working relationships and arrangements between WADOH and OIC; set key deliverables and timelines; and to ensure understanding of funding arrangements. A follow up meeting later in September defined the Telehealth Project’s scope, boundaries and milestones, reviewed the draft business case, and the relationship between WADOH and DCT. However, a number of issues were not clear, including the boundaries relating to telecommunications; control of funding, and where official ownership of the project sat.

In October 1998, under State Government ministerial direction, the Telehealth Project Team co-located with the Office of Information and Communication to expedite introduction of a state-wide telecommunications strategy. At the same time the State Telecommunications Strategy (incorporating the Telehealth Strategic Plan) was submitted to the West Australian State Government Cabinet for approval. The State-wide Telecommunications Infrastructure Working Group (TIWG) was established in November 1998 to aggregate state wide telecommunications requirements of the major government departments. Funding from the RTIF Networking the Nation program for the Telehealth Project contributed toward costs of the aggregation and had outlined expectations and involvement by the national government.

### Community Participation In Planning

The underpinning premise to this thesis is that community participation in all areas of planning, implementation and evaluation is essential to ensure the success of a health project or program. The trend toward greater community involvement in health care decision making is evident in the literature (Anderson, Shepherd & Salisbury, 2006; Abelson, 2001; Redden, 1999) and includes widespread consensus amongst policymakers about the importance of participation in planning. As governments around the world adopt the concept of community participation in health care, it has become a principle underlying policy (Morgan, 2001), ensuring that participation is merged into policy and planning at the local, national and international levels (Kahssay & Oakley, 1999).
Participation in planning for health programs and services can be seen as a means to achieve a set objective or goal, or as development activity in itself (Baum et al, 2000; Legge, 1990).

“Participation may also directly affect individuals by changing attitudes and actions towards the causes of ill-health, promoting a sense of responsibility and increasing personal confidence and self-esteem. Involvement in the policy process may decrease alienation among socially excluded groups and reorient power relationships with the “professional” decision-makers” (Morone & Kilbreth, 2003, p.274).

To enable an increased opportunity for participation, Ismael (2002) and Maloff, Bilan and Thurston (2000) describe the relationship and the interaction of social, economic and environmental variables in communities as essential. Parker, Margolis, Eng & Henrique-Roldan (2003) and Ismael (2002) propose a model using a community-based participatory action approach which recognises the value of involving intended beneficiaries such as local residents and organisational staff.

Successful participation recognises that a number of critical issues are addressed. These include the organisation’s and individual’s skills in working with community groups, the extent of communication and planning with other groups serving the same community, and the level of community participation in organisational planning (Parker et al, 2003). Focus is also needed on the purpose (Baum, 2000), goals and objectives of the participation, and the characteristics of participatory techniques (Wiebe, MacKean & Thurston, 1998). Contextual influences to participation also need to be addressed, and these include the large number involving external funding sources, the imposition of funding agency guidelines on the communities, the amount of guidance by experts and the methods of collecting data to monitor the participatory process (Naylor, Wharf-Higgins, Blair, Green & O’Connor, 2002).

Additional critical issues need to be considered for successful community participation including the evaluation of participation, variations in the meaning of community and participation among participants, and the complexity of evaluating participation in a multi-level project that progresses over a multiple year time period (Naylor et al, 2002).
GENESIS OF MY INTEREST

My interest in rural and remote health originates from my early life experiences. I was born and raised in a remote mining town in Australia, before moving to a major capital city for my formal primary and secondary education, then undertaking university studies in science, and eventually nursing. I returned to remote and rural areas where I lived and worked in a variety of roles, including practising as a remote area nurse, indigenous health worker educator, and as an educator for correctional services. I later maintained my involvement with rural and remote areas through research and teaching in higher education institutions.

I followed the rapid rise of technology in health with both interest and dismay. The potential was enormous, but I felt that who had control over initiatives requiring such high costs could potentially negatively or positively change how health services were delivered to rural and remote groups. At national rural health meetings it seemed technology was a big issue for the powerbrokers only – I wanted to know how the people at the local level were being involved. I wanted to not just be a tourist, but be involved and hopefully provide a positive contribution.

My interest and support for marginalised and disadvantaged groups originated as a child of immigrant parents, growing up with English as a second language and ‘doing things differently’, and from the values passed on to me by my parents. These experiences were focused when living with indigenous people in very remote areas.

SIGNIFICANCE OF THE STUDY

This study is significant in five ways: First, despite the rapid development nationally and internationally of telehealth services, no studies were found which comprehensively evaluated telehealth from a community participation framework, or within a social model of health (U.S. Department of Commerce & Department of Health & Human Services, 1997). The proposed study was therefore considered both significant and timely. Since the commencement of the study, there have been limited publications that have studied the social impact of telehealth (Saab et al, 2004; Canadian Society for Telehealth, 2003), and, only one paper has discussed
prioritising the use of community based solutions to community health using technology (O’Callaghan, McAllister & Wilson, 2005).

Second, by involving community members in the planning process, this study helped to provide in-depth analysis of the contribution telehealth could make to improving health services for people living in rural and remote areas. The study sought to understand the needs of community members living in regional, rural and remote areas of Western Australia in relation to health, telehealth services and the changes required to their local health service to meet these needs; how the government formulates strategic plans for implementation of telecommunications technologies (in this case, the Telehealth Project); the issues of incorporating community, government and funding expectations and needs; and the levels of community and stakeholder participation in planning for the Telehealth Project.

Third, by revealing community and health professionals’ expectations, needs and interests during the process of planning and development, strategic directions were identified which can be used to plan services in the context of the social determinants of health; that is, including social, legal, geographic, cultural, political and regulatory issues.

Fourth, using inductive processes from the study’s findings a model has been developed to guide the involvement of community members and evaluate their level of participation in the application of technology to health service delivery. The model focuses on the exchange of information in rural and remote areas to support providers and community members as partners in this health service, and to bring health related expertise more directly to rural and remote areas of Western Australia.

Lastly, recommendations have been developed to enable community participation in planning for the application of technology to health service delivery. The recommendations focus on the delivery of information to rural and remote areas, as well as the consultation, collaboration and empowerment of community members to become authentic partners in health decision making in rural and remote areas of Western Australia.

**OPERATIONAL DEFINITIONS**

The terminology used in this thesis to describe the participants, structures, processes and outcomes of community participation in planning for health
technologies is derived from the areas of health and telecommunications. Because these terms are not widely used they are listed prior to the commencement of Chapter one to guide the reader.

**STRUCTURE OF THE STUDY**

This chapter presents the focus, background and significance of the study and locates the participants within the broader organisational and historical context. Chapter two, the literature review, reviews existing definitions and interpretations of community participation in planning as described and critiqued in academic literature and official documents. This literature derives from sources such as State and Commonwealth government submissions, policies, reports and publications, minutes of meetings, academic and disciplinary viewpoints, and local shire reports.

Chapter Three identifies the methodological approach to the study, provides a conceptual framework within which the study is situated, and describes its suitability for the purposes of the study. The research processes include capturing participant experiences and coding the data for elements and themes. This is outlined within three stages - research design, participant engagement, and evaluation. This chapter also provides a description of the ethical considerations underpinning the study and the measures taken by the researcher to ensure the rigour and trustworthiness of the findings.

Analysis of the findings from the research process is presented in Chapter four. Participants’ descriptions and interpretations are contextualised, to locate the interpretive account in the broader social and academic world to compare and contrast with existing interpretations. The final Chapter examines the case study findings in the context of an analysis of issues against successful project implementation and the key influences on community participation in planning. The conclusion to this thesis draws the layers of discussion together in order to support the contention that empowering community participation is essential for the success of projects. The thesis concludes with an exploration of the implications of the study for government policy, health care practice and future research.
CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION

This literature review has three purposes. First, it will critique studies on the use of information and communication technologies for health. Second, it will situate the study within the debate surrounding models of health service delivery. Third, it will review the rapidly growing body of research on community participation and participatory health planning which led to the call for greater participation. The call for participation is then contextualised within social, structural, institutional and political influences. This discussion is followed by an examination of the main trends and critical issues in community participation in planning. Having considered participation in health planning, this chapter proceeds to discuss other determinants and influences which have an effect on planning for technologies within the health sector and the processes for community input. This is followed by a synthesis of perspectives on participatory planning and of participatory processes in planning for the implementation of health technologies.

Critique of the literature will serve to demonstrate three propositions upon which this study was founded. First, technology alone does not solely determine outcomes. Second, health is presently and historically embedded within a medical paradigm, yet a social perspective of health is required to improve quality health outcomes. Finally, contemporary thinking suggests that individuals and communities must be included as partners in all areas of planning, implementation and evaluation of health care services.

Cumulatively, the literature review will illustrate an important premise of this study; that there is a paucity of research on the structural and process factors that impact the use of a community participation approach to successful implementation of telehealth in rural and remote areas. Analysis of these factors is poorly understood. In this respect, this research makes a significant contribution to knowledge.
HEALTH TECHNOLOGIES

The following section will review and critique the literature surrounding telehealth, the issue of technological determinism, and technology in policy planning.

Telehealth

The terms telehealth or telemedicine are relatively new, having been coined in the early 1990s. However, activities associated with communication technology are not new to Western Australia. One of the first examples of telehealth was in 1917 when Postmaster F.W. Tuckett in Halls Creek operated on an injured stockman with abdominal injuries after the surgeon Dr J.J. Holland sent Morse code instructions from the General Post Office in Perth (Marshall, 1996). In 1927, the Royal Flying Doctor Service started using pedal radios to communicate to remote settlements in Australia. In recent years, technological advances in telecommunications, broadcasting, multimedia and computing, patient monitoring and diagnostic equipment have made new telehealth applications possible.

Hilty et al (2006), in a study evaluating successful models of psychiatric consultation with rural primary care providers in the United States of America, and Clark (1996) in a descriptive analysis of Australian telehealth projects, found that telehealth technologies such as the telephone, videoconferencing, tele-imaging and multimedia enable links to be established across vast distances in four priority areas: service delivery, upgrading skills, education and support for providers and consumers, and administration.

When this study commenced, application of telehealth technologies was found to enable rapid access to diagnosis (Armstrong & Haston, 1997; Jennett, Wantabe & Hall, 1995) and specialist consultative services have (Serenci, Hirsch, Levy, Skawinski & DerBoghosian, 1996). This remains the case today. For example, Bynum, Cranford, Irwin & Banken, in a 2006 survey of clinical consultations in the United States, reported changes in diagnostic and treatment plans as a result of telemedicine sessions. Also in a study of West Australian telehealth consultations between 2002 and 2003, Dillon, Loermans, Davis and Xu (2005) collected data from log-sheets, project reports and interviews and found that the
majority of diagnostic and specialist clinical services were for mental health, diabetes, wound management, speech pathology and renal medicine.

Telehealth technologies have been shown to provide opportunities to access information and distance learning, to enable sharing of resources and to reduce professional isolation (Hilty et al, 2006). By providing these services and opportunities which would otherwise be unattainable, the telehealth approach to health service delivery reduces inequities.

While the number and scope of telehealth and telemedicine projects and applications world-wide are growing rapidly (Eminovic, Witkamp, deKeizer, & Wyatt, 2006), “along with exponential expansions in national and international information infrastructures and computer capabilities to support them” (Ferguson, 1995, p.35), application to remote and rural areas of Australia has been limited, with Western Australia supporting only a small number of privately owned tele-radiology services.

There is also limited research that comprehensively evaluates all the suggested benefits of the applications, an issue recognised by the U.S. Department of Commerce and Department of Health and Human Services in their Telemedicine Report to Congress (1997). Instead, studies evaluate individual components of the application, such as a resultant decrease of referrals to hospital emergency departments (Monier et al, 2003; Shanit & Greenbaum, 1997). This is reinforced by Gagnon & Scott (2005), in a review of e-health (telehealth and health informatics) publications, found that the majority of evaluations focus on disease and injury and fail to include social determinants of health. However, Shore, Savin, Novins and Manson (2006) in a study of the cultural aspects of telepsychiatry in five states of the United States of America using a descriptive method found that there were problems with the technologies and different cultural groups.

In July 1998 the Commonwealth Government of Australia released the report *Fragmentation to integration: the telemedicine industry in Australia* (Mitchell, 1998). Five national workshops followed to discuss key themes, which led to the preparation of the report *From Telehealth to E-health: The unstoppable rise of E-health* (Mitchell, 1999). The report argued that telehealth is limited by positioning outside mainstream health care and telehealth should be absorbed into the mainstream of health. As Chapter four will demonstrate, this remains the case today, at least in Western Australia.
Liaw and Humphreys (2006) discuss a number of reasons for the failure of electronic health applications and the suboptimal implementation and use of the technologies in rural areas of Australia. These are:

- Policy and legislation that is nationally inconsistent.
- Funding for implementation plans that is inappropriate.
- Policies and strategies that focus on hospital systems rather than rural health programs.
- Projects that are fragmented and uncoordinated.
- Rural technology infrastructure that is inadequate and costly.
- Lack of a common language to describe activities for patients and clinicians.

Methodological approaches for research on technologies implemented to improve health outcomes are vast and varied. However, study methods have been criticised for poor methodological quality. For example, a qualitative analysis of thirty two studies of patient satisfaction with telemedicine in peer reviewed journals, found methodological deficiencies in sample size, context and research design affecting the validity and generalisability of results (Mair & Whitten, 2000). Similarly, Whitten, Mair, Haycox, May, Williams & Hellmich, (2002) concluded that findings of published peer-reviewed research studies investigating the utility and cost effectiveness of telemedicine, were not founded on strong evidence, and therefore could not substantiate the claim that telemedicine was a cost effective means of delivering health care.

In spite of this weakness, it is well recognised that telecommunications improves access to health services, supporting the need for enhanced, affordable telecommunications to support the health services in rural and remote communities (Shore & Manson, 2005). However, to function at adequate levels, telehealth applications also require a telecommunications infrastructure which, in most instances, is not available in rural and remote areas, as explained by Bushy’s (2005) claim that;

“investing in an ICT (Information and Communications Technology) infrastructure has enormous potential to enhance health and health care over the coming decade” (Bushy, 2005, p.261).

Although there has been a dramatic increase in telecommunications investment in the past decade, there are still enormous gaps in accessibility to telecommunications between urban and rural areas internationally (Shore & Manson,
Problems associated with the existing telecommunications in remote parts of the industrialised world, include a lack of capability, reliability, cost and aggregation problems, such as the lack of compatibility and interconnectedness between the technologies used by various services and communities (Liaw & Humphreys, 2006; Hudson, 1999). Remote users are also unable to take advantage of converging technologies and new services available to metropolitan residents, simply because they are not available in rural and remote areas.

Universal access to basic, reliable communications has been advocated since 1984, as reflected in the call for a ‘Global Information Infrastructure’ by the Independent Commission for Worldwide Telecommunications Development; in 1995 by the International Telecommunications Union; and in 2006 by Rosenthal, in a review of wireless communications and patient care. The underlying rationale is that universal access to information is critical to the development process (Hudson, 1999; Parker & Hudson, 1995). However, development is not just about technical improvements, but the development of community capacity to plan for, and implement technologies. The literature exposes two schools of thought: First, that providing more information will increase the knowledge of the local people; and second, that development needs inclusion of local people (Baum et al, 2000; Oakley, 1989).

**Technological Determinism**

The use of technology in the health care industry is increasing, and the influences shaping its development and use are complex. It is important to understand how technology and society influence each other and then be able to use this knowledge to work with communities in order to make decisions on technological issues, and to shape public policy.

It has been acknowledged by researchers that technology shapes and is shaped by society (Oudshoorn & Pinch, 2004; Hovenga, Kidd & Cesnik, 1996), and that there is a need for a recognition of the interrelatedness of technology and everyday life (Keel, 2006). The main debate surrounds whether technology itself has the power to effect change, and whether technology’s power to effect change is
derived in the socioeconomic, cultural and political arena (Meso, Datta & Mbarika, 2006b; Smith & Marx, 1996).

Current debates surround whether any change associated with technology is attributable to technology itself (or some of its intrinsic attributes). This draws into question whether the advance of technology is necessary for change to take place. A response is that no technology has ever initiated an action not pre-programmed by human beings, and therefore technology should not be given the status as a change agent. It is people who construct change, and they do so within the circumstances transmitted from the past (Smith & Marx, 1996). This means that the history of technology is the history of human actions (Bimber, 1996) and technology is an important influence on history only where societies attach cultural and political meaning to it. Therefore, change is deeply embedded in the larger social structure and culture, and subsequently, technology can be divested of its presumed power as an independent agent initiating change.

In summary, technological determinism, the premise that technology is placed at the centre of the process and considered to be autonomous and deterministic (Hughes, 1996), should not be given the status of being the sole determinant of outcomes. Similarly, in the medical model of health, medicine is considered central to health and well-being, often claiming sole responsibility for results. Like the medical model of health, technological solutions respond only to immediate issues. To understand the origin of a certain kind of technological power, there needs to be an examination of the participants and the locus of historical change and the complex social, economic, political and cultural matrix. As the utilisation of technologies is largely determined by a community or society’s culture and structure (Kline, 2004; Herbig, 1994), by involving communities through consultation, strategies can be developed to facilitate empowerment of individuals and communities, and improve health outcomes (McWilliam & Ward-Griffin, 2006). The importance of information and communication technologies is acknowledged by Phipps (2000) who states that:

“Applied to enhance access, choices and social participation, new communications technologies can be a conduit for social inclusion – resting on our societal and strategic choices. Our society can consciously choose to give this conduit a role (Phipps, 2000, p.64).
The links between technical change and social and political relations are under investigated, therefore providing opportunity for this study.

**Technology And Policy Planning**

To make technology policies more responsive to social concerns it is essential to address two fundamental shortcomings. First, the need to expand opportunities at the grassroots level, that is, for community groups and individuals to be involved in all aspects of decision making; and second, to address government policies that presently do not address the range of effects of technologies (Citizens Panel on Telecommunications and the Future of Democracy, 2004).

Technology policies are customarily framed by representatives of four groups: business, the military, and universities (Sclove, 2004) and government administration, with community groups often excluded. Policy making can impact positively if a balance is developed and maintained between these groups. A negative impact comes about if there is a conflict of values between these groups, such as if: industry promotes economic expansion at all costs; managers consider community input as an intrusion on their business; and the attitude prevails that “we know …what served the public best” (Hirsh, 2003, p.154). Positive outcomes can be achieved if management is able to shift its values to those which complement the community’s values. This can be achieved through open and transparent communication between all parties involved. Schot and de la Bruheze (2006) and Throgmorton (1991) believe that it is the responsibility of policy planners and analysts to actively mediate between the parties to achieve this.

Active mediation between scientist, politicians and community members enables the construction of to “a larger community that is technically competent, legitimate and politically astute” (Throgmorton, 1991, p.156), and construction of a new normal discourse. The potential effect of the new technologies on these groups needs to be anticipated by policy makers; for example, the effect of telemedicine services on a rural General Practitioner’s business. Various models have been designed to depict the effect of technologies, however most do not consider the interplay between society, management, economics and engineering, and do not include sociological and cultural considerations. At the time this study commenced,
evident in the literature was the absence of community participation in the application of telehealth technologies nationally and internationally (Field, 1996).

"Technology gives us tools; we must decide how to use them. Technology itself does not develop socially responsible citizens of a democracy, people and society do” (Citizens Panel on Telecommunications and the Future of Democracy, 2004).

MODELS OF HEALTH SERVICE DELIVERY

There is a tendency for established telehealth (and telemedicine) applications nationally and globally to follow a medical model of health care based on the management of illness rather than the maintenance of health (Nijkamp & Wempe, 2004; Klecun-Dabrowska, 2002; Gott, 1994). This model fails to recognise the ways in which disease and health care are intimately linked to the social organisation of the population in which they occur. Also, the model equates health and illness with medicine or medical care, assuming that this alone is responsible for improvements in health (Illich, 2003, originally published in 1974). Another model of health, which is employed in western society, is the rehabilitative or behavioural model. Both the medical and rehabilitation models have the problem of individualising health problems, that is, focusing on the person alone, thereby creating a ‘blame the victim’ approach. By centring on ‘specific problem resolutions’ or the ‘fixing of parts’, these models have been disempowering for both the client and the professional.

Poverty, social exclusion, poor housing, and poor health systems contribute to the health status of individuals and communities (World Health Organization, 2006). Therefore, health and illness are not to be viewed as solely biological or physiological in nature (Germov, 2005). For health care to be successful in promoting health and preventing illness, health services must reflect the multifactorial nature of health and illness and each of these factors must be addressed.

According to Germov (2005) and Townsend and Davidson (1982), social customs and beliefs have persistently shown a correlation with experience of health or disease. This has meant that researchers since the 19th century have gone outside
the biological process to look at ways in which social factors influence health and illness. This forces a reconsideration of the role of Western medicine and risk factor identification in relation to disease reduction, and places a greater emphasis on wider social changes as producing improvements in health. It necessitates recognition of a number of factors as having some causal relationship with the experience of illness. These include lifestyles that give rise to vulnerability, stress arising from disturbed social relationships and consequent physiological disorders, social support structures as protection against illness, inequitable wealth distribution affecting morbidity, areas of residence influencing death rates, and unemployment (Wilkinson & Marmot, 2003).

One model of health, which has attempted to address these health affecting factors, is the social model of health. This model acknowledges the relationship between society, the individual and health. This social perspective on health embodies social meanings and values that direct attention to health care that is not ‘provided or delivered’ but practised. Furthermore, health is not considered a result of some random biological occurrence, nor is it manifested uniformly in all individuals. In the social model of health illness is not a constant; it affects individuals in different settings in different ways.

For example, it is reported by Marmot (2001, p.134) that there are substantial geographic variations in health within rich countries. While he reports that the low life expectancy of people who live in poor countries may be the result of starvation, infected water, and poor sanitation, the low life expectancy of people who live in poor areas within rich countries is not. A 2001 study by Diez Roux et al studied the relation between characteristics of neighbourhoods and the incidence of coronary heart disease over nine years, in four sites in the United States, and found that individuals living in socioeconomically disadvantaged communities were more likely to experience higher levels of coronary events. It was also found that individual characteristics such as income, education, and occupation were related to the higher incidence of coronary event (Diez Roux et al, 2001). The World Health Organization’s Commission on the Social Determinants of Health also report that a low socioeconomic environment is more likely to include being involved in unsafe work, living in polluted and overcrowded neighbourhoods, and lacking access to health systems (World Health Organization, 2006). Residents are also more likely to experience less social support and greater isolation; to be less active in community
groups; and importantly, less concerned with improving their living, working, economic, and political environment (Wilkinson & Marmot, 2003).

The lower socioeconomic indicators of individual people and of the communities are a measure of the relative powerlessness experienced by people. Social inequities and injustices based on class, gender, race, politics, ethnicity and economics contribute to poverty and powerlessness, thereby leading to decreased access to health care. As power is a relational concept rather than an absolute one, and is inextricably linked to knowledge, a health system based on the social model of health would respond to these challenges by incorporating effective action on the social determinants of health (Commission on the Social Determinants of Health, 2006).

In the medical model decision making is predominantly controlled by health professionals and associated groups, perpetuating the dominance of one group over another. Conversely, the social model of health reflects a more democratic view where community members are involved in all levels of decision making. This more political model addresses issues of access and equity, and emphasises community action and the importance of policy and legislation.

Against this background the World Health Organisation (WHO) provided a clear framework for a re-orientation of a national health system. The 1977 Declaration of Alma Ata, the foundation for the Health for All Strategy (WHO 1978), was based on a primary health care approach. This strategy was adopted by many developing countries (Rohde, Chatterjee and Morley, 1993) but less readily by countries in the western world, although Health for All did provide the impetus for the framing of goals and targets in Europe (WHO, 1985). The Ottawa Charter for Health Promotion (WHO, 1986) places healing and health within the context of interrelated and interdependent states of well-being and community life, and advocates social and political action for health. In 2005 the World Health Organisation has emphasised the social determinants of health by establishing its Commission on Social Determinants of Health. This paradigm shift recognises that health is affected primarily by community participation in policy decisions in traditionally non-health areas. As Dr. Lee Jong-wook, Director-General, World Health Organization stated in The Lancet in 2005:
“Interventions aimed at reducing disease and saving lives succeed only when they take the social determinants of health adequately into account” (World Health Organization, 2006).

Given the strong emphasis on community consultation and participation in the social model of health and in the operationalisation of this model by the World Health Organisation, it is a concern that telehealth applications are being applied with minimal community involvement, and that there is a tendency to not consider implications of the applications for communities. In order to be viable and sustainable, a telehealth model requires the development of a framework for the implementation and use of health related technologies within a social model of health; and the development of an evaluation model to determine the benefits of telehealth. To date no studies have been identified which examine the relationship between the social impact of telehealth technologies, the potential for a social model of telehealth, and how communities participate in health technology projects.

COMMUNITY PARTICIPATION

Community participation in health planning and policy decision-making has been prevalent for three decades, and is linked to primary health care and health promotion (Maloff et al, 2000; Gilbert, Rodwin & Yeung, 1987; Rifkin, 1978). Its history has been linked to social trends in Canada, England and Australia where new social movements challenged traditional authority, questioned the effectiveness of the medical model of health care, and supported the inclusion of disadvantaged groups in the public processes (Taylor, 2002; Labonte, 1994). At the time, the 1970s, inclusion in decision making was limited to personal health choices only made by individual community members (Boyce, 2002). In the next decade there was a shift in emphasis to one which acknowledged the structural effects of participation in health. Major World Health Organization (WHO) reports, such as the Alma Ata Declaration (WHO, 1978), the Ottawa Charter for Health Promotion (WHO, 1986) and the Jakarta Declaration (WHO, 1997) emphasised the importance of community participation and multi-sectoral working as key principles for successful health projects. In 1988 Canadian government policy (Epp, 1988) shifted emphasis to structural factors related to social, cultural, economic and regulatory conditions which affect health. Since that time, community participation has become
an established strategy in planning and decision making within the health field (Maloff et al, 2000).

In a review of research studies both for and against participation in medical care, Guadagnoli and Ward (1998) found that the benefits of participation had not been clearly demonstrated. They concluded that patient participation in decision making was "justified on humane grounds alone" (Guadagnoli & Ward, 1998, p.329), and suggested that participation should be defined within a level, rather than whether it should or should not be used. They suggested that levels could range from actively engaging in the decision making process, to making the ultimate decision.

The Community Participation Range

Participation ranges from the provision of information to involvement through consultation, collaboration, decision-making and implementation (Citizens and Civics Unit, 2002; Vergez, 2002). Gramberger (2001) define this range as a public participation spectrum. The International Association of Public Participation. (2004) and the West Australian Department of the Premier and Cabinet’s Citizens and Civics Unit (2002) append this to include empowerment, extending the spectrum to one that describes an increasing level of public authority.

Four main levels of participation have been identified in the literature. These are information transfer, consultation, active participation and empowerment. The amount and quality of participation varies throughout the life cycle of a project, and is represented in Figure 2.1.

Figure 2.1: Participation continuum.

Source: Haviland, 2004; (Adapted from Rietbergen-McCracken & Narayan, 1998)
Sharing of information in the participation continuum refers only to the shift in information from government to community members. This transfer is only one way and does not enable dialogue between individuals, community groups and government. Information transfer alone does not guarantee change (Rifkin & Pridmore, 2001). In contrast, consultation is a two way exchange of information between government and community members. Consultation should be viewed as extending throughout a project cycle rather than as a one-off exercise.

The next level on the participation continuum is collaboration. Collaborative practices bring individuals, communities, government departments and organisations together in an atmosphere of support to solve existing and emerging problems that could not (and should not) be solved by one group alone. This level of shared involvement and collaboration has been reported by the West Australian government’s Citizens and Civics Unit (2003); as increasing the likelihood of achieving project goals and outcomes.

The final level on the participation continuum is empowerment. Literature supports the necessity for empowerment of health consumers in clinical decision making and emphasises that for true active community participation, empowerment must be attained (Brown, McWilliam & Ward-Griffin, 2006; Labonte & Laverack, 2001).

In an explanation of the measurement of effectiveness in community based health promotion, Baum (2000) reported that increasing levels of participation will reduce social exclusion and are likely to improve the overall quality of community life. “Consultation is an ideal tool to empower individual citizens and communities” (Citizens and Civics Unit, 2002, p.3), that is, to take control of their lives and reorient power relationships with the “professional” decision-makers. A culture of consultation within organisations is needed to develop successful public participation strategies through the participation continuum.

Community Participation And Patient Care

The terms community, participation, empowerment, inclusiveness and engagement have moved to the centre of the political agenda in many parts of the
world (Taylor, 2002). In particular, participation and engagement are being used interchangeably in many discussions surrounding patient care (Anderson et al, 2006) and for decision making in health planning (Frankish, Kwan, Ratner, Wharf Higgins & Larsen, 2002). Recent government documents in Western Australia have promoted the importance of involving the community in the planning, and particularly in planning of health care (Citizens and Civics Unit, 2003).

Literature strongly supports the necessity for empowerment of health consumers in clinical decision making via direct consultation, provision of accurate information, and skills development (Brown, McWilliam & Ward-Griffin, 2006; Labonte & Laverack, 2001). McWilliam et al (2003), analysed research studies to determine challenges in building partnerships, and found that strategies designed to increase health consumer and provider participation have the potential to increase personal control over consumers’ lives and increase the relevance and effectiveness of health efforts.

For over a decade the Australian Government has supported the necessity to provide more appropriate care to individuals and communities through the establishment of a framework that allows people to have a say in health care decisions (National Resource Centre for Consumer Participation in Health, 2004; Australia Commonwealth Department of Health and Ageing, 2000b; 1993). However, the rise of professionalism has allowed the development of the widespread belief among professionals that community knowledge is not great, as was found by Thomas, Pellegrini, Bishop, & Drew, in a 1999 case study of one rural West Australian town. Freire (1984) asserted that all people have knowledge and bring it to any discussion or event.

Community Participation As Government Policy

While the principle of participation is well established, the deliberate promotion of community participation as a key element of policy by government departments is a relatively recent development (Strobl & Bruce, 2000). Maloff et al (2000), in a survey of participation activities by Canadian health authorities, identified an increasing awareness among health policy makers to involve
communities in decision making and the issues that affect their health and well being.

There is a substantial body of literature that describes impact of participation in health policy formulation and implementation, including government initiatives (Kurland & Zeder, 2001; Roussos & Fawcett, 2000; Paul-Shaheen, 1990; Holman & Dutton, 1978). The literature also supports the consideration of community participation in planning as integral to the preparation of community-oriented plans, programs and projects (Dowling, 2004; Anderson, 2002). Rose, Gomez & Valencia-Garcia (2003) in a study of community planning groups for HIV prevention in the United States, used a survey, semi-structured interviews with key informants and archival document review, and found that community participation in government initiatives were a constructive approach to policy development and systems change.

Parry and Wright (2003) in an analysis of health impact assessments for the World Health Organizaton, reported that community involvement in policy making may have a positive impact on the success of project development and implementation, and may also directly affect individuals by changing attitudes and actions towards the causes of ill-health, promoting a sense of responsibility and increasing personal confidence and self-esteem. It was also reported that involvement in the policy process may decrease alienation among socially excluded groups and reorient power relationships with the "professional" decision-makers, highlighting the need for an understanding of the pattern of participation is important to inform social and health policy making.

This increased emphasis on community participation in decision making is accounted for in part by increased evidence concerning the dominant role of determinants outside of the influence of the health sector on the health status of individuals and communities. Participation is significantly influenced by individual contextual factors such as socio-economic status, health and other demographic characteristics (Baum, 2000); the relationship and interaction of social, political, cultural, economic, physical, environmental and functional characteristics populations (Ismael, 2002; Maloff et al, 2000); and organisational factors such as policies and politics. In addition, the decentralisation of health decisions has encouraged greater use of participation at the local level.

To become meaningful health and social policy, decisions need to be made which meet the requirements of individuals, communities and institutions. In a 2001
comparative analysis of four case studies of public participation in Canada, Abelson explored the role that contextual influences have on local health-care decision making, and categorised these into three areas: first, the social or structural influences where communities engage in different types of participation associated with different population structures and social contexts; second, the role government and institutions play in enabling the participation process; and third, the politicalisation of participation around contentious issues.

**Social context:**

Public participation is a very complex and sophisticated social and political phenomenon (Contandriopoulos, 2004) which has been undergoing particularly rapid and dramatic changes in recent decades (Pelletier, McCullum, Kraak & Asher, 2003). The complexity of participation is reflected in the social, political, structural, cultural, economic, physical, and functional influences (Germov, 2005; Maloff et al, 2000) which are characterised by education, income, geography, population size, religion, culture and the distance between communities (Abelson, 2001). These different structures and social contexts influence the style in which community members engage in the participation process, and the importance they place on their own values in shaping participation. The contexts also influence whether policies are adapted to local conditions, and less significantly the dimension of trust and reciprocity (Putnam, 2001).

Another key element of this social context is the nature and distribution of power and beliefs at the societal level. Morone & Kilbreth (2003) investigated the literature surrounding citizen participation and suggest that community participation (or power to the people) in health policy is a lost ideal. However, Contandriopoulos (2004), in a comparative analysis of three qualitative case studies, believes that social and institutional change can be attained and that the literature on participation should provide more constructive outcomes and characterise more productive participation policies to guide this change.

A challenge to effective community participation is to ensure interventions, programs, policies and other actions take place within a social context (Pelletier et al, 2003). However, there is little evidence that the technological expansion taking place within the health sector reflects this social consideration. Other sectors such as education and justice often deal with similar problems. A social response would be
to enable the three sectors to overlap, and tackle the same social problems, reflecting a more public health approach which enables local action (Morone & Kilbreth, 2003).

Community participation is influenced by institutional, political and social contexts and the health system must be adaptable and willing to consider these characteristics in terms of issues of power and control.

**Institutional context:**

Much of the health policy literature agrees that community participation is an important component of health sector reform (Frankish et al, 2002). Also acknowledged is the importance of the private-government-public partnership as a mechanism for improving community health (Shortell, Zukoski, Alexander & Bazzoli, 2002). Government involvement can be at a local, state or national level, and it involves community members interacting with government at an individual level or as part of an organised group in areas ranging from policy making to utilising public services.

Governments interact with community members in different ways. Firstly, governments can solely disseminate information to community members, thereby establishing a one way relationship. Secondly, consultation between government and community member can be created through a two way relationship where information is provided and feedback received. Thirdly, active participation takes place when a partnership is created between government and community members. By basing the interaction on the principle of partnership, opportunities arise for greater openness and transparency in decision making and subsequently successful and acceptable policies (Gramberger, 2001).

Strong government-community relationships encourage more active community membership in society, leading to a stronger democracy. Thomas et al (1999) contend that there is now considerable degeneration of trust between public officials and the communities they serve. By strengthening government-community relations, a greater trust in government is established which enhances the legitimacy of government (Gramberger, 2001). A major challenge is to create the needed interdependence among separate organisations, individuals and communities to facilitate concerted action to improve health.
In seeking to strengthen relationships with community members, governments are responding to a changing context for policy making. This includes the increasingly interconnected society through information and communication technologies, and the subsequent challenge to respond across multiple levels of government (Gramberger, 2001). By reacting to these pressures, governments respond to calls for greater transparency and accountability, meet community expectations that their views be considered, and increase public support. Strengthening the relationship provides a better basis for public policy, ensuring more effective implementation of those policies. While effective policies draw on the resources of all available expertise and knowledge in the most cost efficient manner, it is important that:

“Authentic community consultation which demonstrates procedural justice and allows communities not only to hear the issues and constraints for policy makers but also to know that their constraints are considered will be essential to redressing the decline of deference and to effective policy implementation” (Thomas, 1999, p.10).

However, these views are idealistic and this rarely occurs in government practice.

A strategy is to shift from a traditional representative democracy to one where community members are involved in decision making; that is, to a participatory culture. Rose et al (2003), for example, researched community participation in government initiatives, where the establishment of Community Planning Groups for HIV prevention were a requirement of funding conditions. The funding requirement was based on the need to develop and implement a collaborative planning process to ensure successful implementation.

Shortell et al (2002) used case study analysis and a survey in the United States to evaluate partnerships for health improvements and found that the major challenge in strengthening government-community relations is to be able to develop a vision that can be shared by all involved, and to achieve sufficient overlap between each member’s organisational strategies and the strategy of the group at large. For this to take place a number of factors are needed. These are: a focus on improving community health, a balance of perceived benefits and costs of all participating organisations, an explicit vision of what is to be accomplished, and a management model that acknowledges the complexity of inter-organisational alliances, and which
aims to achieve community wide benefits rather than benefits for individual organisations.

**Political context:**

Abelson (2001) found that participation is politicised around contentious issues, for example, that the dominant health care providers can influence a decision making process. Therefore, if communities are to have an equitable role in identifying and addressing their priority problems and concerns, “what types of participation and decision-making processes might be most useful and how might they be evaluated in terms of stimulating action, promoting democratic decision making and having greater sustainability?” (Pelletier, Kraak, McCullum & Uusitalo, 2000, p.92)

Community or public participation is one route toward democracy (Contandriopoulos, 2004). Thomas et al (1999), in a rural West Australian study, found that with increased community participation comes better social justice, and that “communities will accept adverse decisions if they see that the decision making process has been fair and open” (p.3), and want outcomes that are fair.

**Benefits of Community Participation**

The major benefits of using a community participation method are the incorporation of local knowledge in planning, generation of greater support for and sustainability of local actions, and being consistent with democratic values (Pelletier et al, 2003; Sclove, Scammell & Holland, 1998). In 1993, the Australian Commonwealth Department of Health and Ageing National Health Strategy argued that by:

“setting up a framework that lets people have a say in health care decisions, the health system will provide more appropriate care to people, and to communities, particularly for people who are disadvantaged by current arrangements. This can assist in improving the health of all Australians” (p.6).

This continues to be the case today, with the Australian Commonwealth Department of Health and Ageing (2000b) document reporting that by improving participation and strengthening accountability mechanisms improvements in the health care system’s performance could be achieved. This could also be achieved
through a move away from central government structures towards a regional or area population focus, described as a more democratic approach.

Caddy and Vergez in a 2001 OECD report, the WA Department of the Premier and Cabinet (Citizens and Civics Unit, 2002) and the Commonweath Government (National Health Strategy, 1993) note that greater participation by the community can raise the quality of policies, raise the chances for successful implementation, reinforce the legitimacy of the decision-making process and its final results, increase the chance of voluntary compliance, and increase the scope for partnership with community members.

Stobl and Bruce (2000) assessed how adequately the consultation process contributed to broad-based participation in development of health plans, and recommended wider and more effective participation that had clear aims about the level and purpose of participation, adequate resources, time and facilitation, and good two-way communication. Abelson (2001) also acknowledges that choosing an appropriate combination of community, government, experts and stakeholders can be complicated, the task of “determining how and what public views will be obtained and incorporated in the decision making process even more challenging” (p. 779).

Research in the area of health technologies is predominantly based on a list of pre-determined programs or services, and does not include analysis of the benefits of community participation in planning. This is evident in May and Ellis’ 2001 ethnographic study that investigated the politics of protocol development for a clinical telemedicine application. The study found that while clinicians, managers, funding bodies, technical and external experts were all participants in the study, there was a distinct lack of interest in the telemedicine application by the clinicians, reflected in the statement that “the workstation in the specialist unit had had a game installed on it and was no longer configured properly” (p.996). Failure of the telemedicine implementation was given as the power struggle between medical practitioners and other study participants.

Many other studies have been unsuccessful by assuming if the technology is available, then users will come. Cases from telepsychiatry in Western Australia (Health Department of Western Australia, 1999a) and the United Kingdom (UK) (May, Gask, Atkinson, Ellis, Mair & Esmail, 2001) have shown that expectations of use in this area were not reached. In the UK study it was found that the technology was incompatible with the set of practices constituting the consultations, that is, the
‘closeness’ required for a psychiatric consultation, and in both studies difficulty with using the technology mitigated against use.

**Is Community Participation An Outcome Or A Process?**

A clear delineation of views appears in the literature as to whether participation is an outcome or a process, or can be both. The two perspectives are concerned with either achieving the correct result (outcome), or with reaching agreement about enacting the correct practice (process). Outcome participation has been described as substantive consensus (Citizens and Civics Unit, 2002) and instrumental participation (Legge, 1990). Participation which focuses on the process of consultation has been defined as procedural consensus (Citizens and Civics Unit, 2002) and structural participation (Baum, 2000; Legge, 1990). Freire (1984) is unequivocal in stating that participation is a process and should not be viewed as a product.

The majority of studies in the health literature view the process types of participation from the perspective of the organisation, which is concerned with increasing community participation (Baum et al, 2000). A number of authors have commented that an organisational perspective on participation tends to be seen as either a means to achieving an end or goal, or as a valuable health development activity in and of itself (Baum, 1998; Legge, 1990; Oakley, 1989).

Bergstrom et al (1996) describe it as critical to move to an outcomes focus rather than on one which focuses on the activities of participation, where participation is abandoned once the task has been completed. However Baum (1998) argues that this view is one controlled by the organisation and tends to be driven by outsiders to the community, rarely resulting in any shift of decision making power or resources from the outside implementers to local community members and their representative agencies. There is less concern with act of participation and more with the results of participation.

Baum et al (2000) characterise participation as far more developmental in its aim, in that it is not limited to the life of a particular project but seen as a permanent and intrinsic feature of an organisation or community. The critical elements in the process are to increase the awareness of the people and develop organisational
capacities. Engaged, ongoing participation produces trust and networks, and greater control by the community. Baum (1998) notes that structural participation will be evident where participation is integral and forms the basis for all activity. This is evident when local community members play an active and direct part in the initiative and have the power to determine the direction and actions taken.

**Critical Issues In Community Participation**

Frankish et al (2002) recognised that meaningful community participation needs consistent opinions on the role and responsibility of health institutions and authorities, on the appropriate composition of authorities, and on the skills and attributes of authority members. Sclove (2004) writes that future efforts to promote community actions that are more responsive to more broadly shared values should focus on coordinating the "upstream" decision-making processes at state, federal and international levels, in addition to those taking place at the community level.

The critical issues that impact on participation relate to the power of the external funding source, the imposition of funding agency guidelines on the communities, the amount of guidance by experts, and the data collection methods (Naylor et al, 2002). Other issues in evaluation of participation were identified as differentiating stakeholder participation, variations in the meaning of community, the complexity of evaluating a multi-level project and the evolution of participation over a many years. Strobl and Bruce (2000), in a study of an English 'City Health Plan', using semi-structured interviews with key informants and meeting facilitators and questionnaires to attendees of consultation meetings, found that clear aims about the level of participation sought, adequate resources, time and facilitation, and good two-way communication could be expected to provide for wider and more effective participation.

Effective community participation requires four essential conditions be met. These are; access to objective, reliable and relevant information, clear goals, sufficient time, resources and flexibility, and commitment from government of the autonomous capacity of people, to accept a higher degree of responsibility

“There is now wide acceptance of the proposition that a participatory approach to needs assessment and programme planning produces
information of real value, much of which could not be readily obtained by other means” (Rifkin & Pridmore, 2001, p.ix).

This literature review has found a number of issues critical to the achieving empowering community participation and subsequent successful implementation of projects. These are: communication; the incompatibility between community members and institutions; community-based approaches; power, representation and control; managing conflict in partnerships; evaluation of community participation; and research in community participation.

**Communication and the incompatibility between community members and institutions**

Unsuccessful community participation relates to the issues of poor communication, and the incompatibility between community and organisational agendas. For communication to flow effectively the formal, local and tacit knowledge context of community members and professionals must be understood (Thomas et al, 1999). For example, Rose et al (2003) found that there needs to be enhanced communication with government and other leaders so they are aware of system and policy changes resulting from the planning process.

Pelletier et al, in a 2003 study on nutrition policy, found a major difference between the resulting community action plans and the institutional agendas at local, state and federal levels. This incompatibility between bureaucratic and community agendas resulted in unsuccessful implementation of the studied nutrition project. Frankish et al (2002) consider these differing opinions on the need for community participation as a threat to meaningful community participation.

**Power, Representation And Control**

The critical issue of power, representation and control is evident in numerous social science research articles (For example: Contandriopoulos, 2004; Kapiriri, 2003; Morone & Kilbreth, 2003; Parker et al, 2003; Pelletier et al, 2003; Rose et al, 2003). The sub-themes addressed in this body of work include the top-down approach, individual versus the community, representation, organisational power, leadership, distribution of power, and the control of resources.
Community participation is intrinsically a matter of power relations (Contandriopoulos, 2004). Generally, participatory programs aim to shift power relations in local health care from medical and institutional control to more marginal groups, providing a voice for social programs and the right for communities to have control over their lives (Morone & Kilbreth, 2003), and a recognition that there is a need for a move away from a top-down approach. However, this has not always been successful for a number of reasons.

The debate surrounding who should represent individuals and communities is not new. Contandriopoulos (2004) clearly believes that “the symbolic construction of representation grants the representative their legitimacy”, and that “people should not be objectified as representatives of all community members” (p.327). Therefore, it is considered that the viewpoint of the representative is legitimate, but only for themselves. For example, procedures to nominate local community representatives are often weak, yet the representatives will often be seen to provide legitimacy to a case. As Contandriopoulos (2004) aptly states: “participation produc(es) precarious neutrality” (p.329). Parry and Wright (2003) also found that the legitimacy of those who chose to participate with regard to representing the views of the wider community is unclear. They considered that communities were not a homogenous body, but are fraught with divisions, tensions and conflicts, and certain vulnerable groups may be unwilling or even unable to participate.

Other issues critical to the power and control debate is that participation is often mediated through institutions and institutional arrangements (Contandriopoulos, 2004). Naylor et al (2002), in the evaluation of a participatory research process used in a Canadian community heart health project, used focus group interviews and literature analysis, from which a pre-determined rating scale was developed, to then undertake group interviews on project participation. They found that the institutions and organisations’ external funding sources were dominant, funding agency guidelines were imposed on the communities, and there was limited guidance by experts.

Rose et al (2003) conducted a study on the influence of community planning groups in HIV prevention policy, and found that local leadership was an important facilitator of policy making in community participation. However, Kapiriri et al, in a 2003 study, found that decision-making, monitoring, implementation and evaluation, are still dominated by the locally elected leaders due to reported economic, social
and cultural barriers that hinder the participation of the rest of the community. Contandriopoulos (2004) suggests that there is no one locus of leadership. Kapiriri et al (2003) concluded that effort must ensure local representatives and leaders must consult with people they are representing, and monitor who is participating.

Control over resources and their allocation was also found to be an issue that impacts on community participation. Rose et al (2003) found that members of the community planning groups believed they should have resource allocation authority, where the government retained it. A threat to meaningful community participation is also the difficulty in ensuring accountability of health authorities (Frankish et al, 2002). There should be recognition by authorities that community members influence the design and choice of health services (Boyce, 2002).

**Power And Disadvantaged Groups**

Internationally, efforts are being made to understand the implications of community or public participation to improve outcomes for marginalised or disadvantaged peoples (Robinson, 2005; Contandriopoulos, 2004). Participation of disadvantaged community members is fundamentally different from that of privileged community members with more resources. Financial and social support mechanisms are necessary adjuncts to community participation for disadvantaged persons. However, these supports are rarely achieved (Boyce, 2002) as community participation is mostly bureaucratically initiated. There is a need for more responsive decision making processes that represent the community which they purport to represent, and which incorporates local knowledge in planning, generates greater support for and sustains local actions while being consistent with democratic values.

A major theme that emerged from Baum et al (2000) was the relative lack of involvement of people with low income and low educational levels in social and civic activities. This lack of participation seems to be a further expression of a range of disadvantage that combines to exclude people from being active participators in their societies. These data indicate that participation is socially patterned and that there are groups within the community for whom social exclusion is likely to be more prevalent. Gender and age were also found to exert a significant influence on patterns and types of participation. The relatively low levels of participation reported in Baum et al (2000) suggest that health systems will have to devise means of
supporting people and increasing the opportunities for them to participate. This is especially the case for those with low educational levels and low incomes, who need assistance in acquiring the skills, confidence and motivation to participate in community activity.

The literature on community participation has generally favoured a redistribution of power to less powerful groups in society. Contandriopoulos’ (2004), comparative analysis of Canadian case studies on public participation in health care, noted the division to differentiate the community, the administrator or expert, and the elected as being too simplistic, and found that social and political relations:

“do not rest upon objective bases, but rather upon a perpetual symbolic struggle between agents to influence each other’s perceptions of their respective positions and …… their perceptions of the reality as a whole” (p329).

The participation of disadvantaged community members is fundamentally different from that of privileged community members with more resources. Financial and social support mechanisms are necessary adjuncts to community participation by disadvantaged persons. However, Farrant (1991) and Boyce (2002) found that this is rarely achieved. A cited example involved participation on community health committees. It was found that participation on committees was limited due to a lack of honoraria for aboriginal community members, in contrast to the situation for professional members of other sectoral committees.

Boyce (2002) and Labonte (1995) agree, and consider that the emergence of a population health perspective in Canada indicates that determinants of health for at-risk sub-populations will receive more attention than community processes that affect health. A population health approach does not intrinsically expect community participation, except through a pluralistic interest group strategy that can set priorities. The ability of disadvantaged groups to participate meaningfully in such a strategy is limited. Campbell and McLean (2002) defined two English communities geographically, selected key contacts within the communities, and used purposive convenience sampling to interview community members in the local community groups. The study found that a policy emphasising increased participation for socially excluded or marginalised groups in local community networks is limited unless specific measures to address obstacles of disadvantage are offered. While a
variety of methods were used by Campbell & MacLean (2002), three issues were found that impact negatively on the validity of results. First, in many research papers, key informants were used to facilitate the research process, with no further input from general community members, thereby affecting the representativeness of participants. Second, steering groups were given decision making power on research processes. Lastly, the method of choosing key informants was not addressed.


The Meaning Of ‘Community’ In Community Participation

A community-based participatory approach recognises the value of involving intended beneficiaries such as local community members and organisational staff (Parker et al, 2003). However the term community is not clear, and there is a disjunction between the assumptions of the self-evidence of the meaning of community in major international declarations and strategies which promote community participation, and the observation that meanings of ‘community’ vary within government, community groups and between individuals (Campbell & MacLean, 2002; MacQueen et al, 2001; Baum, 2000; Jewkes & Murcott, 1998). Islam, Merclo, Kawachi, Lindstrom and Gerdtham (2006) contend that the “more narrowly we define community and social networks, the more we destroy the trust between people” (p.53), again reinforcing the importance of the individual and community to guide our definitions.

A move away from a definition of ‘community’ as a setting or target in which to place a public health program and toward a definition that recognises community members as a diverse set of partners with different but essential sets of skills and resources to contribute to practice. This contrasts with public or population health research and practice methods that emphasise the individual as the unit of practice and analysis (Boyce, 2002, p.53).

Partnerships

Active participation is about partnerships between government and community (Caddy & Vergez, 2001) from planning through to final evaluation.
Partnerships are essential for successful planning with communities (Rifkin & Pridmore, 2001). In an evaluation of twenty-five community partnerships in the United States, using interviews and data analysis, Shortell et al (2002) describe six characteristics faced by community groups which impact on successful partnership and which should be given attention. These are: managing partnership size and diversity, developing multiple approaches to leadership, maintaining focus, managing conflict, recognising life cycles, and redeploying or patching resources. Parker et al, (2003) found that departmental level strategies that enable staff to enhance the capacity of community members to serve in partnership endeavours are essential for successful project implementation. Shortell et al (2002) suggest the need for a well-articulated shared vision and the governance and management capabilities of the partnership itself.

**Evaluation Of Community Participation**

A review of evaluations of community participation in recent literature revealed predominantly negative or mixed results, and a number of critical issues. Kapiriri et al, in a 2003 study, used five points of participation to find that the majority of participation is at health benefits and programme activity levels. The issues described by Naylor et al (2002) included variations in the meaning of community and participation among participants, the complexity of evaluating the extent of participation in a multi-level project, and the levels of differentiating participation in program activities from research activities, and evolution of participation over a 5 year time span. Other evaluation issues included the difficulty in measuring results of work and decisions of health authorities (Frankish et al, 2002), weak interventions, and an insufficient period of time to observe an impact (Shortell et al, 2002).

Strategies to improve the results of evaluation were reported by Eyre and Gould in a 2003 study that used semi-structured interviews with key members of local community groups, chosen using purposive sampling techniques for their involvement in the local area, and a pentagram model to rank interviews based on pre-determined rating scale that evaluates participation based on needs assessment, leadership, organisation, resource mobilisation and management. Kapiriri et al (2003) evaluated community participation using five levels of participation of: health benefits, programme activities, implementation, monitoring and evaluation.
What has not been clear in the literature is the need for the evaluation of community participation to be through the whole continuum, as presented in Figure 2.1; that is, not just the individual stages, but evaluation from information transfer, consultation, active participation, through to empowerment. The West Australian Citizens and Civics Unit (2002; 2003) suggest the use of their public participation spectrum to compare levels of participation, as well as the need to evaluate participation as both a process and an outcome.

Evident in the literature is the absence of analysis of the continuum of community participation from a community based perspective in the application of telehealth technologies nationally and internationally, with most research being focussed on the delivery of single clinical applications. However, Contandriopoulos (2004) maintains that there should be no such thing as an analysis of formal participation devices, suggesting that policy making should instead be concerned with an analysis of institutional arrangements.

PAR And Community Participation

As has been shown, research strategies which emphasize community participation are increasingly used in health research, and have commonly been undertaken using both quantitative and qualitative methods. A methodological approach which aims toward a more collaborative research process, and reflects the values of community participation, is Participatory Action Research (PAR). The main features of PAR include; collaboration, mutual education, and acting on results developed from research questions that are relevant to the community. It is also based on mutually respectful partnerships between researchers and communities (MaCaulay, et al, 1999).

PAR is a methodological approach to research that differs fundamentally from mainstream research because it is connected with community groups that carry out the research, know the research results and use them in practical efforts to achieve constructive social change, so it is generally used to good effect (Selove et al; 1998; Cornwall & Jewkes, 1995). “The key difference between participation and conventional methodologies lies in the location of power in the research process” (Cornwall & Jewkes, 1995, p.1667).
Examples of PAR in the community participation literature reveal attempts to negotiate a balance between developing valid generalisable knowledge and benefiting the community that is involved in the research. However, in general, strong partnerships are not in evidence. Marshall & Taylor (2005) in a study of ways to facilitate the use of information and communication technology (ICT) for community development through collaborative partnerships between universities, governments and communities in North America, used a case study approach, espoused the use of PAR, and discussed the importance of engaging and empowering communities. However, communities were not involved in the development of research design, implementation, analysis, or the dissemination of results.

A number of research papers were found that reflected PAR and community partnerships. Pelletier et al (2003) used a participatory action research method, to partner research staff with agencies in local communities in the design, implementation and evaluation of community planning and priority setting to test alternative models for community decision making related to food and nutrition. Ismael (2002) used a participatory action research approach to focus on modelling health through participation; and Lindsay et al (1999) studied nursing partnerships and community development. MaCaulay et al (1999) acknowledged the problem that researchers “may inadvertently collaborate with a minority section of the population that does not present the collective interests of the entire community” (p.777).

Despite the rapidly expanding literature on community participation in the last five years, there remain many questions about implementation and measures of success. One of these questions concerns the range and types of participation that exist within specific populations. While the rhetoric and practice of participation have become fully integrated into mainstream health and development discourses, Morgan (2001) concludes that “ideological and political disagreements continue to divide pragmatists, who favour utilitarian models of participation, from activists who prefer empowerment models” (page). Contandriopoulos (2004) cautions, however, that “local participation in health care offers no panacea to any problem” (p.321).
SUMMARY

Based on the literature, it is understood that community participation is a process through which communities provide input into programs and projects, resulting in community members acquiring skills, knowledge and experience, and decision making power that impacts on health care and policy making. Community participation reflects the broader environmental, cultural, political, economic and social changes taking place around the world.

While the principle of participation is firmly encouraged by government departments and despite a growing literature on community participation, there remain many questions about implementation and measures of success, including questions relating to control over the process of participation and the outcomes, and questions concerning the range and types of participation that exist within specific populations.

The application of technologies in any sector requires a devolution of power from bureaucracy to stakeholders and community members during planning, decision-making, monitoring, implementation and evaluation; and the needs of stakeholders and community members take precedence over the existence of a technology.

A study such as the current one will help fill a gap in our knowledge by addressing how communities and individuals can fully participate in technologically based health planning.
CHAPTER THREE

METHODOLOGICAL APPROACH

INTRODUCTION

The following chapter describes the methodological approach used in the study to analyse the influences on community participation. This is approached from three perspectives; government planning for telehealth and telecommunications services in rural and remote areas Western Australia; community expectations, needs and interests involving telehealth; and the evaluation of the planning process and outcomes for the delivery of telehealth services by the state government. The study was conducted within the naturalistic, interpretive paradigm, guided by Donabedian’s (1980) conceptual framework of structure-process-outcome as a strategy for evaluating health care. The method was bounded within a case study using participatory action research, which allowed data to be collected and analysed throughout the process of planning and implementing the telehealth project to inform subsequent stages of the study.

RESEARCH PARADIGM

This study is grounded in an interpretive paradigm of qualitative research, which seeks to understand the experiences and perspectives of different types of people in the particular context studied (Lincoln & Guba, 1985). It focuses on people’s everyday experience and their own ways of interpreting events in their lives, so that their own knowledge assists in working towards solutions to the problems they face (Stringer, 1999). The process of interpretation identifies different definitions of a situation, the assumptions held, and appropriate points of intervention. The outcome of this process is a clarification of meaning for a participant’s own situation, enabling joint understanding by all participants (Denzin, 1989).
Interpretive research can contribute to the development of programs and services by identifying different definitions of a problem or service being evaluated. This type of research is also useful in revealing assumptions held by various participants, and identifying strategic points of intervention. The data can also be used to suggest alternative moral points of view, and offering understandings of experiences of individual participants (Denzin, 1989).

Denzin (1989, p.10) emphasises that the problem with many human services is that policies are based on interpretations and judgements of people responsible for development and delivery based on faulty or incorrect understandings. The goal of participatory action research is to build authentic understandings of the phenomenon under investigation and therefore, to provide effective solutions to problems experienced. It requires researchers to engage in research that provides understandings of the perspectives of all people who are involved. “Ultimately, the purpose of an interpretive process is to reveal the way people describe and interpret their own experiences so that those sets of meanings become the basis for programs, services and policies that affect their lives” (Stringer & Genat, 2004, p.16).

CONCEPTUAL FRAMEWORK

This study was guided by the conceptual framework of Donabedian (1969). The framework consists of a systems based approach of Structure – Process – Outcome for the evaluation of the quality of health care (Donabedian, 1988). It is not a linear framework, but enables investigation of how the structures of a health care organisation affect the internal and external processes of the organisation. Ultimately those processes affect the outcomes of the organisation. Donabedian (1988) states that structural components “have a propensity to influence the process of care” and “changes in the process of care …… will influence the effect of care on health status” (p.84).

In this model, the three sources of information from which inferences about quality can be gathered are the structure, the process and the outcome. According to Donabedian (1992, p.357) the “structure is defined as the physical or organisational properties…the process is what is done…and the outcome is what is accomplished”. When these three kinds of information are causally related they can be used to assess
quality. That is, “structure leads to process and process leads to outcome” (Donabedian, 1992, p.357).

In this interpretive study the structures (in the forms of WADOH management, and telecommunications guidelines) and the process factors (how the structures function in place) were considered in light of their impact on the outcomes as determined by the acceptance of the Telehealth Implementation Plan (as reported in Chapter Four of this dissertation). This framework enables the schematic representation of how the structures of WADOH, other government departments and telecommunications industry affect the internal and external processes of the government, and ultimately how these processes affect the outcomes for rural and remote communities.

RESEARCH STRATEGY: CASE STUDY

The method was bounded within a single case, the WADOH Telehealth Project. In doing so, the study concentrates on trying to understand the complexities of only the Telehealth Project (Stake, 1994, p.237). It undertakes a process of in-depth analysis and interpretation, retrospectively, currently and over time (Bowling, 1997). This allows the study to;

“retain the holistic and meaningful characteristics of real-life events – such as individual life cycles, organisational and managerial processes, and neighbourhood change” (Yin, 2003a, p.3).

Case study, as a comprehensive research strategy (Jones & Lyon, 2004) seeks to “optimize understanding of the (particular) case rather than the generalisation beyond” (Stake, 1994, p.236), while also allowing for the disclosure of multiple dimensions of the one case. For this study, the purpose of the research strategy is to optimise understanding of the complex dynamics of planning for health and telecommunications in rural and remote areas of Australia.

APPROACH: PARTICIPATORY ACTION RESEARCH

Participatory action research derives from the field of education (particularly school room practice) and third world development (Kemmis, 1988; Freire, 1972a;
Freire, 1972b), and it has been used extensively in health studies. Dick (1994) defined action research as a research approach that allows the development of knowledge or understanding as part of practice. It is a collaborative or participatory approach enabling participants to investigate their problems and issues systematically, formulate descriptions of their situations, and devise plans to learn from experience (Streubert & Carpenter, 1995; Stringer, 1996).

The main aim of the participatory action research (PAR) process is to study something explicitly in order to change and improve it (Wadsworth, 1998), where participants are able to develop and extend their own understanding of a situation, and formulate actions that can have immediately applicable results. In conducting PAR there are attributes common to the development of a change process. These characteristics and the theoretical research process of PAR will be reviewed in the following discussion, and then examined in the context of this dissertation.

PAR has three main characteristics – participation, interpretation and action, and involves a cyclical process of problem definition, analysis and resolution.

**Participation:**

A participatory approach requires people to work collaboratively to identify, describe and solve a problem. The researcher’s role is to assist participants to make use of their own understandings and expertise, enabling them to develop workable solutions to their problems, and to formulate actions for which they are willing to take ownership. The position of the researcher in PAR is to assist other participating stakeholders to carry out an investigation, and search for a solution to issues they perceive as significant. The researcher is a facilitator of essentially a self-evaluation process (Guba & Lincoln, 1989).

Wadsworth (1998) proposes four conceptual categories of participants in participatory action research: the researcher; the researched; the researched for (those having the problem); and those who care for those with the problem, who manage fund, treat or prevent the problem. The admission of all relevant participants to the research and evaluation process is an essential component of PAR, and the more distant these four groups are positioned from involvement in the research process, and from each other, the more likely the research is to be problematic. PAR is conducted in marked contrast to studies with a lack of relevant participant involvement, which would be grounded in a positivist epistemology and managerial control in research (Guba & Lincoln, 1989).
**Interpretation:**

As a health professional, the researcher brings to this research a familiarity with clinical issues. As a rural and remote area resident, she also has an in-depth understanding of the issues and influences facing this disadvantaged group. This personal knowledge and insight allows the type of connection Guba and Lincoln (1994) describe as instrumental to the processes of interpreting the results. Close engagement with the data allows an interactive link between the researcher and what was being researched.

**Action:**

The interpretive approach to PAR provides a method for examining the relationship between personal issues and public policy (Denzin, 1989), and stresses the necessity to move rapidly toward new action. This method of working developmentally prioritises issues or actions according to the participants’ perspective, and is based on their perceptions of importance and the possibility of achieving a particular outcome. Successful outcomes or actions are likely to increase levels of commitment by participants, incorporate other stakeholders and gather together increasing levels of support and resources.

**The Research Cycle**

The result of participatory action research is the production of practical solutions to identified problems that can potentially improve a situation or system. The PAR process is a continually recycling set of activities (Kemmis & McTaggart, 1988), where participation, interpretation and action are not conducted as a linear process during one research project, and where each cycle may not always be completed. Instead, there are many cycles of “participatory reflection on action, learning about action and new informed action which is in turn the subject of further reflection” (Wadsworth, 1998, p.5-6). The research cycle enables participants to continue to refocus and reframe activities, that is, research becomes a reflective process.

Stringer (1999) describes it as a cycle of ‘observe’, ‘reflect’, and ‘act’. The first phase of the cycle, ‘observe’, involves the gathering of data, then a stage defining and describing of the situation. The second phase, ‘reflect’, involves exploration and analysis with the development of a hypothesis, then theorising
through interpretations and explanations of what activities have taken place. The third phase is to ‘act’, or plan, implement, report and evaluate. Although these phases are presented sequentially, during the actual study several of the phases may occur concurrently. The use of repeated cycles of the action research method is diagrammatically represented in Figure 3.1.

![Figure 3.1: The iterative nature of action research](image)

[Modified sources: Damme (1998); Ryder & Wilson (1997)].

However, it must be noted that by following the action research cycle does not mean that action research is being conducted. Action research “is not a method or a procedure but a series of commitments to observe and problematize through the practice of a series of principles for conducting social enquiry” (McTaggart, 1996, p.248).

A genuine PAR process may change shape and focus over time as participants focus and refocus their understandings of what really is happening and
what is really important to them. Therefore the data collected are driven by the information needs for decision making and action determined by the research participants. The research cycle enables participants to continue to refocus and reframe their activities throughout the stages of the research process, through participant engagement and ongoing evaluation.

**Data Analysis**

The purpose of analysing data in PAR is to clarify experiences and events, to develop joint understandings, and to use the outcomes of the research to effect positive change in participants’ lives (Heron & Reason, 2001). The cyclical process of analysis enables participants and researchers to continue to refocus and reframe their activities for immediately applicable results for social action. Stringer (1999) notes that a collaborative method of analysis in participatory action research strengthens research outcomes.

In PAR the analysis is presented containing examples of the voice of the participants and includes the social context and history in which the voices are embedded, where interpretation is contextualised. Denzin (1997) reinforces the need to formulate evocative accounts that provide empathetic understandings of events and experiences. Denzin (1989) describes the presentation of PAR as *thick interpretation* based on thick descriptions, as distinct from *thin interpretation* which is devoid of context, biography, interaction, history and social relationships (Denzin, 1989).

**Evaluation**

Evaluation in PAR can take place during the ‘Act’ phase of the research action cycle, either within a single participant or as a way for participants to review their progress, and defines outcomes that are acceptable to stakeholders (Stringer, 1999). Evaluation is an inherent part of the participatory action research design and can be formative or summative. Summative processes measure or describe data based on predetermined outcomes, and formative evaluations describe the qualities of the process undertaken. Neither process provides a definitive assessment, but contributes toward actions recommended by participants, through reflection of both processes (formative data) and outcomes (summative data).
RESEARCH PROCESS

The research design for this study involved three stages:

Stage one: Planning the Telehealth Project
Stage Two: Participant engagement
Stage three: Evaluation of the planning process

The research process is based on a framework of action that involves planning to prioritise and define tasks, implementing activities to achieve tasks, and evaluating and reviewing progress. A number of research cycles were conducted within each stage. Observe – construct a preliminary picture of the situation and develop an understanding of the settings social dynamics, and build a picture of participants’ work or community context. Reflect - issue or problem clarification, and describe contexts in which they are found. Act – issue or problem resolution and the formulation of practical solutions.

PAR requires the research process to be designed and implemented collaboratively with participants and stakeholders. Initially a picture of the situation and context is built; the research statement and objectives are focused and refined; the scope of the inquiry is established; participants, sources and forms of information/data are identified, and a research action plan is developed. Procedures for data collection, analysis and validation are then identified, and actions formulated and subsequently evaluated.

A research action plan is developed to guide the research stages of data collection, analysis, action and evaluation. To build a preliminary picture, the researcher initially engages in a reflective process of her own experiences and knowledge, in order to identify the research problem and the people affected by or having an effect on the problem. The researcher then presents her/his reflections to participants, and acts as a resource by assisting or facilitating participants to clarify issues further, acquire information, define the problem in their own terms and refine details of the study. Literature is reviewed by the researcher and participants, and any relevant issues that may shed light on the issue are considered (Spradley, 1979).

The research process includes the requirements for this study, and the Commonwealth and State government obligations of the WADOH Telehealth Project. This is diagrammatically presented in Figure 3.2.
Figure 3.2 Context of the research process

**WADOH Telehealth Project**
- Funding obligations
- Government committees
- Industry input

**Participatory Action Research Study**
- Planning the Telehealth Project
- Participant engagement
- Evaluation of the planning process

**Research Process**
Figure 3.3: Summary of the research process

Stage One: Planning the Telehealth Project

1.1 Building a preliminary picture - Researcher

1.2 Building a preliminary picture - CRG

1.3 Building a preliminary picture - Key person at each site

1.4 Focus & frame the study

1.5 Preliminary literature review

1.6 Project Action Plan

Stage Two: Participant engagement

2.1 Site Information

2.2 Rural & remote participant meetings

2.3 Other contextual information

SIP A SIP B SIP C SIP D

2.4 Telehealth Project Plan

2.5 WADOH management meeting

Telehealth Implementation Plan

Stage Three: Evaluation of planning process

3. Audit Review Evaluation TIP

Interviews Planning Evaluation Report

Key:
- CRG: Critical Reference Group
- TIWG: Telecommunications Infrastructure Working Group
- TSC: Telehealth Steering Committee
- NTN: Networking the Nation (Commonwealth government funding)
- SIP: Site Implementation Plan
## Stage One: Planning The Telehealth Project

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### OBSERVE

- Review initial funding applications; observe WADOH telehealth (TSC), and state-wide telecommunications (TIWG) planning meetings.
- Own experiences living and working in rural and remote Australia.
- Expectations of WADOH and TIWG.

### REFLECT

- CRG meet to review the project problem, question and objectives.
- Refine details of the project to date.
- Construct a picture of each site.
- Identify local issues identified by key persons.

### ACT

- Clarify issues and problems, and identify a project questions and objectives.
- Identify sites and key people for study.
- Formulate project questions.
- Draft scope of the inquiry.
- Identify research participants/stakeholders and contact to invite to meetings.
- 1.4.1 Present back to CRG.
- 1.4.2 Include opinion of TIWG and TSC.
- 1.4.3 Refinement of project questions.
- 1.4.4 Confirm broad parameters, number of people involved, time period, site names, research team and support.

### Figure 3.4: Stage One: Planning the Telehealth Project
In an ideal world, an action research process would progress through information gathering, observation, reflection, feedback and action cycles as presented in Figure 3.1. To present the cyclical nature of events that took place during the study’s Stages it would be necessary to illustrate step by step developments and the structures that impacted on them, into a comprehensive analysis. Therefore at each stage of the cycle, structure and process features are examined to inform subsequent stages. A participatory action research study is difficult to represent in a two dimensional format. Therefore, for the purpose of this dissertation, data are represented in chronological order, and sections are numbered for reference purposes, and are not to indicate chronological order.

Details of cycles are presented sequentially in Figures 3.4, 3.6 and 3.8, and an example of action research cycles is diagrammatically presented in Figure 3.5. As can be seen from the graphic, action research is a spiral of cycles of planning, acting, observing, reflecting and then replanning.
1.1 Building a preliminary picture – researcher

Engaging the field:

This study emerged from the West Australian Department Of Health (WADOH) where I was initially involved as a project officer working with the Chief Medical Officer. In planning for the development of a project action plan for the
delivery of telecommunications and telehealth services to rural and remote Western Australia, I was a participant observer to the initial funding application to the Commonwealth, and later between the WADOH and the Department of Commerce and Trade’s Office of Information and Communication (OIC).

My role was expedited by being appointed as Acting Director of the Telehealth Development Unit. I was required to become a conduit between the WADOH, who employed the Telehealth Project team, and the Department of Commerce and Trade, where the team had been seconded. This allowed close engagement with many levels of State and Commonwealth government, including the Director General of Health, government Ministers and national committees.

In this first cycle of observation, reflection and action, I assisted in constructing the initial funding applications and attended planning meetings for telehealth services conducted by the WADOH. I reflected on the expectations of the public servants attending the WADOH planning meetings, and on my experiences while working and living in rural and remote Australia. Reflections were recorded as journal entries, data were coded and categorised, themes identified and a description of the problem constructed. Project questions and objectives were identified for presentation to the critical reference group (CRG).

1.2 Building a preliminary picture – Critical Reference Group (CRG)

A critical reference group of eight participants was established to review the project problems, questions and objectives. The CRG comprised health professionals from a variety of disciplines, rural community members who had been involved with telecommunications or health interest groups, and a health consumer advocate.

By continuing the research cycles of observe-reflect-act commenced during 1.1, the details of the investigation were further refined.

Based on the list of twenty sites to be funded by the Commonwealth government for the Telehealth project, the group identified four rural and remote sites in Western Australia. These sites were selected to meet the following criteria:

- Inclusion within the group approved for Commonwealth government funding.
- Incorporation of various site characteristics:
  - A network of communities within one Health Service area (Sites A, B and C).
Type of health facilities available to the community: no health facilities (Site A); minimal health facilities or small district hospital (Site B); larger district hospital or small regional hospital (Site C); and large regional hospital (Site D).

Representation of categories within the Rural, Remote & Metropolitan Areas Classification System (Department of Primary Industries and Energy & Department of Human Services and Health, 1997). The categories included were rural other (Site C), remote major (Site D) and remote other (Site A). [Site B did not exist in the 1997 document].

Enablement of affordable access to the sites by the research team.

Indication of support for the Telehealth project.

Indication of willingness to work collaboratively with the WADOH in the planning, implementation and evaluation stages of the project.

Existence of a local telehealth ‘champion’ – with an interest, motivation and ability to promote the benefits of the project.

A key person from each site was identified to assist further in clarifying the issues or problems. This led to improved relevance of the inquiry for those who shared the issue or problem. Project questions were formulated and the scope of the inquiry drafted.

1.3 Building a preliminary picture – Key persons and sources of information

The key person in each site was interviewed to construct a preliminary picture of the situation, that is, to develop an understanding of each site’s social dynamics. In each site the key person, with assistance from the researcher, identified focus groups and their membership, other key people, the nature of the community, the purposes and organisational structure of relevant agencies, and the perceived relationships between individuals, groups and current health services.

General information and statistics were collected about each site to inform the researcher of groups that should be included in the study and to build a picture to inform participants during the planning process. This included:

- Site’s Regional Health Service
- Category of location – regional, district, community (Rural, Remote and Metropolitan Area Classification, 1997)
- Predominant activities in the site (e.g. farming, mining)
Accessibility to regional centre, Perth and services
- Weather patterns (Australian Bureau of Meteorology, 1998)
- Political influences

Demographics (Australian Bureau of Statistics, 2001)
- Census data – population, employment type, unemployment, age, education, language spoken at home, income, Aboriginality

Health statistics (Health Department of Western Australia, 1998b)
- Available clinical services (local, visiting or sessional)
- Acute patient movement
- Discharges
- Top 20 Disease Related Groups
- Description of transfers to other hospitals
- Description of transfers within and out of the region
- Patients using Patient Assisted Transport Scheme
- Telepsychiatry services

Community services
- Based on data from Community Directory from councils

Telecommunications and Information Technology infrastructure to site
- From Telstra

Local politicians and Council

Based on this information, potential research participants were identified. A sample of participants was purposively selected to include participants from groups likely to have a significant impact on the research issue, or be impacted by that issue, and to represent diverse perspectives and experiences. This method of purposive sampling within a participatory action research methodology enabled the search for solutions to problems and questions that were context specific. The sample of research participants derived from the four rural and remote sites and those who had, or potentially had contact with these sites. These individuals include community members and groups, rural and remote health professionals, specialist health service providers and employees of various government departments. The participants included were acknowledged to be able to speak for a group or community, and those whom the group or community members acknowledged as representing their perspectives.
The key person contacted the relevant individuals to ascertain their willingness to be involved in this study and to arrange meeting details. In smaller sites focus groups consisted of one community and one health provider group. In two cases there was an overlap as participants provided services between the two smaller sites. Larger sites required between eight and thirteen groups, and in these sites participants in each health provider group were from a single discipline.

1.4 Focusing and framing the study

The CRG again met to review the data from the preliminary picture (1.1-1.3), and to define the issues on which the investigation focused; the specific physical location of the investigation and the principal focus groups, participants and stakeholders, and the organisations, policies, programs and services affecting the issue in the local context. The purpose, significance, and the content of each section/chapter of the report were also reviewed against any specified guidelines.

Documentary sources relating to the allocation of project funding from the Commonwealth government, and a summary of minutes from the Telehealth Steering Committee (TSC) and Telecommunications Infrastructure Working Group (TIWG) were distributed to CRG members for review.

Two additional group meetings were held to refine the project questions upon which the study would initially focus, and to establish the scope of the inquiry (site names, number of researchers, time period, and support available). All meetings were audio-recorded, transcribed, and sent in summary format to CRG members for validation.

1.5 Literature and document review

The literature review contributed to the reflection phase of the research cycles, providing new possibilities for interpreting issues. During this stage of the investigation participant and researcher perspectives and experiences were augmented and challenged by other information and perspectives described in the literature. Key people and participants also contributed to the identification of relevant literature and this was distributed at CRG meetings, and later at focus groups or interviews.

The preliminary review of the literature within the first iteration of the participatory action research cycle was conducted through the lens of the researcher’s initial project questions, assisting with the refinement of the project question by the
CRG and key people, and providing insight into research methods. The literature review continued to evolve as an ongoing feature of the research process, emerging in accordance with the participants’ reflections of their situations.

Documents initially reviewed included the Telehealth Workshop Report, dated 7/07/1998; the State Government Cabinet Submission tabled for approval to establish the state-wide telecommunications network and secure State funding to match the Commonwealth government contribution to the WADOH; and minutes from all meetings of the Telecommunications Infrastructure Working Group, to 30/06/99. Documentary sources also identified possible solutions and in two significant cases, influenced the direction of the Telehealth project. These included participants from rural and metropolitan hospital Emergency Departments, who became aware of the poor use of videoconferencing technologies for medical emergencies in similar departments overseas and subsequently focused on other issues. In addition, the positive potential for conducting speech therapy from large rural centres to remote or satellite sites was identified through literature and became a priority in two sites.

1.6 Research Action Plan

By observing, interacting and talking informally with people a preliminary picture was built of who would be involved; who would be affected by the introduction of telehealth technologies; what was currently happening; and how, when and where these events took place. By reflecting on the emerging picture, the researchers, CRG and key persons from the four sites were able to undertake a preliminary analysis of the situation and develop a clearer understanding of the issues. Emerging from this reflection was an action plan for the implementation of the next stages. The Research Action Plan included the sites, sample group, data collection and analysis methods, and evaluation processes.

A collaborative approach using predominantly focus groups and in-depth interviews which centred on the actions derived from the research reflected the participatory action research approach. The research design indicated the type of data analysis to be employed and the use to which the analysed data might be applied to actions emerging in the latter stages of the study. An interpretive data analysis method was chosen to focus on the ways events were described and interpreted in people’s everyday lives.
## Stage Two: Participant Engagement

<table>
<thead>
<tr>
<th>OBEERVE</th>
<th>REFLECT</th>
<th>ACT</th>
</tr>
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<tbody>
<tr>
<td>2.1 Remote and rural participant information/literature.</td>
<td>Collect data relating to each site and provide to participants prior to interview.</td>
<td></td>
</tr>
<tr>
<td>2.2 Remote and rural participant meetings.</td>
<td>Meet with participants to discuss concept of health, describe social model of health, identify health activities undertaken, and ascertain method of validating outcomes.</td>
<td>Consider telehealth. Assist participants to clarify problems and describe contexts in which these problems are embedded. Resolve problems identified and formulate practical solutions. Validate outcomes with participants. Create reports – Site Implementation Plans (SIP).</td>
</tr>
<tr>
<td>2.3 Other contextual information.</td>
<td>Observe TIWG and TSC meetings. Interview metropolitan informants.</td>
<td>Impact decisions have on local requirements. Incorporate in reporting.</td>
</tr>
<tr>
<td>2.4 Data analysis.</td>
<td>Code, categorise and identify themes.</td>
<td>Work with participants gain agreement on SIP. Combine SIPs to create report – Telehealth Project Plan (TPP).</td>
</tr>
<tr>
<td>2.5 Data reporting</td>
<td>Observe health management meetings</td>
<td>Impact decisions have on local requirements. Create Telehealth Implementation Plan (TIP)</td>
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### Figure 3.6: Stage Two: Participant Engagement

Stringer and Genat (2004) stress that the power of research is greatly enhanced where researchers engage in exploration with those affected by the issue, for example, community residents, health practitioners, public servants or indigenous groups. It focuses on outcomes constructed on a person’s or group’s own meaning and is the basis for effecting positive change in their lives (Heron & Reason, 2001). A method of accomplishing this is to identify, capture and analyse participants’ experiences to “reveal the element of experience through which they compose and construct their ongoing lives” (Denzin, 1989, p.32). This represents an approach which results in significant changes to people’s perceptions of their lives, and offers an opportunity for researchers to identify features and elements in their own work.
Data collection

During a 19 month period data was collected for stage two of the study. Data collection methods included individual in-depth interviews, focus groups and committee meetings. A variety of meeting formats and venues was chosen to enable participants to work productively and to provide surroundings that were not alien to participants (Stringer, 1999, p.80). Data were recorded using field notes and audiotapes. Due to the large number of research participants, two group facilitators additional to the researcher were used. To ensure a consistent approach to data collection, group facilitators were prepared by the key researcher with team meetings and training relevant to the study. A list of open ended questions was used at all interviews and in Stage two (Appendix IV).

Participants involved with the research process explored the contribution telehealth could make to improving health services in their own rural and remote West Australian site. The main source of data for stage two was provided by:

- Thirty rural community members and individuals representing their own interests, or those of community interest groups and local government.
- Eighty-four rural and remote health professionals.
- Forty-four public servants.
- Eighteen metropolitan health professionals (plus data from those involved in tertiary teaching hospital telehealth technology trials).

The lists of interviews are attached as Appendix V and Appendix VI.

Many health professionals living and working in rural and remote areas were key community members and were considered to represent local community interests, as well as health issues. This was particularly evident in the smaller sites.

Public servants were predominantly from State Government departments responsible for health planning, telecommunications, health information technology, and hospitals. Committee meetings relating to telecommunications involved representatives from all State Government departments. Discussions and meetings also involved Commonwealth public servants from the Department of Communications, Information & the Arts.

Data were also collected from documentary sources. Data collection focused on desired outcomes including participants’ understanding of potential telehealth applications; telecommunications requirements to deliver these applications; the political, economic and social contexts of the sites; and planning considerations.
Documents identifying potential stakeholder groups and statistical records included primary sources such as health statistics, demographic and social data, and written submissions about local health service requirements.

Secondary sources such as government and telecommunications industry plans and reports were also analysed. These included strategic plans and policies which represented the official views of the Commonwealth and State governments, and reports commissioned by their departments to address particular issues such as business plans for telehealth, telecommunications markets and funding issues. The data also included documents related to equity programs and strategies to foster broader participation by residents in rural and remote areas, women and Aboriginal and Torres Strait Islander people.

As part of the data collection process, relevant literature was sourced by the researcher and provided to participants for review. This assisted in identifying pertinent information to enhance the understandings emerging from other sources. Other studies within the literature provided other perspectives incorporated into the process of data collection and analysis.

2.1 Remote and rural participant information

The objective of the first phase of the participatory action research cycle, ‘Observe’, was for the researcher to assist participants to acquire information to build a picture of their work and/or community context. To enable the development of the participants’ descriptive accounts, the researchers collected data relating to each site and provided this information to each group prior to the first interviews. This included Health Service client and provider demographics, current clinical activities and available funding options. This information was sourced from the *Australian 1991 Census*, Australian Bureau of Statistics; *1996 Census of Population and Housing*, Australian Bureau of Statistics; National Climate Centre, Commonwealth of Australia 1998, Australian Bureau of Meteorology; Health Department of Western Australia (1998b) *Regional Epidemiological Health Data*; and Site-specific *Community Services Directory*.

2.2 Remote and rural participant meetings (Appendix V)

The researcher and facilitators met with participants to discuss their understanding of health and to enable the researcher to describe the social model of health. Meetings were also intended to identify the health activities that were
undertaken at their site, and to ascertain the individual’s or group’s preferred method of validating outcomes of discussions (for example, returning the summary of the interview, or presentation of summary at another group meeting).

Applying the next phase of the action research cycle, ‘Reflect’, the researcher assisted participants to clarify issues and problems and describe the contexts within which those issues are embedded. To enable this, the key researcher and a trained group facilitator explained telehealth and assisted participants to discuss the aims, benefits and anticipated outcomes of telehealth for their site/health service within a social model of health framework. They were also asked to identify telehealth related needs, issues or problems; construct explanations of their problematic experiences, and develop joint constructions to interpret and explain the identified problems.

The third phase of the participatory action research cycle, ‘Act’, involved the resolution of the problems identified and the formulation of practical solutions. In the latter stages of the discussions, the key researcher and/or group facilitator assisted the participants to identify the appropriateness and feasibility of telehealth applications to be developed.

All discussions were audio-tape recorded and transcribed. Two or more successive meetings were required for this phase. When clarification of information was required, interviews were convened with the relevant individual or further interviews with the group as a whole. A summary sheet of all meetings was prepared, and findings returned for validation, using a process as previously agreed by each group.

Concurrently, the Telehealth Development Unit identified available telehealth resources and those that would be required for each site. Based on the information gathered, a Site Implementation Plan was developed in conjunction with the Health Department of Western Australia.

2.3 Other contextual information

It was necessary to include other information in the study, as this would impact on what new health services could financially and politically deliver.

To map the planning process used by WADOH for the Telehealth Project, documents were collected including minutes of committee meetings from the West Australian Department of Health, and Office of Information and Communication (OIC), Department of Commerce and Trade. Individual in-depth interviews were
undertaken with seven key metropolitan stakeholders involved with the Telehealth Project (Appendix VI). Data were also collected from other stakeholders including:

- The Telehealth Steering Committee which met monthly to review progress with the Telehealth Project. Notes were taken during meetings and were incorporated in agendas for the committee. Observations were recorded as notes and journal entries and included in the Site Implementation Plan where appropriate. These observations primarily concerned the direction of the Telehealth project, and to plan for WADOH responses to State Government agency requirements for telecommunications funding from the WADOH. The researcher attended seven meetings between 7/10/1998 and 27/04/1999. Minutes from Telehealth Steering Committee meetings between May and October 1998 were reviewed as documentary sources.

- The Telecommunications Infrastructure Working Group (TIWG) which was created as a cross government agency group to develop the State-wide Telecommunications Enhancement Program (STEP), and determine how Commonwealth and State government funding would be utilised to purchase telecommunications infrastructure. One or two representatives attended these committee meetings from each State Government department.

- Fortnightly planning/update meetings with management from WADOH and OIC; weekly Telehealth Project team meetings; meetings between September and November 1998 with Department of Commerce and Trade staff to discuss opportunities to co-locate telehealth and Telecentres for general community access in smaller rural and remote sites; and monthly Australia & New Zealand Telehealth Committee meetings.

2.4 Data Analysis

Qualitative data, in the form of participant stories, were collected, coded and analysed concurrently. Data were analysed using an interpretive process (Stringer, 1999; Denzin, 1989). Categories of meaning for the participants were created by: coding data to reveal elements and key features; constructing, in which the coded elements were classified, ordered and reassembled into coherent accounts to identify converging and diverging perspectives. Data were then contextualised for comparison and contrast with existing literature and compared with other
information to formulate joint or collaborative interpretive accounts, through a process of thematic analysis. Stringer (1999) notes that a collaborative method of analysis in PAR strengthens research outcomes.

By using interpretive data analysis the researcher was able to construct joint accounts to reveal participant perspectives, and the categories or codes provided a framework of concepts for formulating action plans and reports. The interpretation was then “framed in terms that participants use in their everyday lives, rather than in terms derived from the academic disciplines of professional practice” (Stringer, 1999, p.91). Framing interpretation in this way was considered critical to the acceptance of the Site Implementation Plan. A full Site Implementation Plan was presented to each site based on thick descriptions where interpretation was contextualised (Denzin, 1989).

The resulting Telehealth Project Plan (incorporating each Site Implementation Plan) had to be available and acceptable to a wide and diverse audience. It was summarised as thin interpretation devoid of “…context, biography, interaction, history and social relationships” (Denzin, 1989, p.112) and presented to WADOH management. The Telehealth Project Plan is an example of thin interpretation based on thin description, a problem identified by Denzin (1997) where institutional requirements result in objectified research populations which do not readily enable the inclusion of human accounts, and which ignore the features of people’s experiences.

Communicating Research Results

Throughout the study it was essential to inform all participants of the continuing progress of the Telehealth Project. Therefore, a written account of meetings or interviews was sent to all participants for review and validation. Joint accounts from each site were organised around themes evolving from evident commonalities within the group members. An ongoing written record was maintained and reviewed systematically. Themes unique to individual sites were presented with de-identified data.

Reports:

Within this study a number of reports were developed, which contributed to the Telehealth Project, or were to meet State and Commonwealth Government
requirements (Figure 3.7). The phase of this study distinguishes the participatory action research method from other forms of investigation, as the results of data analysis were applied by the group immediately for practical purposes.

**Figure 3.7: Reports developed during study and WADOH Telehealth Project.**

![Diagram of reports]

The Telehealth Project, templates and timelines for formal written reports were clearly outlined in the funding guidelines as set by the Commonwealth Department of Communications, Information, Technology and the Arts (Report 1). A framework for constructing formal reports to rural and remote area participants was also developed to do justice to the rigour and efficacy of the community-based participatory action research process. The method and timing of reporting was determined by participants and agreed upon at meetings or interviews (Report 2).

As continuing funding of projects often rests on the power of reports, (Stringer, 1999, p.165), state government stakeholders with the Telehealth Project also required formally structured reports presenting technical features of the research process, without the detailed descriptions and analyses of the outcomes of the investigation (Report 3). Three different reports were written for three different audiences, all with different emphases. The first was to demonstrate that funding timelines were met against established objectives; the second, to provide accounts describing participant perspectives; and the third, to summarise the proposed
technical applications to be delivered. Whilst not losing significant information the reports therefore had to be in a form acceptable within the context of two major government groups.

External to the study a fourth report, the WADOH Telehealth Implementation Plan, proposed the technical applications decided by WADOH to be delivered to rural and remote areas. The Planning Evaluation Report (Report 5) provided a summary of the contribution rural and remote area participants had made in the planning process, as well as the acceptability and appropriateness of the WADOH Telehealth Site Implementation Plan (Report 2), and WADOH Telehealth Implementation Plan (Report 4).

### Stage Three: Evaluation Of The Planning Process

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<tr>
<td>Audit Review Evaluation of Telehealth Implementation Plan</td>
<td>Distribute open ended questionnaires to rural and remote participants. Undertake interviews.</td>
<td>Identify positives, gaps and irrelevancies in telehealth applications. Create Planning Evaluation Report</td>
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**Figure 3.8: Stage Three: Evaluation of the planning process**

The study involved an evaluative component in which an exploration was undertaken of the level of community participation during planning for telehealth, and acceptability of telehealth applications proposed by WADOH. The evaluation was formative and summative, to include both process and outcome measures. Participants undertook the evaluation fourteen months after initially validating the original Site Implementation Plan. The large time frame was required to enable WADOH to commence implementation of the Telehealth Project.

Evaluation is an essential part of the participatory action research cycle, and requires an approach that fits the action research approach and interpretive paradigm. The Audit Review Evaluation as described by Wadsworth (1997) was used in this study to determine if intended objectives were achieved. This enabled the evaluation
of locally defined objectives, provided evidence of the extent to which they had or had not been met, and enabled the identification of gaps and irrelevancies. The co-operative or participatory evaluation approach used allowed involvement by all research participants in all phases of the evaluation process (Northern Community Health Research Unit, 1991). In keeping with this approach the anticipated improvement in health services at the community level and also the nature of the community participation were evaluated (Oakley, 1989).

Evaluation data were collected using a survey questionnaire (see Appendix X). This questionnaire was developed from information gathered during participant interviews and meetings. The evaluation assessed the level of community participation during planning and implementation of telehealth, acceptability and anticipated accessibility of telehealth applications, and anticipated improvement in the new or enhanced health service (US Department of Commerce, 1997; Oakley, 1989). The generic questions were modified to reflect the desired aims and outcomes of each site. The main questions asked for participants’:

- Perception of community participation/consultation during planning for telehealth.
- Adequacy of the telehealth site implementation plan proposed by HDWA to meet resolutions identified in planning process.
- Acceptability of the telehealth site implementation plan proposed by HDWA.
- Appropriateness of the service to be delivered (allocative efficiency).
- Access to appropriate services (equity).
- Level of co-operation between individuals, organisations and government structure during the planning process.

The open-ended questionnaire was sent to 68 people from rural and remote areas who participated in initial interviews (approximately fourteen months after planning meetings for this study). Twenty-four were received (32%). Three returned questionnaires were combined responses from rural and remote health professionals. Responses were received from:

- Three public servants.
- Nineteen rural and remote health professionals.
Two rural community members and individuals representing their own interests or those of community and interest groups, and local government. Further individual telephone and in-person in-depth interviews were conducted for clarification of survey responses, and or when requested by a number of survey recipients who wanted to ensure anonymity by not writing responses. Due to the movement of rural and remote health professionals to other states and overseas, it was not possible to include all original study participants. Concurrently the WADOH was evaluating other aspects of the wider project, for example, the technical quality of images and applications. These were reported separate to this study.

Further evaluation interviews were conducted with six senior managers from WADOH who had been involved in planning for the Telehealth Project. These semi-structured interviews were conducted to determine their perception of project planning and level of co-operation between individuals, organisations and government structure during the planning process. Interview questions were based on those used in the survey questionnaire, and are presented as Appendix XI.

RIGOUR

Participatory action research, being a qualitative research method, seeks to construct understandings of the shifting and multifaceted social world of its participants. The research is specific to the participants’ context and true only for the people, the time and setting of that particular study (Stringer, 1999). To determine whether the research adequately achieves this, an examination of the rigour of the research is required.

Procedures for evaluating rigour in quantitative research concern processes for testing reliability and establishing validity. However, qualitative research methods require alternate criteria for assessing the rigour of research. The rigour of participatory action research is verified through procedures establishing whether the research outcomes are worthy of trust (Denzin & Lincoln, 1998). Trustworthiness is established through credibility, transferability, dependability, confirmability (Lincoln & Guba, 1985) and participation and utility (Stringer, 1999). The rigour and trustworthiness of this study was established through the application of these criteria. The following account describes how this study meets these criteria.
Credibility

Establishing credibility is grounded in participant acceptance of research findings. To achieve credibility, Lincoln and Guba (1985) and Stringer (1999) recommend the need to use techniques of prolonged engagement, persistent observation, triangulation, peer debriefing, diverse case analysis, participant checks and referential adequacy.

Prolonged engagement:

In this study, prolonged engagement involved the investment of sufficient time to learn the perspective of the participants, clarify information and build trust. This time comprised an extensive research design stage that enabled an accurate picture of the issues and sites to be included in the study. It also allowed the researcher to reflect on her/my own preconceptions about telehealth applications, thereby contributing toward study rigour. Time spent in the research process was recorded to add further credibility to the study. The technique of prolonged engagement also enabled researchers to establish trust amongst participants in the development of the Site Implementation Plan. Participants demonstrated this by expressing confidence that their anonymity was assured, and that input would be included even if conflicting with opinions of government stakeholders.

Persistent observation:

The research process for this study was systematic and observations were focused and recorded. Data collection records include the number and duration of observations, interviews and meetings. Accuracy and adequacy of research data were established through written verification of interview records.

Triangulation:

The term triangulation is used in this dissertation to describe the use of multiple strategies to reveal the comprehensive nature of the research outcomes and (Streubert & Carpenter, 1995) with an aim to “overcome the intrinsic bias that comes from single-method, single-observer, and single-theory studies (Denzin, 1989, p.313). This approach includes several different sources of data, methods of investigation and theories (Lincoln & Guba, 1985), and is used to search for convergences and divergences for data.
Several types of triangulation were used for the study: data (person) triangulation, investigator triangulation, theory triangulation, and method triangulation (Polit & Beck, 2004; Denzin, 1989). Data (person) triangulation involved collecting data from different people at sites with different characteristics, participants from varying rural and remote area backgrounds, and participants from private industry and government, to validate the data through multiple perspectives. Investigator triangulation was used to analyse and interpret the interview data from the divergent perspectives of the key researcher and two other Telehealth Project team members. The analyses were compared and contrasted to perfect the themes and triangulate the findings. With theory triangulation, the researcher used the competing theoretical approaches of technological determinism and community participation to analyse and interpret the data. This was particularly important to prevent premature conceptualisation of themes by the researcher. Multiple means of collecting data were used to achieve method triangulation. These were semi-structured and unstructured interviews, observations, literature and document review, and a survey with open ended questions.

Peer debriefing:

A main purpose of meeting with peers is to explore researcher assumptions and biases. The process also enables the exploration and clarification of interpretations and the testing of working hypotheses (Lincoln & Guba, 1985). The credibility of this study was enhanced through peer debriefing sessions with co-researchers and the critical reference group, and demonstrated by the identification of researcher assumptions that were challenged at meeting presentations.

Diverse case analysis:

In all research it is necessary to ensure that positive and negative interpretations of data are investigated. In this study data collected from rural and remote area participants were explored. Also included were perspectives from associated government stakeholders enabling inclusion of all interpretations in the final reports. Including all perspectives affecting the study in the Telehealth Project Plan enhanced the credibility of the study.

Participant checks:

Establishing credibility through participant checks of information gathered and outcomes revealed was an important part of the study. Participant checks took
place throughout the research process, ensuring acceptance of data, and of interpretations and conclusions drawn by the researcher. Feedback was provided in written and verbal format during stages one and two of this study.

**Referential adequacy:**

This study sought to produce reports that ensured all perspectives were taken into account, and with broad acceptance amongst rural and remote community members, health professionals, public servants and government departments. This has been only partially achieved, as the language of research participants could not be reflected in the Telehealth Project Plan due to expectations of management reporting methods.

**Transferability**

The second criterion for achieving trustworthiness is transferability. For this, a strategy of thick descriptions is necessary to enable the information to be applied to their own different situation and place (Lincoln & Guba, 1985). For this to take place, the reports produced in this study include the research context, and therefore allow a conclusion to be reached on whether the information can be transferred to other contexts.

**Dependability**

To enhance further the trustworthiness of the data, two additional strategies were applied. The data collection process was made transparent and reports were made available to participants for examination. Secondly, a data collection record was maintained through all stages of the study. In this record the researcher’s reactions to meetings and interviews were documented within one day of their occurrence. The effectiveness of the record was reflected in being able to identify any personal bias which may have affected the data.

**Confirmability**

The fourth criterion is confirmability and refers to evidence of the “neutrality of the data, such that there would be agreement between two or more independent people about the data’s relevance or meaning” (Polit & Beck, 2004, p.431).
Confirmability “is the degree to which study results are derived from characteristics of the participants and the study context, not from researcher bias” (ibid, p.36).

In this study, confirmability was achieved through the data audit trail and audit process (Lincoln & Guba, 1985). An audit with the four rural and remote sites was conducted during and at the conclusion of the data collection process. This was achieved through moving back and forth through the data, ensuring credibility of analysis through discussion of preliminary findings with participants at each Site, and the Telehealth Steering Committee, ensuring that the analysis reflected consistency in relation to expectations, needs and interests of health services, and meeting outcomes.

**Participation and utility**

The strength of the procedures in participatory action research derives from the maintenance of participant perspectives, and representation of their experiences in the data, through the research design, collection, analysis and evaluation stages. These participatory processes were used to ensure the rigour of this study, and also to enhance the possibility of effective change.

A significant source of rigour in action research is the application of research outcomes (Stringer & Genat, 2004). In this study, the Site Implementation Plans (SIP) and Telehealth Project Plan have broad significance and utility to each Site. For example, the finding that community decisions are not always those anticipated by bureaucrats, provides evidence of the utility of the SIP in understanding rural and remote area needs in relation to health and telecommunications.

**ETHICAL CONSIDERATIONS**

The research design of this study included ethical considerations to protect the well being and interests of research participants. Ethical research procedures were established by ensuring confidentiality, care and sensitivity, permissions and informed consent.

Written materials outlining the purpose and nature of the study, contact person, formal consent and confidentiality arrangements were given to each participant or group representative prior to initial interview or meeting (see Appendix
III, VII, VIII & IX). Informed consent to be part of the study was obtained by verbal or written agreement. A researcher journal entry of all verbal agreements has been kept. All participants in Stage Two and Three of the study provided written informed consent in the form of Appendix III & IX, or on a group attendance form.

At the start of all interviews or meetings, specific reference was made to the anonymity to be provided to each participant. Participants were also reminded in writing that their participation was voluntary, that they were free to withdraw at any time, and information supplied by them would be returned on request. In a number of instances assurances were given that audio recorded or written statements would not be attributed to identifiable individuals. In all these cases, requests were from WADOH personnel. To protect the anonymity of participants, information was presented in a format to disguise its source.

A few individuals and groups requested modification of their own data, which was done. Two health managers requested exclusion of data presented by another individual in a group session. It was explained that this could not be done unless requested by the individual presenting the data, and reassurance was provided that site identifying information would not be used. Summaries of data were rewritten and returned to the groups for validation. Participants within these groups deemed this as acceptable.

Each participant or group was allocated an identification number. The codes are held by the researcher and kept separate from all data relating to the study. All data will be archived under secure conditions for five years as required by the National Health and Medical Research Council guidelines then destroyed by incineration.

Aligned with confidentiality was sensitivity to participants ensuring that their rights, values and beliefs were respected, and a duty of care ensuring information was stored securely and information not shared without permission from persons concerned. As the research was conducted within a project of the WADOH and was to become a public process, official written permission was granted from the relevant authorities. These were: the Commissioner of Health (Acting), Health Department of Western Australia; and the Executive Director of the Office of Information & Communications, Department of Commerce and Trade, as Chair of the Telehealth Steering Committee. Permission was also received for this study from the University Human Research Ethics Committee (Appendix XII).
LIMITATIONS AND PROBLEMS

At the commencement of data collection I became aware of my own bias toward rural and remote participants over government stakeholders’ perspectives. From then on I made a conscious effort to be open to all observations with stakeholders, and to confirm my journal entries and data with research facilitators or through peer debriefing sessions.

A specific problem to the study was the rejection of participant data by some stakeholders within the two state government departments associated with the project. The researchers stayed true to participant data in the Telehealth Project Plan, under pressure from these stakeholders to amend it. In the final report (Telehealth Implementation Plan) data were changed by government stakeholders due to management overriding participant needs. An example is the removal of all applications to support services for victims of domestic violence.

Other limitations included managers restricting attendance by some participants at group meetings. There was also a fourteen month delay before any WADOH implementation, and therefore a delay in sending evaluation questionnaires and subsequent cost restrictions to return to rural and remote areas for interviews resulted in a 30% questionnaire return rate. The final limitation was the format of the Telehealth Project Plan which precluded the use of different participant dialogue by state and commonwealth government reporting requirements.

CONCLUSION

In this chapter the methodological approach supporting the research was described. The chapter situated the study within the interpretive paradigm, and conceptualised within Donabedian’s (1969) framework. The methodological approach was a case study – the WADOH Telehealth Project - consisting of a PAR research approach. The collection and analysis of data was described within three stages. The chapter then identified and described the strategies used by the investigator to ensure the rigour of the findings, and the ethical considerations. The chapter to follow reports the findings from the analysis of planning for telehealth and telecommunications services in Western Australia.
CHAPTER FOUR

FINDINGS

INTRODUCTION

The findings of the study are derived from the analysis of government planning for telehealth and telecommunications services in Western Australia. The chapter presents an analysis of the themes which emerged from interview, observation and survey of community expectations, needs and interests involving telehealth; and State Government evaluative data on the planning process and outcomes for the delivery of telehealth services.

The chapter is designed to construct a comprehensive picture of the findings according to the study objectives of investigating influences on community participatory planning; how these informed the implementation of the Telehealth Project; and how understanding the structures and processes of developing and implementing the Telehealth Project contributes to our knowledge of community participation in planning. In this chapter I also explain my role as researcher and how I located my perspectives within the structures and processes of community engagement.

The analysis was conducted within the naturalistic, interpretive paradigm, guided by Donabedian’s (1969; 1992) conceptual framework of structure-process-outcome. Within this methodological approach, an action research study was designed which allowed data to be collected and analysed throughout the process of planning and implementing the telehealth project to inform subsequent stages of the study.

Data were classified into themes, coded, and then categorised to describe, interpret and constantly compare the accounts of the participants. For constant comparison, data were initially categorised into provisional themes, then re-categorised into larger themes using an iterative process (Glaser & Strauss, 1967).
Throughout the process I documented my own reflections in memos and field notes, referring to these throughout the study to enhance confirmability of the findings.

Sources Of Data

Findings for this chapter emerged from the analysis of data from four sources:

1. Interviews and participant observation of meetings between state and commonwealth government staff, industry members and key community representatives. From these data a preliminary picture of the broader context of the project planning process was developed. Issues highlighted were:
   - The processes for project planning.
   - Strategies for developing the project action plan for the delivery of telecommunications and telehealth services to rural and remote Western Australia.
   - Government decision making and outcomes related to the Telehealth Implementation Plan, and the intention of the meetings to incorporate community, government and funding expectations and needs.

2. Individual and small group interviews with rural and remote area participants, living in four sites, comprising regional, rural and remote areas of Western Australia. [In order to maintain anonymity of participants, each is referred by the Site they represent (A, B, C or D)]. The findings describe the participant’s expectations, needs and interests in relation to health, telehealth services and the changes required to their local health services to meet these needs.

3. Results of the survey that investigated perspectives on community and stakeholder participation in planning for the project, and acceptance of the final Telehealth Implementation Plan. This section also details findings from interviews about the project planning and cooperation during the planning process, with key WADOH staff and CRG members.

4. Semi-structured interviews about project planning and cooperation between individuals, community organizations, industry and government during the planning process, conducted with key WADOH staff and CRG members who were involved in the Telehealth Project.
Entering The Field

To build a preliminary picture of the Telehealth Project, I engaged in a reflective process of my own experiences and knowledge. In the context of being part of the Telehealth Project team, I reflected on my own experiences such as growing up in a remote mining town, then living and working in Australian Indigenous communities. I used my knowledge of the less than optimal health outcomes for people residing in rural and remote areas to become a participant observer and reflect on the needs and expectations of community members, West Australian Department Of Health (WADOH) and Telecommunications Infrastructure Working Group (TIWG). Like other rural and remote dwellers, I recognise that power resides in the city, and people living in rural and remote Australia need separate representation to articulate their voices (Dade-Smith, 2004).

I began my research by outlining my assumptions about the project. The first was that rural and remote areas miss out on services due to financial decisions made without reference to rural and remote communities’ lack of a critical mass of consumers. Second, my experiences have led me to assume that community participation is typically not extensive enough, and is often dominated by the most vocal participant. My third assumption was that technology should be used where it is appropriate, in line with principles of primary health care which mandate the appropriate use of technology. Having articulated my assumptions I was then able to maintain a perspective on my ideas as distinct from what was emerging at the findings. I was then able, through a reflective process, to revisit my assumptions at the end of the thematic analysis.

Themes

The findings have three overarching themes. Two themes constituted several sub-themes as follows:

- A common purpose: a commitment to meeting service needs.
- Dealing with differing expectations:-
  - Defining The Project
A COMMON PURPOSE: A COMMITMENT TO MEETING SERVICE NEEDS

The Telehealth Project had a common purpose to improve health and telecommunications services in rural and remote Western Australia, which was reinforced by the findings of the study. The need to have accessible, available and affordable health services was found to be a priority for WADOH staff and community participants. During focus group and individual interviews, community participants and health professionals identified a need to improve the quality of health services, improve access to health information for communities, increase access to locally based health services, and to maintain existing health services. Many participants expressed an interest in the uniqueness of health concerns for those living in rural and remote areas, particularly those related to distance from health services, social isolation and the living conditions for indigenous Australians “particularly for renal patients” (Site D, Occupational Therapist).

“There is such a long distance to visit clients, and therefore we can’t often access them (Site C, Social Worker).

We used to get people who’d come in and say ‘you’re here; you haven’t been here for a year’. Or they come and go and they’re
never there when the medic visits them, and they need a check of, say, a leprosy patient” (Site D, Nurse).

“When you’re on call in remote areas, and there’s a threat to physical safety it’s nice to have someone at the other end; another face saying I understand what this is, and what you’re going through” (Site C, Community Health Nurse).

The clearest convergence of opinion between community, government and industry participants in this study was reached in relation to the expectation for improved telecommunications services to rural and remote Western Australia. The findings indicated that all participants considered telecommunications services in rural and remote Western Australia to be inadequate or non-existent. The divergence in opinion between participants was found to occur in the actual applications requested, which reflected the levels of understanding of the capabilities of telecommunications.

For the duration of this study and the Telehealth Project, the health needs of WADOH and community participants were often found to be subsumed by a government requirement for control of telecommunications and the associated funding, and to meet the needs of other government departments such as police and education. While the improvement of health and telecommunications throughout rural and remote Western Australia were project aims from the start, a disproportionate amount of time was spent on planning for telecommunications, which did not necessarily meet community and government service needs. It was found that technology drove demand, as one WADOH staff member said, “Put in telecommunications, and health will come!”. As the findings from the evaluation survey and interviews will show, outcomes were less than optimal.

The conflict for control of project funding influenced the control and implementation of telecommunications, affected how applications to improve health and telecommunications were planned, and influenced the commitment to meeting service needs in rural and remote areas of Western Australia.
DEALING WITH DIFFERING EXPECTATIONS

Differing expectations, needs and interests of community participants, government employees and industry representatives were evident in the conflicting ideas of what constituted the project plan, which subsequently delayed the community consultation process.

The process for defining the Telehealth Project Plan was fragmented, that is, the expected outcomes for the rural and remote area participants were vastly different in nature from the professional and financial outcomes for management staff and external telecommunications bodies. The Telehealth Project Plan evolved over time, in response to numerous influences which are described in the following section.

The process for defining the telehealth project was found to be inconsistent, lacking cohesion and greatly influenced by telecommunications providers and their government counterparts. This was evident in the history of the project. The first plan for telehealth looked at radiology image transfer, but this was not supported by medical practitioners in Western Australia and the costs were deemed to be too high (Evaluation interview with WADOH radiographer). WADOH staff then reviewed similar Australian and international projects and proposed the building of a telecommunications network to support health applications, such as radiology transfer. However, this would have meant that WADOH would become a telecommunications provider competing with private industry interests and therefore it did not go ahead. “Agencies would ... remove themselves from the practice of owning their own networks and focus on management and strategic development” (WADOH, Director of IT Systems).

While an original telehealth staff member identified the plan as “technologically and sociologically unique”, other WADOH staff stated that the consultation process during this time incorrectly raised expectations of much improved telecommunications services, such as mobile telephony in remote areas. Consequently, a telehealth staff member identified that “some community members were hostile when they realised they were not getting what was promised” that is, improved health and telecommunications in the eventual Telehealth Project.
The final version of the Telehealth Project was found to focus on communities requiring health services, rather than telecommunications capability. However, the political requirement to manage the Telehealth Project, became one of who will “own the project” (Telehealth Project Manager). It was also about identifying consumers of telecommunications, by planning with local people for their needs and expectations. In an attempt to address these issues a Critical Reference Group (CRG) was formed to reflect on the project to date, and to refine the details of the Telehealth Project. The CRG had the responsibility to focus and frame the Telehealth Project by reviewing data from the preliminary picture of each Site and defining local issues, reviewing documents relating to minutes from the Telehealth Steering Committee (TSC) and Telecommunications Infrastructure Working Group (TIWG), and finalising the scope of the Telehealth Project.

**Defining The Project**

Initial attempts to prioritise the focus of the Telehealth Project were found to reflect a lack of trust in community identified needs. The Critical Reference Group (CRG) was clearly divided into two groups. One group comprised community members, rural health professionals and Telehealth Project team members, who described the starting point for defining the project as reviewing local needs. The other group comprised public service managers and those controlling the distribution of funds, and were found to focus on the division of federal funds, e.g. (x) dollars will fix (y) problem. It was found that when WADOH staff returned to the CRG with demographic data from each site (as well as experiences and understandings of health from the community perspective), the group were able to reflect on the health issues causing concern for each site, and then review the funding requirements to meet these concerns.

Development of the project objectives was found to be problematic due to the division between how community participants experienced the issue and how information was interpreted by metropolitan committee members. For example, “the 20 sites proposed for the telehealth trial are not those that would benefit the State by aggregation of bandwidth” (WA government Contracts Manager). The focus reflected the different agendas of telecommunications, health services reflecting WADOH policy, and community health needs and was reflected in my field notes:
The focus is on what carriers can deliver not what our requirements are, ie delivery to remote areas which are not cost effective not going ahead. I can understand TIWG/CRG importance of aggregation, but it has removed community from the process. Where is the equity”.

The State government Office of Information and Communication (OIC) and WADOH remained in dispute over project deliverables during the planning process, as indicated by documentation from government meetings. For example, while the whole of government procurement process for telecommunications (STEP) acknowledged the goal of “achievement of significant community benefits” (Western Australia. OIC, 1999, p.5), actual practice was found to show that the Telehealth Project was about community access and equity, while the STEP process was about providing telecommunications services only to government departments. Analysis of data from numerous government meetings found the debate to be framed within the following issues:

- Government regulations, such as legal agreements with telecommunications providers.
- How to fulfil the government requirement of a cost benefit analysis and business case for this project.
- Social and regional benefits, and the impact on regional policy.
- Impact of telecommunications versus impact of telehealth.
- Evidence of evaluated telehealth applications versus health outcomes.
- Evidence of evaluated technology.
- Who will be managing change.
- Influence of technology on health service delivery.

Establishing the scope of the Telehealth Project was found to be difficult. Consensus was achieved quickly between the Telehealth Steering Committee and the Critical Reference Group in determining the broad parameters of the Telehealth Project, the number of people to be involved, the time period, the sites to be included, the extent of their participation and the level of support for the research team. However, field notes show that the Telecommunications Infrastructure Working Group (TIWG) did not agree, and wanted a much larger study and
implementation within a much shorter time frame. Correspondence from the then Commissioner of Health to the Chair of the TIWG highlighted the Federal government requirements and indicated that additional sites would not be included with WADOH funds.

During this time, debate continued about the scope of telecommunications services. For example, mobile telephony had been identified as a specific requirement to address the major health issue of time delays in attending traumas and receiving assistance in rural and remote areas, and in supporting other state government departments, such as police services. However, members of the TIWG failed to reach agreement on the scope of services to be provided, which further stalled the project. The State Government Cabinet ministry then directed the state government funding for the telehealth project to be spent on the whole of state telecommunications initiative, not just health. This delayed the development of the health initiative, as the planning process for the Telehealth project slowed down awaiting a decision on the actual funding for the project. Further, while TIWG managers stated that the expectations of the community became unrealistic about the level and timing of the project; WADOH senior managers were found to be concerned that “we continue to be concerned with the technical focus of the project”.

**Site Identification**

The way sites were identified for the Project was found to be erratic. A number of different perspectives were put forward by WADOH Telehealth Project, Critical Reference Group members and the Telecommunications Infrastructure Working Group, as to how the sites were identified. These were:

- Medical priority – preconceived notion that doctors needed telecommunications in the site. This perspective was found to be based on personal opinion, and consultation between a WADOH staff member and one medical practitioner only.

- Self selection by communities – asking sites if they wished to be involved.

- Requirement to meet site characteristics - such as being a network of communities within one Health Service area (Sites A, B and C); and the type of
health facilities available to the community. These were; no health facilities (Site A); minimal health facilities or small district hospital (Site B); larger district hospital or small regional hospital (Site C); and large regional hospital (Site D).

- Meeting a request for an intraregional model – proposed by members in rural and remote areas.

Influences on how sites were selected were also found to be political in nature. For example, a state government election was coming up and the sites which were identified as voter marginal were considered for inclusion in the project; and senior health management positions were due for renewal and existing position holders wanted to be seen as successful. Site selection was also influenced by people positioning themselves for personal gain or power, pressure to just go out and deliver outcomes, or a very short timeline to justify how sites were chosen.

Selection of sites for inclusion in the Project was found to be a major concern for rural and remote area participants. This was evidenced when the Commonwealth government released a media statement announcing the success of the telehealth project funding application and naming the first twenty sites, however, they did not inform the state government their departments would be doing this. Subsequently there was angry communication from community leaders whose towns were not on the list. All expressed concern about not receiving “improved telecommunications”.

Coursivanos and Martin (2005), who analysed methodological approaches to the study of sustainable policies with small towns, reinforced the importance of a plausible explanation for site selection.

**Representativeness Of Stakeholders, Participants And Key People**

A major issue found in the study was who should actually represent the sites identified for the project, and what level of involvement community members should have. This was most evident during initial discussions between government staff to plan for the project, identify stakeholders and to define committee representation. It later became an issue when identifying the key person/s at each site and community members to participate in the project.
All initial meetings discussing the Telehealth Project were found to be available by invitation only, and only attended by public servants representing the two main state government departments managing health and telecommunications. No consumer representatives were present. At these meetings telehealth stakeholders in their views were rated in order of priority to be:

1. The West Australian State Government, Minister Of Health, deputy premier, Department of Treasury, WADOH, Department of Commerce and Trade’s Office of Information and Communication, Metropolitan and Rural Health Service Boards, Commonwealth government and its Project funding body, telecommunication carriers and suppliers.

2. Local community groups, consumer health forum, Australian Medical Association.

3. Specialist colleges of medicine, rural doctors.


A debate developed at a project meeting as to whether community members should be considered primary stakeholders at all. Different opinions included:

“procedural justice is important. Outcomes are irrelevant if the town doesn’t perceive the process as being just”.

“Should each community have an equal rating with those who have the power to veto it?” and;

“Rating should reflect shareholders capacity to influence the outcome of telehealth”.

Consensus was reached and stakeholders were defined broadly as patients, health professionals, community members and politicians.

Committee representation was also found to be problematic. A request from a senior WADOH committee member was made for greater consumer representation on the CRG committee for example. However, the request was for “one that is more articulate, like the health consumer council, not a normal community member”. Consequently, the group consisted of four WADOH (Telehealth) members, two business consultants, an Indigenous representative, a member of the WA Health Consumers Council, two rural and remote area community members, two rural and remote area health representatives, and one representing seniors’ interests.
Other issues of priority involvement in the project were also observed at a meeting with management staff from different teaching hospitals in Perth. A clear agenda was established to promote one metropolitan teaching hospital over another. Subsequent meetings with government groups involved in services to rural and remote WA identified the need for co-location of government services to reduce duplication of services, and minimise opportunities for control of funds and resources by one person.

The identification of main stakeholders was generally influenced by professional elitism by members of WADOH management, and a medical model of health service delivery that promotes a top down approach to decision making. During project evaluation interviews, WADOH staff of the Telehealth Project and members of the Critical Reference Group stated that initially the stakeholders were identified and prioritised according to their seniority in the health system, and most were city based. They were then identified by personal opinion such as “that doctors know best about health in communities”.

The major issues identified encompassed the regional-metropolitan debate. Issues included regional health services versus those established by WADOH head office. Other decisions based on the assumption that regional health services know their area best; WADOH had a top-down approach about what should be done, rather than asking people how they see it working; technology was also found to be driving demand, reflected in a statement by a senior WADOH manager that they should “give them the equipment, then walk out”.

**Identifying key people:**

The stakeholders, key people and community participants considered most relevant to Telehealth Project planning were shown to be:

- local community groups and individuals
- consumer health representatives
- rural health professionals
- health professionals providing services to rural and remote areas
- regional representatives
- representatives from education, police, and justice departments
- Telehealth Steering Committee.
- State government political representatives (e.g. State Premier)
State government representatives from treasury
Commonwealth government funding group (RTIF)
West Australian Department Of Health
Department of Commerce and Trade (OIC)
Rural Health Service Boards
Telecommunication carriers and suppliers.

The choice of key people from each site to participate in the Telehealth Project also became a major issue influencing the data collection process. In all Sites, personal agendas and opinions affected discussions relating to which community members would participate in stage two of the Telehealth Project.

Extensive discussions took place at CRG meetings as to who would be the key person at the site with no health facility (Site A). My field notes indicate that these discussions predominantly reflected the personal agendas of committee members rather than being informed by the literature or community requirements. A member of the shire council was identified to be the key person in Site A. The shire councillor indicated that the best method for informing the shire population and surrounding farmers about the project and to obtain expressions of interest to participate was to hold an information evening. This was arranged by the Shire and advertised in the local newspaper and approximately sixty people attended. The participants at Site A were identified as Shire council members, the visiting medical practitioner, and representatives from the Telecentre, district health service and district High School. No cultural groups or community groups were identified. The majority of the community representations were by people already in a leadership role within the community.

Whilst Site B was significantly represented by those holding leadership roles within the region, unlike Site A, other community members were offered an opportunity to participate. The key person at Site B was initially identified through discussions with the shire council. The key person had contacts in most groups within the Site through their involvement in local politics and a significant family history within the district. The participants at Site B were identified as interested community members, Telecentre staff, a visiting medical practitioner, nurse practitioner, community youth representatives and members of the district school.
The key persons at Site C were found to be biased toward health professionals, as they identified mostly health staff as project participants, and very few community members. While Site C is the WADOH defined centre of the health region, and initial entry into the site was through the regional health office, demographic data identified the site as having a large district population comprising many cultural groups and varieties of services. While the two key persons were raised in the area and held positions in the health service and had very good local knowledge and contacts, both were found to be unrepresentative of their whole community. During interviews with the two key persons, neither identified any non-health participants, therefore Project staff approached a member of the local government to assist in identifying additional participants. During discussions at Site C a lack of understanding of the community’s role in the project was expressed by one of the key people: “Why does community access matter? I can understand with smaller communities, but [Site C] priorities are clinical”. Field notes indicate that the two key people at Site C were very cynical about what they considered to be non-clinical applications. For example, they accepted education for health staff, but didn’t see the point of discussing education needs with the wider community. Importantly, the key persons at Site C also identified defined local activities as separate to regional activities. However, they did emphasise the impact Site C has on smaller sites in the health region, such as for clinical, education and staffing support. Clearly, there was little understanding evident of the broader definition of health, beyond clinical issues.

It was also found that key persons at Sites B, C and D felt that their personal credibility was on the line if the project was unsuccessful. For example, the female key person at Site C had been involved in discussions about telecommunications and health with previous WADOH staff, had been involved in promoting the Telehealth Project to her community in the past, and had a very high expectation of what could be delivered. The key person at Site C was very aware of the need for realistic and practical applications and the need to “manage the rural expectations to reflect this”.

The choice of key person at Site D also significantly influenced the data collection process. As a major regional centre, comprising a regional hospital and district health service, Site D was the largest of the sites for this study. The key person at Site D was a senior health manager, with comprehensive background in
remote and rural health. While he had a very good understanding of the difference between the social determinants of health and medical applications, the key person suggested that very few community groups participate. The majority of community groups were identified by myself during analysis of Site data and information gathered during stakeholder group interviews.

**Disputes Over Project Deliverables**

A major finding was the plan for the development of a working model to successfully meet health service needs. The plan described an appropriate "working model that reflects the health needs in the area" (CRG committee member), that is sustainable, incorporates long term planning, and has needs that are outcome focused. Field notes show all members of the CRG and TSC agreed to these components of the model. However, for telehealth providers and health professionals at Site C and D, operational management issues surrounding implementation of the Telehealth Project were thoughtfully debated, and included the following issues:

- How are links to metropolitan service providers to be arranged?
- How will they be paid?
- Who will manage the equipment on a day-to-day basis?
- How are lay people to use the equipment?
- Will sphere of influence regional health service has over smaller sites in the region to change patterns of practice?

Attempting to address the needs and interests of multiple government departments was, in fact, contentious to the planning process for the Telehealth Project. The expectation of industry and government was for improved telecommunications for multiple government departments, including health, to:

"introduce a telecommunications network to meet telehealth requirements of the WADOH, in line with whole-of-government Telecommunications Strategy for other government agencies ....... and interface with health applications and equipment and the business case for Telehealth" (West Australia OIC, 1999, p.4).
Clearly, in their view, the delivery of improved telecommunications services was expected to address the needs of other government departments, particularly for education, justice and police. A priority for the government telecommunications’ planners was to ensure that there was not a “loss of agency bargaining power by diluting the acquisition process for individual agencies” (West Australia OIC, 1999, p.8). Findings from numerous government meetings suggested that planning for telecommunications was overly bureaucratic, and embedded in issues of power and control, which may have precluded consensus among those responsible for implementing the Telehealth Project.

Within the telecommunications context, a predominant finding was that the planning process was out of balance. For example, interview data with WADOH staff of the Telehealth Project and members of the Critical Reference Group revealed a large disparity between the need of WADOH for a health service delivery driven process, and the politically directed move to a state-wide project with an emphasis on telecommunications.

While telecommunications was a business priority for the State government of Western Australia, the government link to the telecommunications industry was often in a conflict of interest. For example, a remote area community member and senior health manager at Sites A and C, reported that government employees and telecommunications consultants were attempting to close debate by promoting one technology/telecommunications solution over another. This was found to be in direct conflict with government legal processes, as it had been stated by the Chief Executive Officers of both WADOH and C&T (incorporating the OIC) before the project began;

“Government legal processes must be followed, therefore ..... the proposition of just one telecommunications solution is not viable”. “The government cannot legally allow you to go to the market place and seek a single solution (for telecommunications)”.

A number of factors were found to have influenced what participants expected from the design of the project plan. These are summarised in Figure 4.1.
UNDERSTANDINGS

Community, government and industry understandings showed divergence, and affected the process and outcomes of planning. Analysis of the findings exposed the dilemmas and disjunctures that arise when centrally controlled planning processes seek to include state, regional and local interests. First, there were different perceptions of how collaboration impacted on government planning. Second, variability was seen in the capacity building potential of the project. Third, there were competing agendas to maintain power and control over the planning process and implementation. Fourth, there were different understandings of what constitutes health; and fifth, there were different priorities for improving the quality of clinical services to rural and remote areas.

Figure 4.1: Influences on differing expectations of the Project design
Community Participation In Planning

For participants in the study the concept of collaboration in planning showed varied understandings and levels of importance. During observation at planning meetings, a number of community members, industry representatives and government staff indicated the need for partnerships to be developed for success of the Telehealth project. This was summarised in the following statement by a health consumer advocate:

“You end up looking at a partnership arrangement with all key stakeholders – health providers, community members, community controlled and local government. The key to it working effectively is that the partnership arrangement must take place”.

For example, agreement was not reached on the need for community control of projects and processes as proposed by some Critical Reference Group members, nor the need to attend to the needs of the most marginalised community members. Also, the findings indicated that many participants at Sites A, B C and D considered the telecommunications to be delivered as inadequate and not meeting their needs and expectations. As a local politician at Site D stated: “the bush has again missed out on something worthwhile”.

The greatest discrepancies were to be found in how community, government and industry understood community participation. At CRG meetings, members discussed the requirement for community needs to be identified, and the importance of identifying consumer groups; as one member stated: “At some point you have to say who are the consumers and how are you going to address each of those groups”. Analysis of CRG meeting transcripts found that representatives from community groups on the CRG identified the need to utilise local networks to find out how communities would best use the technology. The most efficient way to access community groups was identified as via local newspapers and radio.

“We can find existing communicators of information, like the local newspapers, the PR has to go through existing vehicles of communication in the community. I think this is important because it could allay and ease the resistance to change”.

“...we need to look at how the community actually accesses information rather than perhaps talking to stakeholders or having
There was unanimous agreement that a key person be identified at each Site to assist in identifying participants, and be a political entry point. Additional methods for identifying the community included: “Community consultation …. With the managers of the regional health service”. For successful consultation/participation CRG members identified the need to consider a number of structural and process issues as explained in their comments below:

“….. have to have a relationship to get on with implementation”.

“be sufficiently resourced and personnel required”.

“identify the critic. I think there’s pre-emptive problem solving as well, which is identifying the critics. You have to include the critics in the process, because that’s the only way you’ll get a balanced view”.

Consumer links to structural factors in government were also noted by the WADOH representative to have an effect on outcomes:

“If we’re alternating the way that providers operate, then consumer expectations need to be influenced. I mean, every stakeholder and every consumer has different ideas as to what access and facilitation means”.

“Telehealth has been talked about for some time within the Aboriginal community ……. How to do business with Aboriginal communities”.

Ultimately, consensus was reached at CRG meetings for a process of community consultation. This involved identifying key personnel and stakeholder groups, then identifying local health needs, gaps in health service delivery and how telehealth could meet that gap, and raising awareness of the services through public relations and marketing exercises. There was agreement found that the process needed to reflect the needs of individual users and consumer groups, as well as addressing regional/state issues, regional/local issues, and local management issues.

Overall, the expectation and understanding of the contribution rural and remote area participants were being asked to make to the telehealth planning process was not met. In general, survey respondents from the rural and remote areas
involved in the planning process understood that they were to contribute toward improving, enhancing or making health services more accessible in their regions; and to contribute to the body of knowledge surrounding the application of telehealth to rural and remote Western Australia. However a number of survey respondents were found to have a low expectation of the process due to previous experience with consultative process whereby the information provided was ignored. “I contributed to many similar consultations with minimal feedback and use of info provided, so I have a very low expectation of any outcomes now” (Community Health Nurse).

Analysis of survey data evaluating planning outcomes found that whilst one health service manager indicated that personal expectations were met, they stated that “…staff seemed to be excluded from the inner circle of decision making” by regional and central government management. Another indicated that whilst expectations were reasonably well met “over the last 12-18 months it seems that WADOH have been forcing upon (site) what uses telehealth will be used for, even if this is at odds with the (site) views”. Additional work was also produced for the local sites through the need to develop protocols and procedures for telehealth use.

Opportunities for input into the planning process were considered extensive and regular by regional health service management staff. However, rural and remote area community members and service providers considered opportunities offered to be minimal and only in the early stages of the planning process. Improvement was noted following the appointment of locally based coordinators, enabling “local ownership”.

Opportunity to provide feedback on findings from the initial consultation process was considered by survey respondents to be very good, and the findings were found to generally reflect the issues raised and the prior experience of respondents in the Site Implementation Plans. In contrast, minimal or no opportunity to feedback on the WADOH Telehealth Implementation Plan (TIP) was provided to community members or service providers. However, regional level health service management staff were provided with ample opportunities to feedback on the TIP through further meetings with central government staff.

Generally, survey respondents found that the WADOH Telehealth Implementation Plan did not address the issues raised during consultation, was unacceptable and was described by one rural health practitioner as “totally
inappropriate”, and neither met community needs, nor provided opportunity for all sections of the community to have input. “I had input, but listening to staff did not follow”. The Plan did not reflect recommended locations, types of equipment or links to external providers or intraregional sites, and included a strong medical focus and little community health application. One Telehealth Project member stated that “the remote applications and community uses aren’t being done. Only hospital/allied health related ones”, in response to the survey question on appropriateness of services outlined in the WADOH Telehealth Implementation Plan.

“By linking to the (intraregional) sites first this would have allowed people who have limited access to any medical consultation to have this opportunity thus reducing the problems associated with getting Aboriginal people to leave their homes for extended periods and overcoming travel problems especially in the wet season. Also this would have enabled the RANs (Remote Area Nurses) to have greater access to resources such as second opinions, education information etc. By linking to (metropolitan teaching hospital) the entire process became bogged down in lawyers and red tape. Even for education links everything had to be booked in writing one week in advance – given that workload demands frequently made it impossible to predict until the day, who could actually attend sessions – this did not work well”.

The rural health survey respondents believed the Telehealth Implementation Plan to be inappropriate, due to “little or no consultation with would be users”, and too far from an acceptable community site or cultural centre. The Plan “doesn’t meet community needs – decision are made externally by regional WADOH office”. “We need to get the regional centre(s) right first before we start taking the plan further; and this is way off at present”. “Telehealth agenda was being forced ...externally”.

Again, survey respondents at the senior health service management level had a contrasting view, noting the Site Implementation Plans addressed issues raised “very well” and “adequately ... for sites in hospitals or health centres”. Community respondents in one site noted that after the Plan was reviewed and adjusted “there is a far greater potential for use now that future sites are in more appropriate places and not in ‘political’ places”.

In summary, different understandings of the role of community, especially between rural and remote area participants, and those in decision making roles for government, were found to impact on achieving community defined outcomes. This was highlighted by one survey respondent who considered the impact of the
Telehealth Implementation Plan to be “very minimal ... because of the area in which WADOH told us telehealth would be used, rather than ‘using it’ in ways it could be useful to us!”; and another stated that “If all sites are in, it will not meet the needs of many community groups”.

**Understandings Of What Would Constitute Success**

Consensus was found between all participants interviewed and survey respondents that, in general, telehealth did offer the opportunity to provide increased, improved or alternative health services. Applications included in the Site Implementation Plans would assist in avoiding long trips for staff or clients, while still allowing “face to face” contact. It would also enable increased opportunities for staff education and professional support, administration, rehabilitation services, tertiary referrals, consultation with medical staff to and from the metropolitan area, increased access to speech pathology and diabetes education, and greater continuity of care. The applications would also reduce costs and time associated with the management members attending meetings, and “helps children lose less school time, saves costs to parents for fuel”.

“It is a fantastic means of spreading education to disadvantaged staff in smaller remote sites eg one day twelve nurses at (remote site) grouped/crowded around their computer based telepsych unit to watch and hear a visiting midwifery expert. It was the first time many of them had this type of education in years! And all reported favourably despite the limitations of the size of their screen”.

It was also found that improving community development opportunities through telecommunications was a priority area of interest for a number of WADOH staff and community representatives. These study participants identified the need to develop partnerships with other government departments and community groups, and saw the benefit of using technology as community development assets, for example, “...in developing an infrastructure to attract a GP (to rural areas)”

Community participants were clear in the expectation that telehealth and telecommunications services would ensure social benefits by providing access to opportunities for increasing social interaction between culturally or geographically isolated residents, and provide professional support. Interestingly, rural General
Practitioners in the two smaller sites saw the advantage in improving the work-life balance and opportunities for time off, whether for social or educational reasons.

One area of convergence of opinion between government and community participants was in the need for the Telehealth Project to meet the requirements within regions, not just within sites. This was framed succinctly in the words of one consumer representative: “if you conduct a proper consultation with the different groups, you can actually bring out a lot of these local level, intra- and inter-regional issues”. For example, it was agreed by the CRG that intra regional issues should be addressed during the initial consultation phase with stakeholders and community participants. However, the CRG identified that managing the demands from within the region was not part of the project scope, and therefore any identified intra-regional demands would only be documented and not actioned. However, it was found that all sites expected the project to address its significant intra-regional demands.

For example, at Site C a number of strategies were identified to address the intraregional issue of improving services to outlying areas. These included using local nurses or carers as physiotherapy assistant, and linking to other towns in the district via videoconference for perinatal classes. Issues including the limited access to clinical psychologists, and to a specialist Paediatrician for autism assessments, and the problem of “not enough PATS [Patient Assistance Travel Scheme] for specialists to visit” could be addressed with the use of technology applications.

**Competing Planning Agendas**

The analysis of government planning meetings, interviews with government staff and community consultations found competing interests in project planning. These are categorised into the following sub-themes: financial considerations, over emphasising technology, and communication / managing relationships.

It was found that State government staff and representatives from the telecommunications industry aimed to gain competitive advantage to meet personal agendas, maintain control of funds and promote personal power. Analysis of findings from project meetings provided alternate priorities for planning, predominantly revolving around regional and community issues. These competing
Subsequent meetings identified additional structural and process factors that would influence the outcome of the Telehealth Project. Many of these are overlapping, that is, structural considerations (the source of telecommunications, regional needs etc.) affected processes and vice versa. These are addressed in the section to follow.

Financial Considerations

Government priorities and business allegiances dominated discussions during planning for the Telehealth Project, particularly relating to the area of funding. The findings indicated a conflict between WADOH and OIC over control, management and use of the Project funding. For example, a senior OIC member stated that “they can use the [state and commonwealth funds] to get more done, therefore they will do an additional ten sites with this money”. However, no documentation was supplied to substantiate that more could be done. No indication was given as to what additional funds the other government departments would contribute. It was also stated that “some of the [state funds] can be put to other government agencies for their projects”. However, the project had a scope bound by the Commonwealth government agreement, therefore Project managers were duty bound to use funds appropriately. My field notes show a decision that if the Telecommunications Infrastructure Working Group (TIWG) deemed there to be a more effective use of funds, then this could be put to the Commonwealth government body funding the WADOH Telehealth Project. This led to debate among the Telehealth Steering Committee on the best way to expedite the community agenda given the constraints of government and business. A decision was reached by the TIWG that the Commonwealth funding would remain with the Telehealth Project, but “the matched State government funding would be managed by the Statelink Management Committee”, a committee focused solely on the management of telecommunications in the state.

The debate about the expenditure of funds was evidenced in the minutes of TIWG meetings showing that OIC needed to spend funds by the end of the financial
year, and the view was that it should be on equipment for the telehealth project even though planning had not progressed sufficiently to decide on the equipment required. My field notes of the meetings reflected my view, as a health professional, that this was not an appropriate use of funds, and may not meet the requirements of the stakeholders. For example, field notes of phone calls from two community members indicated that an OIC representative had promised equipment to a number of communities by the end of the financial year (including some sites not in the project scope).

Disputes about technology and its pricing continued throughout planning for the Telehealth Project. These were primarily around the tensions between needing to deliver clinically sound and legally defendable images that would require a bandwidth of 384kbps, and needing and simply ensuring telecommunications coverage to the rural sites, even if this was substandard. The health requirements and the telecommunications requirements were a source of conflict between consultants and Telehealth Project staff. My field notes indicate that the Health agenda for telecommunications requirements (which included the needs of clinicians and community members) was being disregarded by the business consultants brought in by OIC to map the state-wide telecommunications requirements. The consultants were asked to provide evidence to substantiate their position, and refused this request. Subsequently, advertising for government procurement of telecommunications was approved without expert review by each government agency. As two senior government managers indicated “the business consultants are effectively the ones responding [to the tender] ……… the business case should be based on the requirements, not on a bureaucratic decision of what is viable”.

The dispute also included the relatively strong views of community members surrounding the standard of telecommunications to the sites within the Telehealth Project. A community member asked “why should rural and remote areas continue to have less than the metropolitan areas, when the funds are available to provide and equitable solution?”, and another asking whether clinical applications at 128kb/s would be a valid and legally defendable delivery method. A memo in my field notes reads “ambush”, referring to the threatening manner in which I was treated when invited to meet with the new consultants. It was actually a meeting where the public
servants involved in the TIWG declared that they have a better overall understanding of the situation, and continued to dispute the health requirements.

At CRG meetings there was significant debate surrounding the opportunity for entrepreneurs to gain financially from the Telehealth Project, and this was outlined in two statements by committee members: “There are plenty of people out there who’d like to grab the market in rural areas and would like to isolate it”.

“We’re finding that one of the issues is that there are GPs who will not do this without money being attached to it. This is a big problem, the GPs and the entrepreneurs that are out there are the big two. You can’t just ignore them because they’re part of the increasing technological element”.

Competing Conceptions Of Technology

In contrast to the community partnership ethos, a model where technology determines need was discussed extensively, and highlighted by two members of the CRG:

“The idea is to get one system running to everyone’s satisfaction and then we can roll out other units. We can determine what kinds of issues we’re going to have to work with and what sort of skills we require……..it’s extremely difficult for me to identify a measurable outcome just by talking to people”.

“What will happen is the technology will reveal the most appropriate way it can be used”.

However, another CRG member identified this as removing the human factor from evaluations and assuming technology has a life of its own. This scenario presupposes that all communities are alike, and one technology applications fits all. The premise was one of community control “With the equipment you can control what you’ve got in the community, but the people factor is potentially very diverse and less controllable”. Technology was also identified by a CRG committee member as a medium for communication between groups: “We’re dealing with relationships and rapport and faith, and the technology is the medium for that rapport and faith to be exchanged”
Communication And Managing Relationships

The lines of communication between community and central government departments during all phases of the planning process were considered by survey respondents to be both transparent and ad-hoc. In general, respondents determined that central government listened to regional medical and health management, whilst communication with the community was better facilitated with a locally based regional coordinator.

“Probably ok, but they never appear to act on suggestions from community. I guess it’s just too hard for them. Becoming very cynical about planning processes, much talk and lip service paid to working in the community setting but the money never goes where their mouth is and it all ends up at the central medical orientated centres and never in the community. This appears to be happening again.”

Communications lines within WADOH in the early planning phases of the Telehealth project were not clear and open. Historical documentation relating to WADOH and telehealth was limited, with gaps in information about prior discussions with rural health services making planning difficult. Lines of communication were interrupted by distrust between WADOH project staff and OIC - between project staff and one project member aligning themselves with OIC, influencing cooperation in the planning process. Restricted information access from the state wide telecommunications group also impaired planning progress.

This study found that favourable relationships between staff were guided by senior managers with open lines of communication with staff. For example, Site D was the largest of the four Sites within this study, comprising a large regional health base, a large indigenous population and a large number of mining industries with accompanying support staff. I had assumed that it would be a problematic area to gain access. However, while my field notes and interview transcripts show a diverse population and immense geographic area, they also indicate a favourable response to being involved. Field notes indicate that much of the positive reception was guided by a regional health manager who recognised the potential opportunities from using telehealth technology to improve clinical and community health outcomes throughout the region, not just within site D.
Power And Control Issues

The issues of power and control were found to significantly influence the planning process and its outcomes. In general, the Telehealth Project reflected a centrally driven process. While the Site Implementation Plans focused on the users of telecommunications by planning with local people for their needs, interests and expectations, it was found that a number of community representatives and their advocates were not provided an opportunity to have input into planning for the Telehealth Project. Participants reported decreasing community involvement as the planning process progressed. Planning input was predominantly derived from the regional health services and through local management committees, which focused on health service providers within hospital networks.

Similarly, the Telehealth Implementation Plan was described by a number of community survey respondents as having a medical focus that offered only increased access to medical services. The strategies included in the TIP would not meet the needs of “many pastoralists, and non Aboriginal, and aboriginal communities would not have access”. One regional health service manager contradicted the findings of the TIP stating that the results from the SIPs were in fact the correct ones, and stated:

“..the Health Department had absolutely no understanding whatsoever about community consultation. It goes out and tells people this is what you are going to do, and most people do not have the opportunity to disagree”.

WADOH central management contradicted the findings from the community interviews, and clearly reflected the priorities of WADOH. The decision making process (recorded in my field notes) leading to government endorsement of the TIP reflected the problems associated with incorporating community, government and funding requirements. This was highlighted at the final meeting between Telehealth Project staff and WADOH management before the TIP was endorsed. At the meeting, a WADOH manager stated that they would “Remove a headache by doing something for the community in the broadest sense, by giving them a better health service” and that “hospitals have priority over the public”. The manager further stated that:
“Hospital management will decide who can have access. They will have custodianship of equipment. Public can pay hospital management.”

Local priorities were explained by a participant:

“But in some areas the hospital applications have not been identified as a priority. In [Site D] for example, there is a dire need for sexual assault staff, and domestic violence workers. This is a locally identified priority”.

However, the manager responded that:

“It has been decided by the bosses that the telehealth project will be in the hospitals. If then it is successful it will be expanded to community sites”.

At the meeting, one participant stated that “WADOH bosses had already decided where applications will be, irrelevant of the consultation undertaken at the sites”, and that “there will be no community applications”. The TIP was to go to the Telehealth Steering Committee for endorsement, then to the regional general managers only.

The Telehealth Implementation Plan was the report produced following review of the Telehealth Project Plan (TPP) by the Telehealth Steering Committee (TSC) and management staff from WADOH. While the TPP was a summary of actions from community, government and industry, the final Telehealth Implementation Plan was found to reflect the desire of government to maintain power and control over the project, and the lack of acceptance of community knowledge, expectations and needs. As one community participant concluded: “Regardless of my input the WADOH had a preconceived idea of what was needed ….. the real needs of the region were never taken into account”.

Additional themes arising from the various interviews were of nursing management control, project management, and competing perspectives of fairness, control and competition.

Nursing management control

Interestingly, the health professional group which purposefully limited access to participation by its members was nursing. In all sites, nurses were restricted in their access to information on the project, denied opportunities to input into planning
and evaluation, or directed not to comment. Therefore nursing management significantly influenced the data collected relating to nurses and acted in a gatekeeping role. For example, at site C, interviews took place with only two nursing managers who did not allow access to hospital nursing staff. Both were cynical of the Telehealth Project as they had been involved in previous WADOH discussions with no evident outcomes, and stated that “they knew what was best for their staff”. One rural nurse from near site C stated that regional health management had already suppressed her views and that she was “scared that I will get in trouble for responding. Have already been disciplined when I gave my opinion”.

Another example was at Site D where attendance at the community health focus group was limited due to the community health manager inviting select nursing staff only. Therefore allied health staff, Aboriginal health workers, social work, mental health, child health and environmental health staff were not invited to attend. The Telehealth Project staff were advised not to contact any of the staff not in attendance without going through the manager. The nursing staff in attendance appeared reluctant to speak, and field notes indicate that the staff did not speak candidly until the manager had left.

During telephone interviews, two nurses from sites A and B described telehealth as being out of their hands and controlled by the Regional Health Service, to the point that they were reluctant to respond to the survey in writing, and preferred to telephone their responses: “We don’t want our knuckles rapped if we respond,...it must remain totally confidential, we don’t want to put anything in writing”.

**Project management**

This study found that the requirement to meet the telecommunications needs of multiple government departments negatively impacted on the planning process and outcomes of the Project. WADOH staff of the Telehealth Project and members of the Critical Reference Group identified the battle between government departments over ownership of project as interfering with progress, and as one CRG member noted: “Projects need support at all levels by senior management to be successful”.

During interviews with WADOH staff of the Telehealth Project and members of the Critical Reference Group, agreement was reached that initially the
telecommunications companies had a lot of influence over the project as they had large vested financial interest. However, at a WADOH meeting it was stated by a senior manager that WADOH did not want telecommunications companies to have major control over the project, and their influence lessened, following a verbal directive from the Commissioner of Health. While the STEP committee took much of the planning away from telecommunications companies, my field notes recorded that planning with them continued through individual members of STEP committee, and was outside of the formal consultative process.

**Competing perspectives of fairness, control and competition**

Convergent and divergent opinions about the fairness of the planning process were found from survey results and interviews with community participants, and semi-structured evaluation interviews with WADOH staff of the Telehealth Project and members of the Critical Reference Group. Respondents provided firm examples of what they perceived to be the positives and negatives of the Project planning process. The positives to planning were process factors predominantly influenced by the Project Team. These included the use of an existing knowledge of needs, problems and gaps in health service delivery at each site; the good relationship building which took place with community members and metropolitan hospitals; active listening to community; and being focused on health, not telecommunications.

The perceived negative aspects of the Project planning process were clearly embedded in ownership of the Project, and the relationship between telecommunications and health. One senior health bureaucrat stated that original ownership of the telehealth plan was by one senior WADOH project manager who consulted infrequently with senior WADOH staff. The project vision was not shared by him and limited support was gained. Early project planning was fragmented and dominated by the development of a telecommunications network. The original WADOH manager put forward pre-conceived ideas, rather than “explaining the potential of telehealth” (Telehealth Project team member).

Subsequent project planning involved the Office of Information and Communication (OIC), but their view was found to be focused on telecommunications only. It was overly expansionist and members of the telecommunications planning area were unwilling to understand or accept WADOH needs. During an evaluation interview, one key government staff member stated that
OIC should have been a platform for other government departments to work from, rather than dictating outcomes and promoting a power struggle between state government departments. During evaluation interviews WADOH Project staff considered the consultations that took place during planning for the Telehealth Project to be about collaboration and participation. However, there was consensus that the planning process was unduly influenced by the following:

- Business protocols which prioritised health service over community needs. At interview, one WADOH Manager considered that it displayed a “naivety for dealing with business in the public process”.

- A planning model which was considered by a number of Telehealth Project team members to be “technology driven”.

- Issues surrounding telecommunications, where;

  “telecommunications seems to have .... become the major aspect of what was then called the telehealth project. ......a telecommunications project that was going to involve health, rather than a health project that would somehow link into telecommunications”.

- Time delays due to bureaucratic interference, leadership changes, and the need to incorporate state-wide telecommunications requirements.

- Differing individual interpretations of what defines telehealth and health.

- Power bases (individual and organisational) influencing process and outcomes “Self interest of own career, rather than benefits for the community”.

- Decreased feedback due to fluid chain of command.

- “Consultation was not wide enough”

- Intraregional model used in one health service.

- Directives from management to consult with health staff only.

- Political pressure to roll-out equipment.

- Rural health service senior staff often decided who was to be consulted, therefore some community groups missed out.

 Perspectives of fairness in the outcomes of planning were varied. The particularly positive focus was expressed by many survey respondents and
interviewees, and summarised by a WADOH staff member about the need of a regional General Manager who;

“has saved himself a 3 ½ hour drive on Mondays, which endangers his life ... now they have a 2 hour videoconference at a cost of $60, as opposed to 7 hours of the GMs time”.

Also, a junior allied health worker can get access to “professional support”.

However, for many survey respondents the outcomes of planning were not fair. Examples of survey responses to the Telehealth Implementation Plan included:

“Management didn’t acknowledge community needs and expectations”.

“Senior STEP and WADOH officials wouldn’t accept findings of the needs analysis”.

“Intraregional expansion should have been a priority”; and

“Raising community expectations, then not delivering, then distributing blame to the communities when outcomes were not accepted”.

Another example of unfair planning outcomes was for the management of clinical services at rural Emergency Departments. The metropolitan tertiary level hospital departments and rural doctors clearly indicated that they were understaffed and under resourced to manage consultations via videoconference and therefore they did not want equipment placed in their departments. However, WADOH management wanted emergency services, subsequently “the outcomes from the consultation process were largely ignored and other ideas are implemented”.
Understandings Of What Constitutes Health

A clear influence on Project planning was found to be participants’ different understandings of what constitutes health. These are discussed within the following sub-themes: Disparate understandings of health, social understandings of health, mental health, domestic violence, and family links.

Disparate understandings of health

A major study finding was the relationship between participants’ understanding of health and their related needs, expectations and interests. It was found that participants’ definition of health had a major influence on planning outcomes and health service delivery. For example, a member of the Critical Reference Group suggested that for the project to be acceptable to health managers it...
should have been scoped to be for clinical services in hospitals only, then later expanded to include broader access. This was highlighted in statements by two Telehealth Project staff members at evaluation interviews:

“I am not sure that people in the health department have a good understanding or grounding in concepts such as primary health care or even community health or even allied health or anything that happens outside the hospital”.

“I think to some extent that they (management) are having problems working out how domestic violence will relate to health services”.

Another example of how disparate understandings of health can affect planning outcomes was found at the final meeting between Telehealth Project staff and WADOH management before the TIP was endorsed. A transcript of the meeting revealed a Telehealth Project team member asked what the Project manager meant “by community, and by health”. The manager response was: “I can’t define community, health or clinical. The General Manager of each region will decide”. After further prompting by the team member, the manager defined community as;

“the public, anyone not involved with the hospital. Bird watching groups shouldn’t get priority over the hospital”.

The Telehealth team member again reinforced the issue that “there are many health applications outside the hospital. Community health centres are not located with hospitals”. However, the manager responded by stating:

“Yes, then community is anyone not involved with health service delivery. The first telehealth applications will need to be clinical, therefore at the hospital”.

This study found that most doctors identified the benefit of telehealth technologies to regional health services and communities, and did not identify many hospital based services. It was found that dominance of medical practitioners in the project was limited to individuals pushing a view point reflecting a medical model and did not reflect the majority of medical study participants. For example, during CRG meetings one medical practitioner expressed the opinion that “doctors don’t want to talk to other professions. They don’t want to talk to nurses or radiographers”. This was supported by only one other medical doctor involved in Telehealth Project planning. The issue of medical dominance over the Project again
arose when a Project team member stated that “doctors should be the first entry point” for technology use. Interestingly, another CRG member stated that people had the right to choose another medical practitioner, in another location, if technology provided that opportunity, reinforcing the concerns of a rural politician as to the effect new technology will have on the viability of locally based medical services.

Significantly, dominance by metropolitan medical staff over rural medical staff also became an issue when determining referral sites. While statistics clearly revealed that one metropolitan teaching hospital was responsible for the majority of rural transfers and patient management advice to rural and remote Western Australia, field notes from interviews with medical management recorded the fact that another metropolitan teaching hospital wanted to change referral patterns to their hospital, irrespective of what the rural sites wished for.

My field notes indicate that a health manager recommended that the health activities for regions should be clearly delineated from hospital activities. The manager stated that other sites in region should not have been chosen, and the choice was politically motivated. Findings from Site C health staff and community members presented previously in this section, clearly contradict this and do not concur with the manager’s argument:

“Why does community access matter? I can understand smaller communities, but [Site C] priorities are clinical. Is it really important if some women can’t swap recipes using videoconferencing”.

At interview, a rural politician like the health managers at Site C, did “not understand the need for social health/community applications”. Clearly, there was a sense of dismissing any non-‘medical’ issues. As the above quote indicates, this was at times, facetious and elitist.

Social understandings of health

Some very clear expectations emerged from sites A and B relating to social applications of health strategies. Both sites enthusiastically embraced the concept of health from a social perspective, recognising additional applications which they
would not have considered when viewing health from a medical model. These included increased employment opportunities by using technology to access job information and interviews for community members without having to travel. Other applications included farming information such as weather forecasting, pricing through internet of grain and stock, farm advice and financial counselling, and access to legal information and services via the internet and videoconferencing. Other social applications of health were found to be opportunities for new mother’s groups to meet via technology, and opportunities for sports organisations to access medical information for trainers and coaching advice.

In all sites, an understanding of community education influencing health was found. In the smaller two sites, this was predominantly for health information for community members, professional education for school staff, health education for school children (particularly sex education), secondary education such as access to years 11 and 12 at home, and access to pre-vocational and university courses. A nurse at Site A identified additional community education opportunities to be asthma, arthritis, and diabetes education, which was concurred with participants in all other sites.

Understandings of health in focus group interviews were also found to embrace support services for isolated individuals by enabling access to support networks. Participants at all sites identified the use of technology as increasing the opportunity for community education by saving travel costs and time, especially intraregional, so patients and carers could participate in support groups “even though numbers may be small at each location”. There was also found was the needs to support new migrants, particularly women who arrived in a site to marry;’ and the need for improved access to interpretive and legal services was a clear priority for community and health staff at sites B, C and D. While there were clearly different dimensions of participants’ understandings of a social model of health, participants, regardless of gender, considered access to men’s health information as vitally important for their sites. Another example found was the Nursing Mothers Association in Site D. This volunteer group supported new mothers in four regions of Western Australia via the telephone or face to face consultations. A clear need was identified for immediate advice or support, links to and from other sites in the region, and access to professional meetings.
Mental health services

Participants in the two larger health services with hospitals, as well as those in the two smaller sites, identified mental health as a priority category for the use of technology to ensure quality outcomes. It was found at all sites that:

- There was limited access to hospital and community based mental health services.
- Health professionals often felt inadequate about the way they had dealt with a mental health situation.
- Community participants had concerns surrounding travel, financial and confidentiality issues, as one community member stated:

  “to get someone to care, because we didn’t have anywhere to go”. “who would look after the farm if I left to drive to the city?” “and if it’s not that bad enough, everyone will know your business if you go to the local hospital”.

Importantly, at Sites A and B, mental health issues were expanded to include social health issues such as the need for retirement information and advice, and financial counselling, as well as the mainstream areas of domestic violence and relationship counselling. Counselling for trauma debriefing was identified by the ambulance service volunteers as an unmet need for staff and community members. While counselling services were available at Site C, a local health professional stated that “family counselling is arranged by Silver Chain but people have to travel to another town to get it”. Therefore on site family counselling was found to be a priority by community health staff and community members. Similarly, a visiting financial counsellor was available at Site C but did not have adequate time to see everyone.

All participants agreed that major change was required to mental health services in their sites, and expected telehealth and telecommunications to assist with this. Expected changes were found to be:

- Improved and increased access to psychiatric services
  - Patient management advice and second opinion
- Regular and more frequent access to mental health services in the metropolitan areas
- Management of emergency illness and difficult patients
- Link to one metropolitan team for assistance with emergencies, difficult patients, forward bookings and assessments
- Assistance with discharge planning
- Link to specialist nurses or doctors for psychogeriatrics, thereby carers do not fracture link from home; as one rural health practitioner stated: “travel to Perth compounds mental health problems”; and “it’s expensive for families to travel”.

- Access to additional professional support
  - Case conferences
  - Management of outliers. “There are not enough staff to visit smaller sites where there is no critical mass of clients. Too much time would be spent driving to these outlying areas”.
- Management of transfers
- Professional education opportunities, such as, regular skills updates, crisis avoidance, to address the problem that rural “hospital staff are inadequately skilled” (rural health practitioner, Site D).

- Reduced patient travel and away from family
- Improved community education

The factors influencing access to mental health services as described by the participants are summarised in Figure 4.3.
Domestic violence services

In all sites, services to address domestic violence were found to be grossly inadequate or non–existent, and participants expected the Telehealth Project to assist with the needed improvements as a priority application. The expectations encompassed issues of access to services for clients and staff, such as:

- Improved services for clients including access to victim support measures and counselling, domestic violence perpetrator counselling, relationship counselling, and family counselling.

- Professional support issues included access to liaison opportunities with domestic violence workers, Sexual Assault Referral Centre for patient management advice, case conferences, and professional meetings.

- Financial and social costs of travel to access services.

In contrast, whilst WADOH management staff acknowledged the high level of interest in domestic violence services for rural and remote areas, it was described as a “non-health application” by a senior metropolitan based manager, and therefore not considered to be a priority need for the Telehealth Project, and subsequently...
removed from the Telehealth Implementation Plan. The influences on domestic violence services as described by the participants are summarised in Figure 4.4.

**Figure 4.4: Influences on domestic violence services**

<table>
<thead>
<tr>
<th>Availability of services</th>
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<tbody>
<tr>
<td>Distance to travel to access or deliver services</td>
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<tr>
<td>Financial cost to access services</td>
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<tr>
<td>Level of confidentiality</td>
</tr>
<tr>
<td>Type of locally available services</td>
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<tr>
<td>Level of priority given by management</td>
</tr>
<tr>
<td>Access to professional support</td>
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<tr>
<td>Staff feelings of inadequacy</td>
</tr>
</tbody>
</table>

**Meeting family needs**

Maintaining links to family and friends was found to be a priority for rural and remote area participants in all project sites. Links were severed due to the need to access clinical procedures in a metropolitan setting, attend a regional or city school, or access obstetric care (a requirement that at 36 weeks gestation women have to travel for obstetric appointments). Both community participants and health professionals found the severing of family links impacted negatively from a social and financial perspective, in that it was costly and involved time away from family. Participants identified solutions such as opportunities for husbands to be involved in perinatal care through the use of video technology. As in all sites, the need for access to family conferences involving multiple sites was highlighted, as well as patient education, carer support, and to reduce isolation felt by carers of the elderly and health professionals in remote parts of the region.
Addressing Gaps In Service

All sites in the study expected the implementation of telehealth technologies and telecommunications to enhance existing clinical services and assist in acquiring new services, thereby improving outcomes. However, in defining the structures and processes to improve outcomes, there were significant differences of opinion between community members and health professionals. Analysis of data from in-depth interviews and focus groups found that, for community members, the process meant improved access to regular visiting clinical services, especially for those living a long distance from a town centre. It also meant improved access to support groups, family link-ups to discuss issues, and access to interpreter services. For all health professionals, it was found that the technology meant a new link to reduce professional isolation. This would enable access to clinical case conferences with clinical staff that visit the rural and remote sites, and subsequently improve team work through the use of on-line meetings, case follow up, clinical consultations for second opinions, improved discharge planning and links to additional services, such as the Pain Clinic based in the metropolitan centre. Additionally, an increased opportunity to access specialist clinical information from medical and allied health specialists (occupational therapy, speech pathology, dietetics, physiotherapy and podiatry), and to monthly case presentations or grand rounds from metropolitan area were identified as ways of improving clinical services and practice.

While both health professionals and community members in all sites were given the same introductory information, the findings shown in this section indicated that community members readily adopted a social health paradigm, whereas health professionals predominantly considered telehealth from within a medical model of health. The sub-themes are: Solutions to ensure quality clinical practice, Professional education and training, and managing information and technology.

Solutions to ensure quality clinical practice

The clinical practice component of the data was found to be significantly influenced by the size of the health service available at each site. In the smaller sites,
with a visiting health professional or one nurse (A and B), there was significantly less data found on advanced clinical / medical applications. In these sites, clinical applications predominantly focused on enhancing professional support and attendance at department meetings. This lack of clinical support was found to be particularly relevant in the two smaller sites with consequences for the retention of Registered Nurses in the area. Participants with a working knowledge of the health system identified the need for access to information via clinical databases, and importantly for Sites A, B and C, to medical second opinions, emergency consultations and follow up consultations with psychiatrists.

Expectations, needs and interests relating to issues of hospital practice were predominantly presented at Site D, a larger health service with a regional hospital. While the health professionals who responded from Site D overwhelmingly identified the requirement for accessing professional support, it was in the form of medical grand rounds from major teaching hospitals in the city, specialist consultations, follow up assessment, pre-admission planning, early discharge follow-up, and assistance with complex cases. The transfer of medical results within the region was described as:

“Electronic transfer of information to remote areas, particularly, considering the movement of indigenous people through the region. Results are slow and often not received by the doctor caring for that patient.”

Site D was found to have numerous complex clinical cases and participants clearly identified themselves as inadequately prepared for these. For example, at the time of the study a metropolitan hospital discharged 13 adult and paediatric burns patients per year to the regional centre and an additional 32 within the region. Doctors, nurses and physiotherapists required assistance with advice on management and the acute transfer, and assistance from tertiary teaching hospital with acute burns assessment, follow up post discharge, and ongoing staff education and support. Another complex health issue in Site D and the surrounding region was identified to be renal disease. Site D provides renal dialysis but often required training for nursing and medical staff and support for renal equipment, additional medical consultations, educational and counselling support for renal nurses and patients, support and on-going management for renal dialysis patients, and links to other
community groups, and family support. The telehealth applications were seen to be a solution for many of these needs.

One of the biggest challenges that doctors in site D had to address was the complexity of medical requirements, with only limited specialist medical access available locally. For example, specialist oncology services were not available locally, and being able to provide patient support and pre-operative assessment locally, rather than travelling to city, would have better patient outcomes. The other main expectation for this group was to maintain costs. Interestingly, the concern from a senior doctor at Site D was with the “blow out in costs if Aboriginal Medical Service (AMS) had direct access specialist medical services, rather than going through the hospital”. One manager was concerned that site D doesn’t “change referral patterns at AMS. Currently specialist referrals come through the hospital, and its best that way”.

The need for assistance with specialist ophthalmology services was identified by medical staff at site D. While these were available at site D the majority of access was on a private patient basis, with subsequent long waiting lists. Public hospital services were mostly provided by junior doctors who required 24 hour assistance with acute trauma, retinal screening and corneal screening. Requirements would include a link to a tertiary hospital, digital camera, specialised equipment for retinal scans and slit lamp operation, and due to the diagnostic requirements, 384kbps bandwidth.

Medical practitioners also identified themselves as being under prepared to deliver other medical specialties such as dermatology, obstetrics and gynaecology, cardiology, orthopaedics, paediatrics, paediatric endocrinology, behavioural paediatrics, respiratory medicine, neonatal medicine. It was also found to be evident that the telehealth applications could assist with accessing specialist patient management advice or diagnostic assessment, second opinion, improved discharge planning, case conferences, enhanced follow up, links to and from region. The Royal Flying Doctor Service also identified many of the similar needs as well as electronic pathology results, and in-flight data and support.

All rurally based medical staff interviewed for the study felt significantly isolated from peers and clinical discussions available in the metropolitan area. They identified the need for access to medical case conferences, where peer review of
cases between specialists in tertiary teaching hospitals and local medical officers can be done, especially in neurology, ophthalmology and immunology. The medical staff also explained that many patients had to travel to the city for pre-admission planning. To reduce travel times and associated issues pre-admission clinics a number of doctors suggested that clinics could be conducted at the regional centre using local technology to access clinical support. Other areas of need were discharge planning between medical specialists and nurses in tertiary teaching hospitals for trauma follow up, orthopaedic early discharge, and cardiac surgery follow up.

Staff providing radiology services to Site D identified requirements similar to those outlined for the medical specialties, as well as, diagnostic assessment by adult, obstetric and paediatric teaching hospitals when the radiologist is not available; decreased time delay in receiving films from within the regional area and for films sent for a second opinion; and improvement and upgrade to the existing radiology information management system. Ultrasound was also identified as a need, particularly for diagnostic assessment and second opinion in paediatric and obstetric cases.

“The radiologist is on site 4 days per week. For the one day per week there may be a need for urgent reports. At the moment they are sent to the metropolitan site, or the patient is transferred to Perth. Films sent by courier mean a time delay of at least one day. Could be improved especially for urgent cases. There is also a high incidence of patients absconding whilst waiting for results or not returning. Ultrasound .... second opinion time delay of at least 2 days”.

Occupational Health and Safety nurses expressed the concern that they always felt accountable for all care provided to their workforce, while also feeling powerless. They explained that there was often delayed secondary management by General Practitioners at Site D causing further problems with patient management at the work place. Poor continuity of management, especially once transferred to the city, and inadequate discharge summaries, further compounded the problem for the nurses. “Very little information is carried through and the men often fall through the gaps”. The nurses felt ultimately accountable for the private care required, that which was attained, and the missed working days that were rigidly documented by their employers.
At all Sites it was found that health services for the aged involved a variety of health professionals, and all identified the same needs: to lessen the distance to travel to meet with clients, improve family link ups, and improve access to Guardianship Board assessments and disabilities services information for staff dealing with the elderly. For example, Site D has a significant number of elderly indigenous people, and a smaller non-indigenous aged population. During focus group interviews, services were found to predominantly be regional such as the visiting Aged Care Assessment Team (ACAT) that undertakes assessments of the elderly within the region. Members of that team identified the need for assistance by a geriatrician for the management of complex cases, and with patients in remote sites for “improved remote assessment capability”. Aged care workers in the region also saw a need for assistance with patient assessments outside of normal clinic times and to obtain second opinions with medical practitioners.

The requirement for access to rehabilitation engineering was found at Site D. At the time of the study, 36 patients from Site D region needed twice yearly review, which required travel to the city at a distance of 1,750 kilometres.

Allied health staff and Community Health nurses both identified the “large amount of time wasted on travel to see maybe one client in one day”. While allied health staff saw the introduction of new technologies as a way of increasing services, a diabetes educator was concerned that “they have enough to do without adding more”.

The need for community services and education had a significant impact on staffing workloads and was identified by both Registered Nurses and community members in Site C. It was considered by a large number of participants that better access to internet and videoconferencing would access opportunities to undertake first aid training, weight watchers, men’s health, sexual health information, as well as links to support groups such as Alzheimer’s, nursing mothers, and support for the terminally ill.

The community health staff at all Sites reinforced the issue of professional isolation and the subsequent need for links to specialist services and advice outside the region, as well as links to outlying nurses situated within the region. The opportunity to transfer data and link within region, particularly public health data for
indigenous population who travel regularly between communities within the region was considered a priority.

“Take (remote community) for example, we’ve got a full time (indigenous) health worker there, and an RN goes there two days a week, and a doctor visits once a fortnight. The health worker could do with more back up. He could find out what’s wrong with the patient and treat them without necessarily taking them into town.” “Clinically the remote centres would get support from the doctors and hospital”.

Home care and home assessments would be facilitated “If you had a picture or video of the living environment, you could ascertain accessibility”, without having to travel extensively. Site D has a diabetes team who provide clinical management and education advice to the regional area. There was an identified need for assistance in the management of diabetic patients where an additional level of expertise was required. Also identified was the need to reduce travel times and disruption to provide community health, diet education, podiatry, weight control and medication advice to patients at a distance from the regional centre.

As many of the clinical staff were inadequately prepared for their clinical roles in rural and remote areas, the potential for telehealth was considered by many participants to significantly influence the demands of their work practice. The influences described by participants are summarised and diagrammatically presented in figure 4.5.
Professional education, training, and support

The need by health staff to access professional or clinical education and training, and professional support was the most consistent finding across all sites. For example, health professionals at all sites identified the need to be able to access the latest clinical practice information, which was not available locally, as a high priority. In particular, participants wanted to be able to access education and training opportunities without the need to travel, summarised by one health professional in the statement: “... health training is ok in the city but if you want ... training you have to go to the city and back”. It was found that participants considered locally accessible education and training would be able to reduce the amount of time away from work, and therefore disruption to services, reduce time away from family, reduce costs to themselves and/or their health services, and assist in maintaining professional standards. The opportunity for more flexible delivery of education programs to include all small sites within the region was identified as a way to support a team approach in the region; improve and increase clinical supervision; and
provide access to professional meetings, tutorials, in-service, case reviews, link with grand rounds and opportunities in postgraduate education. Health staff in all sites considered these opportunities to be vital to improving quality of care provided and staff morale.

Medical practitioners at Site D considered access to medical grand rounds from a metropolitan teaching hospital to be a suitable telehealth application, along with opportunities for clinical supervision, professional meetings, specialty tutorials, in-service postgraduate education, improved undergraduate student support and multi-discipline case reviews. Nursing, allied health and medical staff at Site D recognised the opportunity for better staff retention through greater education opportunities, and was characterised by one nurse who described the situation as:

“[Site D] has a high turnover of nursing staff and staff who often only stay for short term contracts. Now there is a larger paediatric services with inadequately prepared staff. Nursing staff feel isolated from educational opportunities and their peers in other areas.”

The nurses who participated in the focus group interviews felt that they were being left behind professionally, and they needed to be able to access more rapid skills updates on patient management from experts.

One community health nurse explained the situation:

“they could actually keep their staff within the region ......having four or five people out of the region at education session is out of the question. So not having travel costs, so not having travel costs, plus retaining the capability in the region in case something major happens is an attraction”.

Another community health nurse explained that “We could have regular monthly staff meetings” and “Professional support would be available, so remote areas wouldn’t feel so isolated and would feel like part of the team”. With one health staff member reporting that Aboriginal “health workers want accredited education that doesn’t require them to travel to Perth”, highlighting cultural considerations when planning for health services.

Analysis of data from interviews with privately employed health professionals at each site found similar needs; including, more professional assistance and support via staff education and training and patient management advice to relieve feelings of isolation and ensure quality practice outcomes. For example, Occupational Health and Safety nurses from three private industry groups
in Site D found that they often felt isolated from their own industry, as well as from other health professionals in the town. Ambulance officers at all Sites identified education and skills training as the major need to maintain quality services. It was found that public health practitioners at Site D had limited access to professional organisations which created a feeling of isolation. This was also compounded by the feeling of poor work outcomes due to small staff numbers required to cover a large area and increasing time spent travelling to remote destinations.

Health managers saw opportunities to use technology as a way of addressing “travel as a barrier to increased participation by staff in in-service and educational opportunities”. It was also found that they could hold multi-location meetings “45 minute meeting with 1 day of driving to get there and back”. A Staff Development Nurse at Site D wrote in the survey evaluation:

“The technology is a fantastic means of spreading education to disadvantaged staff in smaller remote sites, eg one day twelve nurses at [site] were grouped/crowded around their computer based telepsych unit to watch and hear a visiting midwifery expert. It was the first time many of them had this type of education in years! And all reported favourably despite the limitations of the size of the screen”.

While geographical isolation and financial factors are traditional barriers to gaining professional education, telehealth was regarded as a marked opportunity for improvements. However, poor technological and telecommunications infrastructure were identified as key barriers (Curran, Fleet & Kirby, 2006).
Managing information and technology

In all sites, the clinical component of the health professionals’ role was found to be significantly influenced by the available information management and technology infrastructure. Therefore, there was an expectation that an improved telecommunications infrastructure would improve clinical practice. A number of structural features were found to be essential across all sites. These included:

- the need to improve telecommunications bandwidth for faster and more reliable services, as well as access to more telecommunication infrastructure, particularly linking to other health services;
- the need for a unified approach to telecommunications for health and community services rather than each government agency and community group planning, purchasing and evaluating their own telecommunications and equipment as currently existed;
- access to better security measures related to use of telecommunications network by non-health staff; and

Figure 4.6: Issues around professional education, training and support
improved access to information about different sites, particularly for continuity of care for indigenous people who travel between remote communities and regional centres.

“We need a system that we can find people without difficulty; we need a structure that is easy to follow and straightforward. We are split into our little regions and they are all autonomous, therefore we find that when we need to access these regions we don’t know who there is or who is available”.

It was found in site D that health management saw it as “important to establish a system for electronic results. This includes to and from the remote sites within the region”. However, the IT staff needed better bandwidth “to run all the applications needed and to give access to more users” and acknowledged that “both the LAN and WAN would not be able to cope with the extra traffic that telehealth applications would bring”. Significant additional issues relating to the cost of phone bills and the maintenance of equipment were found to impact on the process of delivering quality health services.

Figure 4.7: Influences on information management and technology
SUMMARY

The Telehealth Project team undertook collective discussions through the use of participatory processes with community participants. However, community participants still identified a significant number of barriers to the telehealth planning process. These were:

- Lack of local inclusion in planning committees and subsequent Site Implementation Plan.
- Initial consultation not continued – subsequent consultations conducted with regional head office only.
- Local key committees not seeking wider community opinion.
- Poor communication within central government. (For example, change of WADOH telehealth staff, requiring repetition of information previously provided).
- Over use of external consultants.
- Local information not included in the Site Implementation Plan.
- WADOH bringing predetermined ideas and thereby assuming that local stakeholders “did not understand the issues”.
- Bias toward medical staff view.
- Limited scope of invitation to contribute.
- Lack of local knowledge in the function of the technology.
- Inadequate consultation with remote sites within regions.
- Conflict between central government and metropolitan service providers.
- Inadequate attention paid to site problems by central government.
- Poor information transfer from central government to sites.
- Lack of transparency in spending by central government.
- Gatekeeping by senior health staff as to who is appropriate to attend meetings.
- Differing understandings and expectations of participants.
CONCLUSION

This chapter has described the findings from the analysis of the individual interviews, focus group interviews and survey evaluation that were conducted to gather data for this study. It was recognised that the Telehealth Implementation Plan was a summary of actions from community, government and industry consultations. However, it also described the desire by two different government departments to maintain power and control over the Telehealth Project, as well as the lack of acceptance of community knowledge, expectations and needs. It demonstrated that confidence in the government process was not high, with community participants having identified a number of issues that impacted negatively in the government planning process. These included the problem with issues at the corporate level of government all related to costs first, when issues at the regional level were determined by being able to “see the benefit” first.

The evaluation of the Telehealth Implementation Plan clearly illustrated the desire for government to achieve its own priorities for health related telecommunications technologies and applications, over the needs of the local community. It also reflects a medical model of health that did not address local expectations, needs and interests; the political agenda of telecommunications; the misleading use and manipulation of information; the over use of external business consultants; and a “culture of accepting incompetence in government”.

Overall, analysis of findings demonstrated major issues which go against successful implementation of the Telehealth Project, and which significantly influence community participation in planning. As one participants summarised:

“Telehealth should be in the best place for those who need to use it”.


CHAPTER FIVE

DISCUSSION

Everyone has duties to the community in which alone the free and full development of his (sic) personality is possible. (United Nations Universal Declaration of Human Rights, 1948).

INTRODUCTION

The purpose of the study was to examine influences on community participation in government and private sector planning for health related telecommunications in rural and remote Western Australia. The study was interpretive and examined three distinct parts of the government planning process; inter-departmental planning for state-wide telecommunications and the Telehealth Project; community expectations, needs and interests relating to telehealth; and the influences on acceptance of the Telehealth Implementation Plan in the community.

This study exposes the influences that arise when centrally controlled planning processes seek to include Commonwealth, State, regional and local interests and knowledge. As the case study demonstrates, a number of conflicting perceptions and expectations mitigated against successful implementation of the project. The problem for government is that it seeks overall power and independence, but governments must work with people within communities to implement its plans, programs and projects at a local level. In effect, the community should be seen as a partner in a setting of cooperation and collaboration with government. The problem for communities lies in ensuring they play a greater role in identifying and attending to their own problems and concerns (Pelletier et al, 2003).
Implications of the findings for participatory planning in telehealth and telecommunications projects revolve around the nature of participation; that is, in many health projects participation is fundamentally different for the privileged than disadvantaged community members (Boyce, 2002). Programs are more effective when they emerge from local consensus and priorities (Zakus & Lysack, 1998), and revolve around the types of participation and decision making processes that promote acceptance by community and government participants. These common sense concepts that need to inform future planning theory and practice are discussed at the conclusion of the chapter.

**A Model For Planning**

Using Donabedian’s (1980) framework proved to be ideal for representing how the system of project planning could be visualised in terms of its component parts. The planning process is represented as the stakeholders, structures and processes; that is, the parts which influenced the system of planning.

The stakeholders were most influential in planning for the Telehealth Project. The structures in which planning took place extend beyond that of formal organisational structures as defined by the WADOH. Planning was influenced by process factors relating to power and control over the process and choice of participants, inclusion of locally identified interests as compared with government expectations, understandings of health, how technology is used, and the need for authentic partnerships, leadership and change management.

The model for planning is presented diagrammatically as Figure 5.1. As reported in chapter four, the outcome of the Telehealth project was not acceptable to a large number of community members. This requires examination of the individual parts (stakeholders, structures and processes) to review what was unsuccessful and unacceptable in terms of the project plan and subsequent implementation. A feedback loop diagrammatically illustrates the return into the system when the outcome is unacceptable to the community or government/commissioning body. The system cannot work if the impact of the feedback loop does not work.
Major Issues And Recommendations

The major issues that influenced successful implementation are introduced below and discussed in detail within this chapter. These are followed by key recommendations for successful implementation.

- Power and control; where tensions between government priorities and community need impact on who and what is included in project planning. These were influenced by a top down approach to consultation and community participation.
- Representativeness of participants; where accessing community based participants was blocked, which affects whether the participants actually spoke for the community.
- Importance of intra- and inter-regional links identified by participants.
- Conflict between organisational expectations of success and local needs as reflected different understandings of health.
- A lack of an understanding of and commitment to community health, as reflected in conflicting plans for mental health services
- Technology being inappropriately placed at the centre of the planning process.

The key recommendations for successful community participation in health and telecommunications planning are:

- A remodelling of community health services in Western Australia that gives community health a profile comparative to tertiary health services, opportunities for individuals and community groups to be heard, and provides visible community health leaders in central government.
- The decentralisation of health planning and decision making power to the local level, while maintaining financial and other support from national and state governments. This is not just an issue for developing countries or nations in conflict; it is relevant for all groups, particularly in marginalised areas of rural and remote Western Australia.
- The development of authentic partnerships, not only with local government bodies, industry and non-government organisations, but also local community groups and individuals.
The adoption of a leadership strategy which reflects a shared vision between central government and local level to enhance the role of the local health services, and where central government supports the strategy through financial, administrative and policy means.

The implementation of a change management strategy that supports present government leaders to focuses on relationship building with the objective to gain a better understanding of the power and control issues that affect communities and individuals in rural, remote and regional WA.
Figure 5.1: Influences on participatory planning for rural and remote area telehealth and telecommunications

STAKEHOLDERS
- Politicians
- Funding body
- WADOH
- OIC
- Rural health boards
- Telecommunications industry
- Community groups
- Community individuals
- Consumer health representative
- Rural Health professionals
- City Health professionals
- Regional reps
- Telehealth committee
- Government departments

CONTEXT
- Tensions between power & control versus inclusiveness.
- Different understandings of community health.
- Conflicting expectations of success.
- Inappropriate use of technology.
- Lack of partnerships and leadership.
- Lack of a change management strategy.

ACCEPTABLE TELEHEALTH PROJECT PLAN

SUCCESSFUL IMPLEMENTATION

UNACCEPTABLE PROJECT PLAN

Return to review system

System review
MAJOR ISSUES INFLUENCING SUCCESSFUL IMPLEMENTATION

This section discusses the major issues that mitigate successful implementation of the Telehealth Project: power and control, representativeness of participants, regional development and inequality, conflicting expectations of success, a lack of commitment to community health, and the inappropriate use of technology.

Power And Control

Throughout this study issues of power and control emerged, and served to reinforce the conflict between centralised control, government decision making, and local knowledge. Anderson et al (2006), in a qualitative study exploring the process of public involvement in planning for primary health care, found that the use of power through a top down approach to consultation and decision making disabled “real participation, allowing organisations to claim that they are open, while effectively excluding those most affected by decisions” (p.78). Power, control and professional attitudes bordering on arrogance emerged from the interaction between different parties. This is the antithesis of a participative approach which was the original intention of the government meetings. Interestingly, this study also found that some respondents were reluctant to be forthright in their responses for fear of recrimination from their health departments or colleagues, an issue found by Rose et al (2003) in investigating whether community planning groups influenced Human Immunodeficiency Virus prevention policy, which was a limitation to the community planning processes.

Even in a participatory process that appears fair to participants and observers, power can influence planning, shape perceived needs, and manipulate resulting action plans. Power within society is circumscribed as being influenced by forms and patterns of participation in decision making, institutional planning which operates to benefit some people and groups at the expense of others; and the ability of powerful groups to shape the perceived needs of the less powerful (Pelletier et al, 2000; Forester, 1989). The implication for future planning is about operationalising the rhetoric that surrounds participation.

The literature on the need for inclusiveness in health and rural projects is prolific, particularly in relation to culture and demographics. Inclusiveness is central
to participation (Campbell & McLean, 2002; National Rural Health Alliance, 2002; Abelson, 2001; Baum, 2000) but was not considered a priority for successful outcomes by WADOH management in this study. The distinct lack of inclusiveness was evident in demands which were external to the project specifications. This was shown in rural and remote sites not included in the Telehealth Project but wanting improved telecommunications; and from all four Project sites wanting their regional area to be included in the Project. It was also evident where nurse managers excluding nurses from the project. Without truly inclusive project planning projects will not be acceptable or sustainable. Subsequently they are not successful and do not improve services and better health outcomes for individuals and communities. Both inclusiveness and a top down approach to participation will be discussed in detail to follow.

**Top down approach**

In this study, attempts were made by the Telehealth project team to enable the process of community involvement to be led by the local community participants. However, two levels of interference were found. One was by local health managers wanting to control the process of consultation. The other was the control over the process of decision making for the final action plan by health bureaucrats in the metropolitan head office. These top-down approaches resulted in a significant number of local people being excluded from the study, and the voices of those involved in the consultation process being ignored in final decision making.

The implications resulting from the top-down approach to consultation and decision making in project planning are significant. One effect is that people may have been put at risk by neglecting their needs, negatively affecting health outcomes. Other effects include the unethical practice of misusing funding. Low staff satisfaction, resulting in recruitment and retention issues are another negative outcome, as is disengagement by community residents. Literature clearly shows that efforts to promote actions that are more responsive to broad shared public values should focus on coordinating the "upstream" decision-making processes at state, federal and international levels, in addition to those taking place at the community level (Haviland, 2004; Irvin & Stansbury, 2004; Pelletier et al, 2000). In the Telehealth Project power was maintained at the top levels of government by the
withholding of information and opportunities to discuss issues from community members and local health professionals. Some of the discussions and decisions occurred without the benefit of certain types of external knowledge such as certain legal, administrative or technical matters; and some occurred without the benefit of sufficient opportunity to explore the ethical implications of their discussions and decisions. In both cases, such interventions may have had a substantial impact on the discussions and voluntary decisions of the groups, without necessarily implying any external coercion (Pelletier et al, 2003). This meant that, like similarly disadvantaged rural people, participants had limited involvement in decisions “about their own health, their local health services, and social and economic developments that may affect their health” (NRHA, 2003, p.4).

The power imbalance extended to affect many of the health professionals living in the local sites. Their knowledge was considered to be of less value by the health bureaucrats, as shown by community needs excluded from the Telehealth Implementation Plan. By allowing the process of consultation to take place within a participatory approach, the bureaucrats were able to claim that they were open and inclusive, while excluding those affected by the decisions. The perception that professional expert’s knowledge is intrinsically of greater value than that of the community, “can lead to the neglect of important sources of lay knowledge particularly to local decisions” (Anderson et al, 2006, p.79).

During planning, literature reviews were conducted to direct and advise the project, inform reflection and inform the CRG and TSC of recent telehealth initiatives as evidenced in the literature. At the time the study commenced, literature clearly indicated a low utilisation and efficacy of telehealth equipment in emergency departments and that the equipment was often not of use, particularly in emergent scenarios (Shanit & Greenbaum; 1997). This was brought to the TSC meeting by a Telehealth Project team member and guided the discussion of the use of telehealth in hospital emergency departments. Upon reflection, the members of the TSC insisted on the placement of telehealth equipment into emergency departments, particularly to support junior medical staff in the outer metropolitan hospitals who were often left without supervision after hours. Participants from rural and metropolitan hospital Emergency Departments were made aware of the poor use of videoconferencing technologies for medical emergencies in similar departments overseas, subsequently the Telehealth Project focused on other issues of evidence based practice, for
example the positive potential for conducting speech therapy from large rural centres to remote or satellite sites. This became a priority in two sites.

Another significant issue in terms of structural factors was the diverse opinion on the high bandwidth required for health applications. A bandwidth requirement for clinical applications was evident in peer reviewed journals and government standards documents, and described legally defendable image quality (Australia Commonwealth Department of Health and Family Services, 1998). The implications of using an incorrect bandwidth could have imperilled patient care. The failure to act was potentially subversive putting the health professionals at risk of liability. Patients could also be at risk of harm. The government departments could be at risk of litigation with one arm of government working at cross purposes of the other and neither managing risk appropriately.

The planning for a telecommunications network to support the WADOH’s Telehealth Project involved numerous state government departments, the majority of whom worked effectively together. The exception was the DC&T’s telecommunications coordinating group, the OIC, which remained at a distance from other participants preferring to consult frequently, and only sporadically engaging other departments in decision making. Analysis of findings show that OIC adopted this approach to avoid a commitment to recommendations that it considered would compromise its pre-conceived proposal for state-wide telecommunications. This would effect how the government formulates strategic plans for implementation of telecommunications technologies (in this case, the Telehealth Project). Redden (1999) and Hudson (1999) note that compromise between government departments is a common impediment to the implementation of strategies.

The Citizens and Civics Unit of the West Australian Department of Premier and Cabinet reported in 2002, that it is neither effective nor appropriate to consult if a final decision has already been made, or if the commissioning body cannot influence a final decision. Both of these guidelines were violated within the Telehealth Project. This was evident in the case where WADOH had pre-determined what would be included in the Telehealth Implementation Plan, irrespective of community expectations and needs. In addition the OIC had pre-determined the telecommunications solution for the State of Western Australia, even though it was found not to meet the needs of the WADOH. It was also evident in that the commissioning body (WADOH) could not influence the final decision on the
telecommunications solution to meet the Telehealth Project requirements and subsequently let down the community.

The final WADOH Telehealth Implementation Plan therefore violated the spirit of collaboration by being mostly a representation of the decisions of those in power in State government. This goes against the NRHA (2003) vision for people in rural and remote areas to be as healthy as other Australians by “community members, health professionals and others who work in rural, regional and remote communities working together to determine priorities for local action” (NRHA, 2003, p.11). By not allowing people to be involved in decisions about their health the State government managers have disempowered the communities and reduced opportunities to maximise positive health outcomes.

A disempowered community is not functional or healthy (Putnam, 2000). To address these issues the promotion of social capital is instrumental, that is, “the capacity of individuals to command scarce resources by virtue of their membership in networks or broader social structures” (Portes, 1998, p.12) and the “features of social organization, such as trust, norms and networks” (Putnam, Leonardi & Nanetti, 1993). In this study the cohesion, trust and reciprocity required for authentic social capital is not evident. As a positive association exists between social capital and better health (Islam et al, 2006) it is essential that strategies to improve social capital in rural and remote sites are implemented. Without, for example, the leadership of a designated head of community health, it is highly unlikely social capital will accumulate.

Inclusiveness

If the success of participatory planning projects can be judged by their capacity to achieve local ownership and community participation (Healey, 1997), this project was not a success. This study assessed local interests, needs and expectations relating to health and telecommunications before and after planning; and fairness of the implementation (action) plans. Despite variation in needs and expectations, participants readily agreed on desired changes to the health system and they considered the process to be a fair and positive experience. However, the action agendas, follow-up actions and changes to action plans did not include common interests or interests of participants. This reflected “differences in the fairness and
effectiveness of participation during and after the events, established agendas and preferences of local institutions and a variety of market and regulatory barriers.” (Pelletier et al, 2003, p.S301). As recorded in chapter four, the Telehealth Project was initially embraced by community members, health professionals and managers alike. However, only a few of the recommendations from the site plans were implemented, and only if they related to clinical and hospital based applications. Consequently, local input was ignored and opportunities for community ownership negated.

Recent policy has been developed in Western Australia to promote community participation or public involvement in planning health (Citizens and Civics Unit, 2002; 2003). While difficulties engaging people in the process of participation have been noted (Anderson et al, 2006), the analysis of study data found many more contributing factors which impacted on how individuals and communities were included in project planning. For example, interviews with regional health management staff at all sites revealed a high level of confidence and acceptance in the planning process and the Site Implementation Plan. In contrast, community members and local service providers considered the process to be very poor, expressing minimal confidence in both central and regional government understanding of “the real versus perceived needs of remote areas”. It is therefore important to understand why this has occurred so that the lessons of the past can inform a preferred future for those disadvantaged by isolation.

One of the dynamics of community participation is the need for an empowered version of community. However, the use of the rhetoric surrounding terms such as ‘community engagement’ and ‘community’ can impact negatively on a model of participatory planning which aims to empower individuals and communities. For example, the Telehealth Project objectives were about outcomes, and did not take the structural and process influences into account that impact on project success. While the RTIF encouraged a community development approach to planning, the main evaluation criterion was to meet government funding obligations.

For a project to be inclusive it must, for example, extol changes in how governments function, and effect changes in responsibilities, so that flow is bidirectional downward from state to local, and upward to regional and national agencies. However, the bidirectional flow can makes issues such as accountability, transparency and participation more difficult to measure (Robinson, 2005). A central
part of being more inclusive is about finding new ways in engaging with communities. This means fostering dialogue between governments and community members, and developing new forms of multi-stakeholder dialogue collaboration between the public and private sectors. It also means engaging key communities of leaders from different sectors in collectively addressing challenges at the local remote, rural or regional levels.

The notion of inclusiveness and participation is grounded in international human rights law, specifically, the 1976 International Covenant on Civil and Political Rights (United Nations, 1993). It contends that people are entitled to participate in strategies and implement and monitor how governments and others perform their responsibilities, and that the most meaningful political decisions are those that affect individual and community lives, and the economic and social rights.

In practice the best examples of equity and fairness are whether a system protects and empowers those who are weak and disadvantaged, and whether authorities protect the rights of people who are excluded and unpopular and politically invisible. This is why attention should be given to include those who are normally not included in planning. This includes those who are most at risk – minorities; women and children; people living in isolation due to geography, religion, gender, ethnicity, age, caste, class, language etc. – to protect such individuals.

**Representativeness Of Participants**

In determining the needs, interests and expectations of community members and in evaluating the Telehealth Implementation Plan, two issues arose: firstly, impediments to accessing community members and community based health professionals; and secondly, that not all the participants included in the project were representative of the site in which they lived or worked, and therefore could not purport to speak for the whole community.

As described in the findings, potential health services to sites, the validity of the project plan and the significance of its outcomes, was reduced by access to participants being restricted or blocked. This included:

- the identification of participants for the community consultation stage of the project not always translating into invitations being extended to attend meetings;
information being withheld, predominantly from health staff by their managers; and

local community members not being acknowledged as significant to the Project by key people and health managers.

The preparation of the Site Implementation Plans also revealed a need for participants to be identified by more than just one key person from each site to obtain a cross section of people and ensure true community representation at each site. This has previously been identified as a critical issue in participation (Naylor et al, 2002). For example, the lack of representation by indigenous people in Site D reduced the opportunity for the Telehealth Project to address this group’s significant health needs. It must be recognised and incorporated into planning that communities are not some homogenous body; they are often burdened with divisions, tensions and conflicts, and marginalised groups may be unwilling or even unable to participate. However, the role of bureaucracies in support of community participation by disadvantaged groups is not well studied.

Reports describe how bureaucracy interacts with mainstream health advisory bodies such as district health councils (WADOH, 2005b; Boyce, 2002). For example, in this study there were a substantial proportion of respondents reported to be representing the government, which is considered a limitation to participatory studies as it may lead to more favourable evaluations of their health departments (Rose et al, 2003).

Collective discussion and decision making did not necessarily identify all the common interest and the concerns of all subgroups in this study, an issue also noted by Pelletier et al (2003). It is essential to allow communities to define their own definition of community. As Marshall and Craft (2000) state to define the ‘community’ accurately to be able to determine what services are required.

**Regional Development And Inequality**

As reported in the findings chapter, all sites in the study identified the need for links to other individuals, community groups and health professionals within their region. Significantly, these links were not only within the WADOH designated
The request for links within regions and between regions fosters a community development model, whereby the community is involved in the formulation of solutions and actions. This was demonstrated in the way local concerns incorporated decisions about what would ‘add value’ to the community through planning for the whole region, such as for intra- and inter-regional links to share information about children immunisation and health status. However, the community development process was thwarted by senior health managers and the national funding body who would not consider any requirements outside the sites, even if the sites identified that the local and regional requirements cannot be separated. A critical issue identified by Naylor et al (2002) as impacting on participation.

The importance of regional development is highlighted when planning with rural, remote and regional areas of Western Australia. The term ‘regional’ is nested territorially beneath the level of the nation, but above the local or municipal level (Cooke & Leydesdorff, 2006). This is overly rigid; a characteristic of many bureaucracies. Other issues to be discussed include regional development and inequality and regional development strategies.

**Regional development and government policies**

The relationship between a state’s policies and the resulting developmental impacts at the regional level reflect inequalities and preferential policy making toward urban, populated and coastal regions (Chakravorty, 2000; Démurger, Sachs, Woo, Bao, Chang & Mellinger, 2002). However, the regional theories on regional development and inequality offer little guidance on intra-regional development for health reform (Beer, Clower, Haughtow, & Maude, 2005; Davies and Hallet (2002) identify the need for policy-makers to consider equity issues in order to reduce inequities between regions.

The question emerges – to what extent can policy direct the process of regional development? Policy intervention may be outweighed by other regional location factors, such as peripherality, which policy can only affect to a limited extent. Relatively few studies have examined interactions between processes of national and regional development (Davies & Hallet, 2002).
Chakravorty (2000) suggests that the state is “simultaneously a reduced state (less concerned about promoting balance between regions) and an enlarged state (directing development toward selected regions)” (p.367). An issue arises – how is balance achieved between state or national growth, and regional development? Regional development policies are seen as a response of governments to electoral pressure from regions, but a response that is constrained by the dominance of neoliberal ideology; that is, where regional development is equated with economics (Cooke & Leydesdorff, 2006; Beer et al, 2005), and regions are often relegated to the role of facilitators and the providers of information.

Historically, regional development policy was seen by the federal government as a concept based on “economic efficiency criteria rather than solely on the traditional equity aspects of what some have called locational disadvantage” (Garlick, 1997, p.277). The current Liberal/National federal government in Australia maintains that regional problems will be mainly solved by focusing on national economic growth through a continuation of these economic policies (Tonts, 1999). Economic arguments push for the abolition of regional development programs, and contend that intervention in regional economies distorts markets, misallocates scarce public sector resources, and has little real impact.

While some responsibility for regional development has been shifted downwards to regions;

“the effectiveness of the organisations given this responsibility is reduced by the short-term and competitive nature of much of their funding, the lack of coordination between regional development actors at the local level, the proliferation of agencies and the competition between them” (Beer et al, 2005).

Regional development policies are intended to empower regional communities, to assist them to identify, pursue, and realise strategic economic directions, and to play a more active role in partnership with government, the private sector and the non-government sector (Garlick, 1997). Jessop (2002) agrees, and reports that there is a need for a downward shift of responsibility for development to regions and towns.

In the Telehealth Project, the Western Australian and federal governments have retained their influence over regional decision making by determining the regulatory and policy frameworks for others. As such, the role of government is in directing regional planning. In the case of the Telehealth Project, it is the
government that decides how much money is to be made available, for which time period, to which types of groups, and what policy concerns each group should be given.

“In effect the state has retained a disciplinary power over how it allocates funding and responsibilities, a process which has seen the rise of the audit culture and a proliferation of short-term experiments which can be closed, cloned or converted into different approaches at will” (Beer et al, 2005, p.49).

Salazar (2005) reports that examples of ‘best practice’, are often put forward to local, regional and national governments, yet may not be suitable for local needs, thereby questioning the appropriateness of using existing projects to formulate health policy and health services. Further supporting a contention in this dissertation; that development of health policies and spending should be based on local needs.

In a 2005 review of United Kingdom (UK) government spending, found that Treasury accepts that need is the correct guide to spending on public, but that it is incorrectly dependent on population numbers and does not compensate for differences in need. MacKay and Williams (2005) found that the heavy cost of the public services is part of the argument for a more even distribution of income, wealth and employment.

The impact of compulsory competitive tendering for the provision of telecommunications services to remote, rural and regional Western Australia was negative. The tender severely impacted on the level of services proposed for the sites in the study, as the tender met the majority needs of the multiple government departments, and did not consider individual requirements. Public services, such as doctors in towns, have been shown to play an important stabilising role in regional economic development (Australia Commonwealth Department of Health and Ageing, 2000b). However, the WA government’s state-wide telecommunications tender did not respond to all community, and government department requirements, alienated sites not in the project brief, and undermined the stabilising role public services usually have in regional areas. This was similar to what eventuated in the UK (Pinch & Patterson, 2000).
Regional development strategies

As discussed earlier, this study found that national and state level policies did not always meet the interests of local rural, remote and regional communities. Clearly, a change in strategies is required. These strategies include improving infrastructure, increasing human capital formation, decentralisation, strategic partnerships, and developing local health agencies.

Improving infrastructure to overcome geographic barriers is fundamental to improving regions (Démurger et al, 2002). Increasing human capital formation (education and medical care) is also crucial because it can assist with better ideas to solve problems like unbalanced regional growth (Démurger et al, 2002). Decentralisation as a strategy to meet rural and remote area needs is also important to improve outcomes. Ansell (2000) suggests that states are strongly embedded in society and pursue their objectives by operating through networks of societal associations. Both state agencies and societal associations take the form of 'network' or decentralised, team-based organisations;

“with strong lateral communication and coordination that crosses functional boundaries within and between organizations. These organizations are then linked together by means of cooperative exchange relationships around common projects” (Ansell, 2000, p.283).

The role of the state is to then empower stakeholders and facilitate cooperation among them through the development of authentic, sustainable strategic partnerships.

The Jakarta Declaration adopted at the Fourth International Conference on Health Promotion held in July 1997 stressed the importance of developing multi-sectoral cooperation, networks and partnerships to more effectively promote health, to both facilitate the effective use of knowledge and resources and foster coordinated action to promote health (WHO-WPRO, 1999). As recommended by participants in the WPRO Regional Workshop, it is important that this approach be sustainable, requiring relevant agencies to make long-term, consistent efforts. Unfortunately, the transitory nature of many governments and organisations due to restructuring and the electoral process means that continuity of effort is difficult to achieve. It is therefore important that regional areas are priority partners to set future directions and guide professional development in conjunction with governments and stakeholders.
In order to facilitate the development of a healthy region there is a need for health care providers, decision-makers and local community members, regardless of their disciplinary backgrounds, to build partnerships and coordinating bodies to improve links, share information and provide mutual support. Thus, it would be beneficial for governments to develop and strengthen networks within regions and partnerships with local stakeholders (Chu et al, 2000). Cooke and Leydesdorff (2006) support the call for regional development through local collaborative partnerships of towns that jointly pursue similar aims. However, Courvisanos and Martin (2005) remind us to “tackle the issue of who in the community is involved in the policy processes and their implementation, as well as whom in the community is left out” (p.9). Despite the identified benefits, regional development can present significant challenges in integrating and coordinating services in a manner that produces economies of scale. “It requires an enhanced level of information that may be difficult to achieve; it is unlikely to involve citizens in health-care decision making; and it may actually lead to increased costs” (Frankish et al, 2002).

In 1999 a regional health summit was convened by the National Rural Health Alliance (NRHA) with an aim to develop partnerships between the government, business and community sectors to deliver a better future for regional, rural and remote areas of Australia. The NRHA is the peak body working to improve the health of Australians in rural and remote areas, and comprises a network of national bodies or rural special interest groups of national bodies. At the summit, regional health issues were discussed and five key health priorities were identified; the need to change the dominant metropolitan mind-set, improve access to health-care services, improve service provision and workforce training, ensure equitable resource allocation, and adopt a population health approach. The Summit emphasised coordination and the adoption of an inter-sectoral approach, and recognised the need to empower local communities and build partnerships between the government, corporate and community sectors (Humphreys, 2000)

Regional, local and community models of health already exist in Australia, but as this study has shown, they have been markedly undermined in Western Australia. Salazar (2005) propose a regional model to improve public and community health. By building health capacity together with relevant government departments, other agencies and stakeholders at the regional level, complete pictures of population health and health and social care needs, will become the basic
epidemiological building block. In addition, a change management strategy should be implemented to ensure smooth transitions to any new developments. Also required are technical, management and political approaches involving new partnerships, new ways to involve different stakeholders in the process, new methods and tools, and ways to overcome resource restrictions and improve health effectiveness (Salazar, 2005).

**Conflicting Expectations Of Success**

The conflict between organisational expectations and local needs created a problem for planning which was reflected in the differences between the Site Implementation Plans (SIP) and the Telehealth Implementation Plan. This incompatibility between the plans formulated at the local communities and the existing institutional agendas at local, state and federal levels was a reflection of the different understandings of health, and resulted in conflicting expectations of success for the Telehealth Project.

While the final Telehealth Implementation Plan did generally not reflect the expectations, needs and interests of the community members involved in planning, stage two of the project did reveal local knowledge and enabled people to take a fresh look at the region from a social health perspective. The community participants were able to challenge the social, environmental and economic conditions which brought about ill-health in their community. The Site Implementation Plans therefore reflected a social orientation to health.

Recognising the complexity of issues involved in health and well-being, Marshall and Craft (2000, p.12) advocate challenging the structures that hinder the achievement of health. The importance of different determinants of health and the translation of this into intervention strategies is essential for improvement of health. It is essential that health services address all determinants of health, but this needs to be acknowledged at the senior management and policy level for plans, programs and policies to be successful. The structures that affect social inclusion and a ‘voice’ for the community also affect health in a fundamental way.

This study community based evaluation interviews revealed a strong desire for institutional support, either from community programs or hospital services
through the mainstreaming of telehealth services. However, conflicting definitions of health ensured a lack of agreement on what these services should be. To truly address a site's health, structures need to be put in place that change people's definitions of health. These structures can include the development of community health plans through an action research model.

**Lack Of Commitment To Community Health**

This study revealed the lack of a common understanding and commitment to what constitutes community health in Western Australia. There was a significant lack of cohesion between sites and regions for community health services; a lack of leadership in community health; a disproportionate amount of attention given to non-community applications; and a low priority given to community health by WADOH management level.

Clearly, there was no common understanding of what is community health. This included understandings between central government bureaucrats and community health staff; between some rural health managers and community health staff; and between community participants and community leaders. It is also clearly reflected in the population health language of reports and organisational structure of WADOH. Of the six strategic directions of ‘Strategic Intent 2005-2010’, partnership is only about links to other health bodies, and WADOH strategic intent uses community health to mean community-based services.

The deficiencies in the provision of community health services in Western Australia have continued to attract community attention, with a particular focus on deficits in mental health and professional support. An analysis of the current language used in discussing community health, especially in the WADOH website and filed notes, suggest that WADOH does not yet have a process for translating the policy rhetoric into real action.

This study found a distinct lack of leadership and cohesion. Interestingly, at the time the research commenced the WADOH organisational structure did not include a director of community health nursing (this was abolished in 1994) or department of community or rural health. This continues to be the case today, with any decision-making responsibilities being split and subsumed within the WADOH
Population Health Directorate, or Country Health Services. Alternatively, it is tendered out to private organisations such as Silver Chain Nursing Association for palliative care, and for some rural and remote areas nursing posts. This fragmented approach does not enable cohesive responses to community health issues.

There is an obvious lack of visibility in community health decision makers. Community health services were not included in the Telehealth Implementation Plan. In addition, any visible decision makers were caught up in the organisational bureaucracy, for example, in Site D where a director of hospital nursing, with no previous community experience, was also given the role to manage community health services in the region (including Aboriginal Health Workers). These examples indicate that community health services are not a priority to WADOH management.

The organisational structures which support effective community health services have been identified both in this research and in the ‘New Visions’ Strategy which was developed over six years ago in response to obvious failures in WA community health (Marshall & Craft, 2000). These include:

- Leadership in senior management which advocates and supports partnerships across agencies, and with key community stakeholders.
- Leadership locally to manage multidisciplinary community health services.
- Commitment to skill building.
- Professional training and support.
- Community development strategies
- Formal partnerships.
- Commitment of resources.
- Shared plans and outcomes.
- Change management strategies.

The ‘New Visions’ document has not been utilised. There remains a need to separate institutional from community health to give attention to both. Structures that are outdated in government departments and don’t match rhetoric should also be addressed. Further, power should be devolved to country health services. If policies continue to be developed without the community they will continue not to be acceptable or successful.
Conflicting plans for mental health services

One of the most significant examples of the lack of understanding and commitment to community health in the Telehealth Project was the dismissal by health bureaucrats of mental health issues identified by participants. This may have been linked to the lack of a holistic understanding of health; that health is the product of psychological, social and environmental factors, as well as the physical characteristics of individuals.

The deficiencies in the provision of mental health services for people living and working in rural, remote and regional areas of Australia was clearly noted in this study. Little has changed to address the identified mental health issues in the 13 years since the 1993 Human Rights and Equal Opportunity Commission (HREOC) ‘Burdekin Report’ on human rights and mental illness, and the 1997 Australian national survey of mental health and well being (Australian Bureau of Statistics, 1997). Both reports noted the great disparity between services provided to rural and regional areas and metropolitan areas. This was again reported in 2005 by the Mental Health Council of Australia (MHCA) ‘Not For Service: Experiences of injustice and despair in mental health care in Australia’ which underlined the fact that there are problems for people with a mental illness receiving adequate care in Australia, including “poor access to psychiatrists, particularly outside major metropolitan centres” (p.42), and the need for enhanced access to private and public sector services in rural and remote areas.

This study was conducted during this time and supports the evidence that the priority mental health areas are access to professional care, particularly in emergencies and acute care, and access to programs. There is also;
- Inadequate access to quality health services for persons with mental illness.
- A profound contrast between quality of care when presenting with a physical illness compared to a mental illness.
- A lack of respect for the opinions of professionals working in the mental health areas.
- Poor resources and inadequate facilities.

Importantly, mental health issues were a priority for community participants in this study, particularly for psychiatric emergencies and acute care, domestic violence, support for new mothers, and support for professionals. Their needs also
encompassed the social aspects of mental health such as financial counselling and family support. However, the outcomes of planning for the Telehealth project did not meet any of these identified needs. Most disturbing was the response from management at the West Australian Department of Health (WADOH) that the priority needs and expectations of rural and regional community members were not a priority to them as they were not conventionally understood as ‘clinical’, and therefore were removed from the final Telehealth Implementation Plan.

Interestingly, the community assessments were rejected by government bureaucrats in both this study and the 2005 MHCA report.

“If senior members of government at state and federal levels are prepared to reflect on the report, to accept their validity and in response show real leadership, then all Australians will have their rightful access to quality mental health care” (MHCA, 2005, p.vi).

The report went as far as suggesting that for people living or working in rural, regional or remote areas, there was “a lack of basic interest or commitment by all governments to the development of new services in this high need areas” (MHCA, 2005, p.46).

In Australia between 1993 and 1998, mental health services were largely moved out of asylums and into community based programs. However, since that time there have been fundamental failures, reflecting disorganised health and welfare systems and a lack of commitment to the provision of quality health care particularly in the public sector. This coincided with the 1991 United Nations ‘Principles for the protection of people with mental illness and the improvement of mental health care’, which emphasises community based care options and the respect for the basic rights of persons with mental illness.

The study findings show serious concerns about mental health services. This exemplifies the situation noted in the ‘Not For Service’ report, that; in Western Australia,

“current mechanisms for leadership, reform implementation and accountability in mental health have failed to bring about the necessary changes. ….. other aspects of current planning suggest that the size and scope of the problem is not apparent to those who drive health reform in WA” (MHCA, 2005, p.74).

Importantly, without an understanding of what is a community and what is community health, public sector managers are unable to meet or even acknowledge
the identified needs of community participants. This top down approach to mental health meant that issues such as counselling for relationships, domestic violence or financial matters were disregarded by health sector managers and not included in the final Telehealth Implementation Plan. The MHCA (2005) argues that the systematic failure to attend to the urgent needs of those with severe mental disorders may also lead to infringements of the wider rights of the community to reside in a safe and secure environment.

**Inappropriate Use Of Technology**

“In a technologically biased society, the assumption is generally made that a new technology will be an improvement, and the onus of proof is more strictly put on those who doubt its usefulness than on those who claim its benefits” (Bates & Linder-Pelz, 1987, p.119).

On many occasions during the study, technology was inappropriately placed at the centre of the planning process and considered to be autonomous and deterministic (Hughes, 1987), thereby being the sole determinant of outcomes. The power given to the telehealth technologies and telecommunications infrastructure undermines the fact that the utilisation of technologies is largely determined by a community or society’s cultural, organisational, political and economic structure (Smith & Marx, 1996; Herbig, 1994). Societies influence the course of technological development through social, historical and cultural factors which influence if and how technology is used. While technology can also be an agent of social change, for example, in reducing the physical labour for human beings, technological change evolves through choices between different technologies (Klecun-Dabrowska, 2002). Those choices are shaped by social factors, and therefore a number of outcomes are always possible (Williams & Edge, 1996; Mackenzie & Wajeman, 1985).

In a democracy people have influence over which technologies are used, restricted and how this process occurs. When there are power imbalances, as was the case in this study, and one dominant group insists on its definitions of technology as being the appropriate ones, key writers, such as Hughes (1996) and Bijker (1992) have argued over a number of years that innovations tend to be conventional and do not meet the interests of the relevant social groups. It is critical to understand who
makes the decisions about particular technological innovations and from what biases these decisions were made.

A deterministic approach should not be taken to using technology, but instead there should be recognition that flexibility, choice and change are possible through the users feeling they have control over the technology. If technology works it is based on the choices people have made, that is, what has been socially constructed. There needs to be critical analysis of both the underlying values of the choices and the factual information provided by ‘experts’.

The success of technological innovation depends on:
- Redefining a problem in order to accommodate all social groups.
- Providing current, accurate information about technologies.
- Ensuring decision making is based on the accurate information, as well as people’s choices.
- Action is based on those decisions

Strategies and policies should be put in place which include all of the above factors. By involving communities through consultation in public forums (Citizen Panel on Transplant Medicine, 2001; Australian Broadcasting Corporation, 1997), consumer and provider focused strategies can be developed to facilitate empowerment of individuals and communities, and improve health outcomes (Germov, 2005).

Over the last decade in Australia, there have been several attempts to ease the burden on hospitals by giving advice remotely via technology such as the telephone. Current initiatives include Royal Flying Doctor Service Melbourne telephone triage, and the HealthConnect group in Western Australia. However, these initiatives have been criticised by the Mental Health Council of Australia (2005) on the basis of a tendency to replace real clinical services with telephone triage services, causing a further lack of human contact for those already deprived by deinstitutionalisation. A finding from the 2005 report show that these initiatives will fail in rural and remote areas because telephone triage does not enable follow up, and therefore does not enable sustainable advice on health.

In 2006, there has been a resurgence of interest in telecommunications in Australia, namely, call centres to provide health advice. These telephone health support services, however, may provide only a superficial solution. For example, problems with telepsychiatry have often been found to lie in the ‘technical’
limitations and deficiencies of the technology system (May et al, 2001). In 2006, Nicolini reported on findings from the evaluation of a telespsychiatry project in Italy, that the problem lies in technology’s incompatibility with the set of practices that constitute a psychiatric consultation. Further reporting that the use of telemedicine or telehealth applications “results in a configuration of existing practices, work processes and power relationships” (Nicolini, 2006).

Technology cannot be implemented on the assumption that it will be used if available. Instead, it must meet the need of the needs of the community it is to serve, be culturally appropriate and be responsive to functional, not technical, specifications.

KEY RECOMMENDATIONS FOR COMMUNITY PARTICIPATION IN HEALTH & TELECOMMUNICATIONS PLANNING

Drawing from the analysis of the findings from this study, this section discusses the key recommendations for community participation in planning for the Telehealth Project. These are: a focus on community health, the decentralisation of decision making, authentic partnerships, authentic leadership, and change management.

A Focus On Community Based Health

As has been discussed previously, the Site Implementation Plans revealed the ability of community members to embrace a social model of health paradigm required for successful community health services. At the same time, the study found that the structures of WADOH don’t reflect the importance of community or community health, and that health is fragmented and focused on hospitals, with minimal continuity of care. These can be addressed at the community level through; a focus on locally based community health services for groups such as children, families, mental health; attention on community issues such as leadership, workforce and funding; and inclusion of truly representative community members on decision making committees.
However, this was found to be rarely achieved in this study. For example, participation on health committees was limited due to a lack of inclusion of Aboriginal community members and other marginalised groups. In contrast, the situation for professional members of other sectoral committees was more inclusive and provided opportunities for members to become authentic partners in the change process.

In 2005 and 2006, a very small number of papers have been published that address the combined issues of community health and telecommunications technology. Focus was predominantly on single applications such as clinical pathology (Mina, 2006), teledermatology (See, Lim, Le, See & Schumack, 2005), speech pathology (O’Callaghan et al, 2005), palliative care and suicide prevention (Penn et al, 2005). Of these, most assumed technology was needed and evaluated its implementation. Reports on information networks related to clinical care, individual health management, population health and research (Hanrahan, Foldy, Barthell & Wood, 2006); or the evaluation of the Information Technology (IT) networks (Ridley & Young, 2006). In two publications active participation was considered to include consumers (Hanrahan et al, 2006; Meso, Checchi, Sevcik, Loch & Straub, 2006a). However, in concluding Hanrahan et al (2006) did not include consumers as stakeholders. Meso et al (2006a) also excluded consumers from a review of Information Technology policies, and only included the perspective of senior policy makers and managers, and emphasised national Information Technology policies as the lead for policy formulation, rather than the needs of people.

Interestingly, only one paper discussed prioritising the use of consumer based solutions to community health using technology (O’Callaghan et al, 2005). This Australian publication stated that no other studies had viewed consumer based solutions, further highlighting the significance and originality of this study.

**Decentralisation Of Decision Making**

Adequate health care in rural, remote and regional areas cannot be realised in the absence of effective and accountable government departments, and where these departments (health, education, police etc.) are under-resourced, disempowered or lack qualified staff at the local level. The basic right to adequate health, education
and housing will remain unfulfilled if new approaches are not adopted in Western Australia.

One such approach is the decentralisation of government structures from central to regional or local levels of governance; and a transfer from regional to local management to overcome issues of distance and to management of the large number of government portfolios. This approach is achieved through the transfer of power and responsibilities for planning, consultation, decision making and administration, highlighting the importance of effective and participatory processes in the provision of basic rights.

Decentralisation is a generic term which covers several types of transfer of power from a central to lower level which is closer to the people it would most affect. Hutton (2006), Brinkerhoff & Leighton (2002), and Rondinelli (1990) define the most common types of decentralisation as deconcentration, delegation, devolution and privatisation. These will be defined, and discussed with examples from this study.

Deconcentration - the transfer of power and responsibility from central to peripheral offices of the same agency at various levels; for example, central WADOH to regional health services, and to local health professionals.

Delegation - the transfer of power and responsibility from central government departments to organisations not directly under the control of those departments; for example, central government to non-government organisations such as local indigenous councils.

Devolution - the transfer of power and responsibility from central government departments to lower-level, autonomous units of government through statutory or constitutional means; for example, central WADOH to the local government authorities.

Privatisation – the transfer of power and responsibility from central government departments to private entities; for example, central WADOH to Silver Chain Nursing Organisation. However, privatisation is seen as not true decentralisation.

The United Nations Development Programme (2006) through its inter-agency working groups on decentralisation has identified the aims of decentralisation to be about strengthening local bodies; as well as strengthening local partners such as community groups, women’s groups and indigenous groups. Decentralisation is
assessed in terms of the range of choices available to local-level decision makers, with wider ranges of choice being associated with higher degrees of decentralisation (Bossert, Beauvais & Bowser, 2002).

The outcomes of decentralisation, such as greater transparency as well as partnership development, help build capacity at all levels, not just at the top levels of government. The outcomes are dependent on a range of factors including: political will, history, economic resources, levels of inequity and poverty, and the constraints imposed by central governments (International Council of Human Rights Policy, 2002). Clearly a focus on the values of participation, equality and accountability can make a difference (Haviland, 2004; Dickson & Green, 2001).

Individuals and communities become active participants in the realisation that they should have access to adequate health, education and information and a voice in decision making. To enable this it is imperative that those at the local, grass-roots level hold those presently in power accountable for advancing the situation of those living in rural, regional and remote areas. At the same time, it is important that those presently in power realise their obligations and demand accountability and power devolution from the national government, particularly for more flexible criteria for funding. For example, all sites in this study recognised the need for links to other sites in their region for successful implementation of the Telehealth Project, however, strict funding guidelines would not allow other sites to be included in the Project.

Decentralisation is as an effective tool to address this issue as long as the strengthening of local bodies does not only empower local elites (Sankaran, 2003). This was found to happen in this study with some nurse managers withholding information from other nurses and denying them an opportunity to participate in discussions on the Telehealth Project. As the operational definition of decentralisation suggests, health departments have an essential responsibility to monitor such abuses of power, to ensure obligations are realised and result in sustainable and accountable practices, supported by structures which grant delegated authority to the regional and local levels.

The decentralisation of planning and decision making power is essential for the success of authentic partnerships, and will be discussed in the section to follow.
**Authentic Partnerships**

This study illustrates the importance and value of community partnerships in developing government projects. It was found that projects which involve community, industry and government will not work if decision makers do not value a ‘partnership’ commitment to process and structural factors, such as:

- Partnerships and working arrangements between communities and government
- Partnerships and working arrangements within government
- Inter-sectoral models of collaboration to deliver best outcomes
- Clear and transparent relationships between the public and private sector
- Participatory decision-making procedures and evaluation

By incorporating a partnership model into project planning, actions or outcomes are more likely to be accepted by all parties involved.

Community acceptance, participation, competence and capacity are important for partnership development (Marshall & Craft, 2000). Active participation takes place when a partnership is created between government and community members. By basing the interaction on the principle of partnership, opportunities arise for greater openness and transparency in decision making and subsequently successful and acceptable policies (Gramberger, 2001). Governments need to develop a culture of partnership within organisations to develop successful public participation strategies (Citizens and Civics Unit, 2003).

The Telehealth Project staff in this study showed a commitment to a partnership model by clearly participating with local communities to design and evaluate the Telehealth Plan for each site. However, attempts by Telehealth Project staff to partner with government departments and some local managers did not work. While the project team undertook collective discussions through the use of participatory decision-making procedures, they were not always able to identify collective actions. This was due to some senior local participants not wanting involvement of non-health professionals, and therefore not directing discussions toward the common interest, an issue also found by Pelletier et al (2003).

Interestingly, the attitude of health bureaucrats is reflected in WADOH reports. WADOH do report the need for partnerships for a healthy community in the document ‘Strategic Intent 2005-2010’ (2004), but do not do not present action plans for strategic delivery of partnerships. Instead, a set of strategic directions for
Western Australia’s public health system which include the necessity to involve partnering with other agencies and providers, but only goes as far as to ‘involve’ and have ‘links to’ consumers and carers in planning, delivery and evaluation of health services, rather than partnering with community members. The negative attitude toward community health partnerships is also demonstrated in the metropolitan area relationship with rural and remote areas. In this case, there was limited understanding by metropolitan health practitioners of the amount of clinical practice undertaken in rural and remote areas, and of their inadequate capacity to meet the health needs of sites.

This study demonstrates the importance of partnerships in health service planning, whereby community participants are not just consulted, but engaged as partners within the planning, decision making and evaluation stages of any plans (International Association of Public Participation, 2004; Citizens and Civics Unit, 2002; Rifkin & Pridmore, 2001). This study also acknowledges that each of the organisations or communities that make up the partnership has its own culture, mission, vision, strategies, and histories of accomplishments and failures.

Community health partnerships can help to build greater social capital within a community, which is positively associated with fewer problems accessing health care services (Baum et al., 2000). A major challenge facing community health partnerships is to create the needed “interdependence among separate organisations to facilitate concerted action to improve community health” (Shortell et al., 2002, p.62). However, this is not reflected in current WADOH documentation. For example, the WA Health Operational Plan 2006-2007 (2006) outlines a community health strategy which involves community based management and partnerships. However, it states that the strategy will only involve partnering with other agencies and providers, not community members. Similarly, the strategy to empower communities and individuals only targets the self management of chronic and long term conditions, and does extend to WADOH acknowledged priorities such as indigenous peoples.

The effective implementation of health and telecommunications projects depends on local ownership achieved through participation, decreased power of the external funding body (Naylor et al., 2002), and organisations recognising that communities deserve decision making power (Parker et al., 2003). The following recommendations are suggested:
Priority being given to the improvement of mental health services in rural and remote Western Australia. Particularly in the areas of psychiatry, family counselling and domestic violence.

Incorporate demographically relevant groups in planning.

Forum for indigenous issues, particularly in the area of education and health. This includes the need to establish arrangements for partnerships with parents, families, women and community members in decisions regarding the planning, implementation and evaluation of programs; and the training and employment of qualified indigenous people in the health sector.

**Change Management**

The WADOH Telehealth Project was a multi-million dollar attempt to improve health services to rural and remote West Australians. Before such a large project was implemented it was essential to undertake serious planning, that includes change management. This was not done well by the Project managers and subsequently this influenced the unsuccessful implementation of the Project. My own experience in rural and remote areas, and this study show that the inflexible manner of sequential planning often does not meet the needs of the smaller populations in rural and remote area. A more creative planning approach, which includes change management strategy and local leadership, is required to meet these needs.

While the WADOH has modified itself numerous times over the past decade in an attempt to become a better organisation, more change is needed to have acceptable outcomes to both government and community. At the time of the Telehealth Project, the WADOH had no change management strategies in place for rural and remote areas. For example, for cross agency links – education, aged, police and health.

Successful change management is a phased process that requires a considerable length of time. Had the strategies for the WADOH Telehealth Project implementation included Kotter’s (1995) requirements for successful change (in the Harvard Business Review), the Project may have had more success. The Project will be discussed against this description.
- Establish a great sense of urgency amongst a majority of staff – While change requires leadership, it is often ineffective if there are too many managers and not enough leaders. The key leader should be the head of the area that is to be changed. However, as discussed earlier, an important requirement is to ensure the leader brings the voice of all groups to the process.

- Create a powerful guiding coalition – Clearly, major change requires a shared commitment from the key leader, plus a significant key group to enable progress. This must include stakeholders such as key bureaucrats and community members. Project managers need to get these people together, and help them get a shared understanding of problems and opportunities, and create trust and communications. The group should be led by a key leader from the area to achieve the power that is required for change. This local leader should have the capacity to influence institutional and departmental decision makers, who are removed from the local setting. The United Nations (2000), in its description of the Millennium Development Goals states that to realise the highest attainable standards of health, that is, the right to health, we have recognise “who’s got the power”.

- Vision – Firstly, a picture must be developed that is easy to communicate and that appeals to communities, stakeholders and government. While the first draft may come from an individual [such as the WADOH New Vision: Community health services for the future (2002)], the group should spend considerable time developing the strategy to achieving that vision. The WADOH New Vision was not simply presented, nor was it used to develop strategy, subsequently the document has not been utilised. Secondly, the vision document needs to be reviewed by other departments, such as accounting, human resources and quality to be successfully implemented. Again, this has not been done with the

- Communicating the vision – utilise existing communication channels, and incorporate activities to be undertaken, how proposed solutions fit the larger organisational picture, how the project team contribute, and what the role of management is. It should also allow opportunities for feedback from all.

- Remove obstacles to the new vision – a significant obstacle to undermining change is if key individuals behave inconsistently from what they say. Obstacles can be perceived by those involved, having a narrow organisational structure, performance appraisals that make people choose between the new vision and
their own self-interest, and management who are inconsistent with the process. In this case, government representatives were often dismissive of community identified expectations and needs, rather than problem solving.

- Plan for short term gains – to continue the momentum, when major change takes a long time.
- Declare wins appropriately – it is appropriate to celebrate significant gains, but not to declare the project a success.
- Anchor change in the organisational structure – where “new behaviours are rooted in social norms and shared values” (Kotter, 1995, p. 67). The leaders must show people how the new changes have improved performance, and ensure new managers embrace and understand the change.

Change management is a process, and it is essential to have leaders to guide this process. The leaders are important facilitators of policy making (Rose et al, 2003), to enable change to be acceptable at all levels – community through to state and federal government. A challenge for all involved in project planning, and particularly for managers, is to support and encourage leadership within local areas as well as in bureaucratic hubs.

**Authentic Community Leadership**

As discussed previously, this study found that WADOH has a leadership strategy which focuses on clinically based services, and limits leadership in community health. While the WADOH ‘Strategic Intent 2005-2010’ (2004) presents one priority area for Western Australia’s public health system as ‘Healthy Leadership’, it states that “we believe leadership is about guiding others to achieve our vision for WA Health” (p.2). There is no indication that ‘others’ can be involved in determining what that ‘our’ vision may be, nor be involved in creating a shared vision, both of which are necessary for successful outcomes. WADOH (2004) also stated that “expanding community participation in health leadership by increasing the number and enhancing the roles of District Health Advisory Councils”, again not including local community members. Interestingly, since this time the WA Health Operational Plan 2006-2007 (WADOH, 2005a) has been published, and adds ‘community leadership’ to the 2004 statement.
The concept of accountability is a key part of leadership. Good governance theory attaches great importance to accountability, but sometimes tends to narrowly define this within financial accountability in the management of public funds. Good leaders provide publicly available information on financial transactions, and act on people’s right to be informed. As this study has discussed, this will not occur if:

- health bureaucrats continue to show a lack of acceptance of leadership by local community members, and
- the legitimacy of those who choose to participate is not clarified with regard to representing the views of the wider community.

This study recommends a review be undertaken of the West Australian health system being led by generic managers, rather than by specialist health practitioners.

**THE IMPLICATIONS FOR PRACTICE, EDUCATION AND FURTHER RESEARCH**

While the study demonstrates the difficulties associated with applying the community planning theories into practice, it also illustrates the application of qualitative, naturalistic research methods to health and particularly to telecommunications planning research. This methodology is a departure from normative approaches common in telecommunications research.

The nature of the study, an investigation into community participation in health and telecommunications planning, required a naturalistic approach that fostered communication and decision making between participants. While the study is bounded within one case, the WADOH Telehealth Project, it is not intended to be reproduced elsewhere. Instead, it demonstrates the complexities of telecommunications and telehealth planning in Western Australia between 1998 and 2002 and illustrates the barriers and enablers to achieving participation and partnerships between local community participants, government employees, government managers and private industry.

The significance of the implications of the research derives mainly from the need to address why the outcomes of planning were not acceptable to community members in rural and remote Western Australia.
The Implications For Practice

In this study, the results of stage two of the Telehealth Project, the Site Implementation Plans (SIP) were a summary of the product of meetings to determine the social contexts, health needs and technology requirements of the study participants. The SIP demonstrated participatory planning in practice and helped to develop an understanding of the local community needs, expectations and interests in relation to telehealth. The SIP revealed a consistent interest in strengthening clinical, education and management aspects of the health system, thereby confirming the research reported in the Telehealth literature.

A major reason for the rejection of the WADOH Telehealth Implementation Plan by community based participants relates to the incompatibility between these community expectations needs and interests and the existing institutional agendas at the local and state level. At the local level, initial and follow-up interviews revealed a strong desire to improve health outcomes, to continue working with government on telehealth, and to incorporate the new applications into existing work practices. The site implementation plans for all sites revealed a consistent interest in strengthening and relocating social, clinical, education and management of health services. However at the state level, the priorities were clearly about improving hospital based services.

Community, government and industry expectations, needs and interests in relation to health practice, telehealth and rural telecommunications are summarised in Figure 5.2.
Figure 5.2: Priorities for health practice

- **Expectations, needs and interests**
  - Improve cooperation and establish partnerships
  - Improve telecommunication
  - Improve intra-regional links

**Social**
- Financial counselling
- Retirement information & advice
- Job interviews
- Weather forecasts
- Farm advice
- Grain & stock pricing
- Family links
- Legal advice
- Mothers groups
- Domestic violence counselling

**Management**
- Improved bandwidth
- Links to other services
- Unified telecommunications
- Secure networks
- Transparent costs

**Clinical**
- Improved regular access
- Support groups
- Interpreters
- Case conferences
- Peer meetings
- Patient management advice
- Psychiatry, Emergency, Geriatrics
- Discharge planning
- Assist with outlier & transfers
- Mental health

**Education**
- Clinical
- Flexible
- Professional meetings
- In-service & postgraduate
- Local secondary school
- Community programs
A major flaw in planning practice was to view the stage two community consultation phase as solely another means of obtaining information (similar to a literature review) which can be accepted or discounted depending on the opinion of project managers. The action research method chosen for this study enabled participants to develop and extend their own understanding of a situation, and formulate actions that can have immediately applicable results (Stringer, 1996; Lincoln & Guba, 1985; Wadsworth, 1998), with “consultation should be viewed as extending throughout a project cycle rather than as a one-off exercise” (Citizens and Civics Unit, 2002, p.6).

The outcomes of the Telehealth Project were not acceptable to the community because the bureaucrats did not see the value of involving community members in open dialogue, or devolving power and decision making. They did not acknowledge that the knowledge, expertise and resources of the involved community are often the key to successful research.

Parker et al (2003) found that it is;

“possible to operationalise community based performance to guide health agencies. For example, to assess employees’ skills and provide training, or examine how policies enhance or impede community participation............ And to hold health agencies accountable by ensuring indicators of ‘community-basedness’ in policy are encompassed.

The question remains - how do we operationalise the right to health for people residing in rural and remote areas? The passive dissemination of information on a strategy is insufficient to change practice. It requires upper level management support at both strategic and operational levels, and a change management strategy. This study has described the need for government policies and programs that are planned collaboratively and in partnership, and consider process factors to ensure quality of health outcomes. This is diagrammatically presented as Figure 5.3.
This study clearly revealed fragmented stories and different interpretations, therefore it is important to ask; “what makes one interpretation more persuasive than any other” (Throgmorton, 1996, p.38). Project planning should be driven by the nature of the community’s problem, and defined in a way that means the problems can be solved. Dialogue is therefore crucial between all groups involved in planning, and it is essential to clearly define the roles and relationships between these groups.

Throgmorton (1996; 1991) suggests three main groups in planning for technological applications. These roles have been modified to better reflect this study, and are: telecommunications and technology experts; politicians and government bureaucrats; and key persons and community members. The three groups converge to create new discourse and reveal new roles required for successful planning. The relationship between these roles is diagrammatically represented in Figure 5.4.
The newly emerged roles are:

- Community advocate – liaises between the community members and technical experts to transform technical jargon into simpler language, and ensure community participation in decisions about technical activities.
- Political advocate - liaises between the community, and politicians and government, to reconcile the institutionally bound view with view of the problem put forward by the community. The political advocate ensures community participation in the production of planning reports.
- Policy analyst - liaises between the technical experts and government to enable the scientific knowledge to be included in government plans.
- Active or Central Mediator.

These three liaison roles refer back to the central mediator whose role is to communicate regularly with the community advocate, political advocate and the policy analyst and to feedback action plans to all participants. Throgmorton (1996) sees the role of the Active Mediator as one that mediates discourse, and thereby helps participants to recognise and accept diversity – that is, accepting the traditionally dominant discourse of science and politics, as well as the voice of the community. However, Habermas (1987) and Foucault (1982) disagree and argue that all discourse is influenced by power structures, and that “critical reason” is the method for clarification.

The practice of planning for health and telecommunications includes people from many disciplines and interests, and stories which hold significant power for each of the story-tellers. The ‘Active Mediator’ or ‘planner’ or ‘key researcher’ must become the central point and advocate for the participants enabling; information transfer, consultation, participation and empowerment to take place.
Figure 5.4: Main roles in planning for health and telecommunications
[Modified source: Throgmorton, 1996].
The Implications For Future Research

The literature review indicated that there was an abundance of literature on community participation in health, but none that addressed the continuum of community participation from a technological context. The research must address technical (telecommunications networks, standards), terminology of health, change management, clinical and social issues. On the basis of this, future research should include:

- Research into community participation for technology addressing all levels of the participation spectrum – inform, consult, involve, collaborate, partner, and empower.
- Further research is needed to examine how to achieve a more balanced power relationship.
- Research should be directed at strategies to increase participation in social and civic activities by people with low incomes and low education.
- Examples of good and best practice in community engagement.

Future research in this subject needs to be scientifically robust in order to assist policy makers in reaching informed decisions about the appropriateness of technology. It also requires a collaborative approach between all levels of community, health professions, government, universities, and private industry.

The problems encountered during the study illustrate that planning in this scale is more complex than at a smaller scale. While it is argued that participation is applicable to state wide planning, it is clear why descriptions of small scale participatory planning projects are more numerous and why there are far fewer discussions on larger, state wide participatory planning projects in practice. That is, that the size of participatory planning project matters.

The Implications For Education

The findings indicated that government employees frequently dismissed community opinions, and were motivated by personal agendas. This occurred not only in relation to rural and remote community members and health professionals,
but with colleagues in other government departments. The implications for education from this study are as follows:

- Ongoing education directed to the practical application of community participation as an important component of health sector reform.
- Education content at both the undergraduate and postgraduate level addresses government, private and public partnerships for improving community health.
- Education is an outcome of which an indicator is community supporting life-long learning.

**CONCLUSION**

This study is original and significant as it developed an understanding of community participation in health and telecommunications planning through a case study, the West Australian Department Of Health Telehealth Project. The project demonstrated the influences on community participation in planning, and that the issue is different for different people in different regions. It also demonstrated the disjunction between local needs, expectations and interests, and government agendas and policies. These issues are at the very core of the debate about community participation in planning: how can we have a holistic approach to planning and local health systems, while engaging communities for future sustainability.

This study has identified the need to bridge the gap between community identified needs and policy implementation. If technology is going to be used to advance community health it should be done through community participation strategies that include authentic partnerships and leadership, and the decentralisation of health decision making. To enable this to happen, the West Australian Department of Health requires a remodelling of community health services and a supporting change management strategy.
Appendices

I. Stage One – Health participants identified by key person/s and project team
II. Stage One – Community participants identified by key person/s and project team
III. Stage Two - HDWA Telehealth Project Information Sheet
IV. Stage Two - Participant engagement – open ended questions
V. Stage Two - List of rural and remote area participant interviews
VI. Stage Two - List of additional interviews
VII. Stage Two - List of other meetings attended
VIII. Stage Three - Survey Introductory letter
IX. Stage Three - Survey Participant Information Sheet
X. Stage Three - Survey Informed consent & Consent form
XI. Stage Three - Survey questions – rural and remote area participants
XII. Stage Three – Interviews with senior managers – open ended questions
XIII. University Human Research Ethics Committee Approval
XIV. Consent from HDWA & OIC for use of data
Appendix I:
Stage One - Health participants identified by key person/s and Telehealth project team

SITE A
Visiting medical practitioner

SITE B
Visiting medical practitioner
Nurse Practitioner

SITE C
Community health
Community mental health
Public Health
Silver Chain (Private community health)
Aged Care
Regional administration
Regional Information Technology
Hospital nursing staff
Hospital medical officers
Allied health
Health educators
Medical imaging
General Practitioners
Visiting medical specialists
Ambulance services

SITE D
Community health
Royal Flying Doctor Service
Public Health Unit
Silver Chain
Aboriginal Medical Service
Mental Health Unit
Aged Care
Health Service administration
Hospital information technology
Hospital nursing staff
Hospital medical officers
Allied health staff
Hospital / health educators
Community health staff
Medical Imaging
Pathology
Appendix II:
Stage One - Community participants identified by key person/s and Project team

SITE A
Shire council members
Shire members (identified at the information evening)
Telecentre
District health service
District High School

SITE B
Interested community members
Telecentre staff
Community youth representatives
District School

SITE C
Local member of parliament
Community services representatives
Indigenous representatives
Recreation and leisure
Crisis services representatives
Local member of parliament

SITE D
Detention Centre
Nursing mother’s association
Occupational Health and Safety staff
Community Policing
Women’s support service
Ambulance Service
Women’s refuge
TAFE
Member of parliament
Aboriginal community workers
Relationships Australia
Domestic violence action group
Rehabilitation services
Disability workers
Community drug and alcohol workers
Support groups – diabetes, mastectomy, SIDS
Ethnic group services
Community legal service
Appendix III:
Stage Two - HDWA Telehealth Project Information Sheet

HDWA Letterhead

INFORMATION SHEET *
TELEHEALTH PROJECT

Information is being gathered by the Health Department of Western Australia (HDWA) to implement and evaluate telehealth technologies in your site. This information will be used to establish health service criteria for assessing the benefits and costs of using telehealth technologies; and to use for comparative analysis in 12 months.

Overall, the focus of this planning is to collect your views on health service delivery in your area, with the aim of determining if the addition of telehealth technologies will create:

- an enhanced existing health service;
- a new health service; and/or
- reduce the cost of health service delivery.

That is, to ascertain if it will result in more appropriate, acceptable, efficient and higher quality service provision, and/or increase access to appropriate services.

Potential direct benefits of Telehealth for consumers and providers are; increased access to specialist services, increased satisfaction with health service, reduced waiting times, reduced travel costs, and the opportunity to remain in a familiar setting with established social support networks. A potential indirect benefit of Telehealth is increased access for staff to educational opportunities and peer support.

No personal information will be collected, and anonymity and confidentiality of information will be observed during and after the study. Results will not be published in a form which permits identification of individual participants. Participation in the groups is voluntary and will be viewed as constituting consent. You may withdraw at any time with no adverse consequences.

Each participant or group will be allocated with an identification number. The code to this will be held by the planning team and kept separate from all data relating to the study. All data will be archived under secure conditions for five years.

Further information can be gained by contacting either:

Angelita Martini or Dr. Jann Marshall
phone - (08) 9222 4026 phone - (08) 9222 2349
Angelita.Martini@health.wa.gov.au Jann.Marshall@health.wa.gov.au

Telehealth Development Unit
Health Department of Western Australia
PO Box 8172
Stirling Street Perth, WA, 6849

* HDWA Telehealth brochure will be distributed with the information sheet.
Appendix IV:
Stage Two – Participant open ended interview questions

HEALTH DEPARTMENT OF WESTERN AUSTRALIA
TELEHEALTH DEVELOPMENT UNIT

PHASE ONE: SITE PLAN FOR TELEHEALTH

Community Participants/ Community Group Meeting Questions

1. Introductions
2. Overview of Telehealth
3. Overview of Social model of health
4. Discuss the potential direct and indirect benefits of telehealth for site/community.
5. Identify and reflect on the services/activities currently undertaken (as a provider or consumer).
6. Identify any gap in services delivered or required.
7. Identify telehealth related issues or problems.
8. Resolve the problems identified, and formulate solutions.
9. Identify telehealth applications.
10. Other issues.
11. Prepare summary sheet of each meeting, and validate findings with each group.
Appendix V:
Stage Two – List of rural and remote area participant interviews

The following is a schedule of meetings convened during the study with participants in rural and remote areas. Meetings were facilitated by the key researcher, and in some cases two additional group facilitators.

<table>
<thead>
<tr>
<th>SITE</th>
<th>TYPE OF MEETING</th>
<th>PARTICIPANTS</th>
<th>NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site A</td>
<td>Focus group</td>
<td>Rural community members</td>
<td>3</td>
</tr>
<tr>
<td>Site A</td>
<td>Focus group</td>
<td>Rural community members</td>
<td>7</td>
</tr>
<tr>
<td>Site A</td>
<td>Telephone</td>
<td>Rural and remote health professionals</td>
<td>2</td>
</tr>
<tr>
<td>Site A&amp;B</td>
<td>Interview</td>
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<td>1</td>
</tr>
<tr>
<td>Site B</td>
<td>Focus group</td>
<td>Rural community members</td>
<td>7</td>
</tr>
<tr>
<td>Site B</td>
<td>Interview</td>
<td>Rural and remote health professional</td>
<td>1</td>
</tr>
<tr>
<td>Site C</td>
<td>Interview</td>
<td>Rural and remote health professionals</td>
<td>2</td>
</tr>
<tr>
<td>Site C</td>
<td>Focus group</td>
<td>Rural and remote health professionals</td>
<td>3</td>
</tr>
<tr>
<td>Site C</td>
<td>Focus group</td>
<td>Rural and remote health professionals</td>
<td>3</td>
</tr>
<tr>
<td>Site C</td>
<td>Interview</td>
<td>Rural community member</td>
<td>1</td>
</tr>
<tr>
<td>Site C</td>
<td>Interview</td>
<td>Rural community member</td>
<td>1</td>
</tr>
<tr>
<td>Site C</td>
<td>Interview</td>
<td>Rural community member</td>
<td>1</td>
</tr>
<tr>
<td>Site C</td>
<td>Interview</td>
<td>Rural and remote health professionals</td>
<td>2</td>
</tr>
<tr>
<td>Site C</td>
<td>Focus group</td>
<td>Rural and remote health professionals</td>
<td>5</td>
</tr>
<tr>
<td>Site C</td>
<td>Interview</td>
<td>Public servant</td>
<td>1</td>
</tr>
<tr>
<td>Site C</td>
<td>Focus group</td>
<td>Rural and remote health professionals</td>
<td>3</td>
</tr>
<tr>
<td>Site C</td>
<td>Focus group</td>
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<td>10</td>
</tr>
<tr>
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<td>4</td>
</tr>
<tr>
<td>Site D</td>
<td>Focus group</td>
<td>Rural and remote health professionals</td>
<td>8</td>
</tr>
<tr>
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<td>2</td>
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<tr>
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<td>Focus group</td>
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<td>Site D</td>
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<td>Interview</td>
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<td>1</td>
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<tr>
<td>Site D</td>
<td>Interview</td>
<td>Public servant</td>
<td>1</td>
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<td>Focus group</td>
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<tr>
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<tr>
<td>Site D</td>
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<td>3</td>
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<tr>
<td>Site D</td>
<td>Interview</td>
<td>Rural community member</td>
<td>1</td>
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<tr>
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<td>Rural community members</td>
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Appendix VI:
Stage Two – List of additional interviews

The following individual and group interviews were undertaken with key metropolitan participants involved with the Telehealth Project.

<table>
<thead>
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<th>DATE</th>
<th>TYPE OF MEETING</th>
<th>PARTICIPANTS</th>
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<td>17/5/1999</td>
<td>Workshop</td>
<td>6 community organisation representatives</td>
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<td>2x 5 day</td>
<td>Equipment trials</td>
<td>Metropolitan hospital clinicians</td>
</tr>
<tr>
<td>2x 5 day</td>
<td>Equipment trials</td>
<td>Metropolitan hospital clinicians</td>
</tr>
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<td>10/10/2000</td>
<td>Interview</td>
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<td>13/10/2000</td>
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<td>4/12/2000</td>
<td>Interview</td>
<td>Public servant, community</td>
</tr>
</tbody>
</table>
Appendix VII:
Stage Three - Survey Introductory letter

1 November 2000, on University letterhead.

Dear

As I am sure you are aware, the Health Department of Western Australia (HDWA) has been planning for the implementation of Telehealth services to remote and rural areas of Western Australia.

This survey is being conducted, with the permission of HDWA, to determine the contribution rural and remote community members have made in the planning process, as well as the acceptability and appropriateness of the HDWA Telehealth Site Implementation Plans.

Involvement with this survey is an extension of your original participation with HDWA interviews. To assist you in completing the survey, please find enclosed a copy of your original feedback during the planning process, and the HDWA Telehealth Implementation Plan. Also enclosed are a Participant Information Sheet to retain, and Informed Consent Form to be returned.

To facilitate follow up, each survey questionnaire is allocated an identification number. Confidentiality is guaranteed as the list of corresponding names can only be accessed by myself. Additionally, all information will be reported without name or other identifying information being used.

Completion of the questionnaire should take about 30 minutes, and I would appreciate if you could return it and the consent form by 25 January 2001. A reply paid envelope is enclosed for your convenience. If you would prefer to respond to an electronic copy, please email quokka@ses.curtin.edu.au.

If you have any concerns, or require further information, please do not hesitate to contact me on 0412660369.

Thank you for completing the questionnaire.

Sincerely,

Angelita MARTINI
PhD student, Curtin University of Technology
Appendix VIII:
Stage Three - Survey Participant Information Sheet

PARTICIPANT INFORMATION SHEET

This study reviews the planning process toward implementation of telehealth services to rural and remote Western Australia by the Health Department of Western Australia (HDWA).

Phase One – Initial HDWA planning consultations, and the development of the HDWA Site Implementation Plan.

Phase Two – Review of the outcomes to date of the telehealth planning process.

Phase One:
Information was gathered by the HDWA to establish plans for the implementation and evaluation of telehealth technologies in your site. HDWA planned to use this information to establish health service criteria, develop a Site Implementation Plan, and for comparative analysis in 12 months.

Overall, the focus of this phase was to collect views on health service delivery in designated areas, with the aim of determining if the addition of telehealth technologies would create; an enhanced existing health service; a new health service; and/or reduced costs of health service delivery. That is, to ascertain if it would result in more appropriate, acceptable, efficient and higher quality service provision, and/or increase access to appropriate services.

HDWA considered the potential direct benefits of Telehealth for consumers and providers to be: increased access to specialist services, increased satisfaction with health services, reduced waiting times, reduced travel costs, and the opportunity to remain in a familiar setting with established social support networks. A potential indirect benefit of Telehealth is increased access for staff to educational opportunities and peer support.

Phase Two:
A survey questionnaire will be distributed to those who took part in phase one of the project, to determine; the level of community contribution during the planning process; the adequacy of the HDWA Telehealth Implementation Plan; and degree of cooperation between government and communities.

In the survey, no personal information will be collected, and anonymity and confidentiality of information will be observed during and after the study. Results will not be published in a form that permits identification of individual participants. Participation is voluntary. You may withdraw at any time with no adverse consequences.

Each participant will be allocated with an identification number. The code to this will only be accessible to the principal researcher, and kept separate from all data relating to the study. All data will be archived under secure conditions for five years.

Further information can be gained by contacting:

<table>
<thead>
<tr>
<th>Angelita Martini</th>
<th>or</th>
<th>Professor Robin Watts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone: 0412660369</td>
<td></td>
<td>Telephone: 9266 7457</td>
</tr>
<tr>
<td><a href="mailto:quokka@ses.curtin.edu.au">quokka@ses.curtin.edu.au</a></td>
<td></td>
<td><a href="mailto:wattsr@planet.curtin.edu.au">wattsr@planet.curtin.edu.au</a></td>
</tr>
</tbody>
</table>
Appendix IX:
Stage Three - Survey Informed consent & Consent form

INFORMED CONSENT
PHASE TWO: PLANNING FOR TELEHEALTH

Title of Research: Telehealth Technologies In Rural And Remote Areas Of Western Australia: Exploration of a social model of health framework.

Principal Researchers:
Ms. Angelita Martini  
Doctor of Philosophy candidate  
Curtin University Of Technology, Bentley WA 6037

Supervisor:
Prof. Robin Watts  
Professor  
Curtin University Of Technology, Bentley WA 6037

Dear participant,

The Health Department of Western Australia (HDWA) has been planning for the implementation of telehealth services to remote and rural areas of Western Australia (WA).

The purpose of this study is threefold: Firstly, to determine what contribution telehealth can make to improving access to health services for rural and remote residents of WA; secondly, to develop a health service planning model for telehealth and evaluate the model; and thirdly, to develop a framework for the use of health related communications technologies within a social model of health.

For this study, you are invited to participate in a survey questionnaire of key people involved in the telehealth planning process. Questions will focus on your perceptions of the telehealth project planning process and outcomes.

Participation in this study is voluntary and you may withdraw at any time. Any information supplied in the questionnaire remains your property and will be returned at your request. All information is confidential.

If you have any concerns about this study or if you require further information, please do not hesitate to contact Ms Angelita Martini on 0412660369.
CONSENT FORM
PHASE TWO: PLANNING FOR TELEHEALTH

I ……………………………………….. understand the above mentioned study.

I agree to participate in the above study, which is to be conducted by Ms Angelita Martini. I understand that by completing the questionnaire, I am giving permission for the information to be used in the study.

I understand that I am free to not answer questions. I also understand that I am free to withdraw from participation at any time. I agree that research data gathered for the study may be published, provided my name or other identifying information is not used.

I have been provided with a contact number if I wish to ask any questions related to this study.

………………………………….  ………………………………….
Participant     Investigator

……………..     …………….
Date        Date
Appendix X:
Stage Three - Survey questions (rural and remote area participants)

Appendix X is presented as a list of questions for the purpose of this dissertation.

Perception of community participation/consultation during planning for telehealth.
   a) What was your initial understanding/expectation of the contribution you were to going to make to the planning process?
   b) Was this perception accurate?
   c) Did the consultation process provide adequate opportunity for your needs to be expressed?
   d) Did the consultation process provide adequate opportunity for you to give feedback on the interview data collected?
   e) If so, did the feedback reflect the issues raised by you during the consultation process?
   f) What do you perceive to have been the potential barriers to consultation during the planning phase?

Adequacy of the Telehealth Implementation Plan proposed by HDWA to meet resolutions identified in planning process.
   a) Does the telehealth site implementation plan proposed by HDWA address the issues raised by you during the planning phase?
   b) Were you provided with adequate opportunity to give feedback on the HDWA telehealth site implementation plan?

Acceptability of the Telehealth Implementation Plan proposed by HDWA.
   a) Is the HDWA telehealth site implementation plan acceptable to you? Please explain your response.

Appropriateness of the service to be delivered (allocative efficiency).
   a) Does the plan offer a substitution to services that are more acceptable to consumers or providers?

Access to appropriate services (equity).
   a) Does the plan offer an increase in the AVAILABILITY of services? E.g. range of services, reduced waiting time
   b) Does the plan offer an increase in the ACCESSIBILITY to services? E.g. local venues, less distance to travel
   c) Does the plan offer an increase in the ACCEPTABILITY of services? E.g. anonymous access, gender and cultural oriented
   d) Does the plan offer an increase in the AFFORDABILITY of services?

Level of co-operation between individuals, organisations and government structure during the planning process.
   a) Were the lines of communication clear and open?
   b) Did you feel the process was fair? (Procedural justice)
   c) Did you feel the outcomes were fair? (Distributive justice)
   d) Did you feel confident in the government process? If no, please explain when and why your confidence was diminished.
Appendix XI:
Stage Three – Evaluation Interview Questions with senior WADOH managers

Semi-structured interview questions with key managers involved in initial Project planning:

**Project Planning:**
How did the project begin?
How were the sites identified?
What were originally identified as the main stakeholder groups? How were these prioritised?
What influence did telecommunications have on the project planning?
What do you perceive to be the greatest influences (positive or negative) on planning?

**Level of co-operation between individuals, organisations and government structure during the planning process:**
Were the lines of communication clear and open?
Did you feel the process and outcomes were fair?
Did you feel confident in the government process? Please explain
Appendix XII: University Human Research Ethics Committee approval
MINUTE

To: Ms Angelita Martin, Chair, Professor Robin Watts, Nursing
From: Max Page, Executive Officer, Human Research Ethics Committee
Subject: PROTOCOL APPROVAL - EXTENSION HR 132/98
Date: 9 December 2002

The Human Research Ethics Committee acknowledges receipt of your Progress Report for the project TELEHEALTH TECHNOLOGIES IN RURAL AND REMOTE AREAS OF WESTERN AUSTRALIA: EXPLORATION OF A SOCIAL MODEL OF HEALTH FRAMEWORK.

Extended approval for this project is for the year to 8/10/2003.

Your approval number remains HR 132/98. Please quote this number in any further correspondence regarding this project.

Thank you.

Jane Lenth
Maxwell Page
Executive Officer
Human Research Ethics Committee


Basingstoke: Macmillan Press.

Health Department of Western Australia. (2003). The country service review: The way forward for country health services in Western Australia. Perth: Health Department of Western Australia.


Health Department of Western Australia. (1998b). Regional Epidemiological Health Data. Perth: Health Department of Western Australia.

Health Department of Western Australia. (1998c). Patient Assisted Travel Scheme. Perth: Health Department of Western Australia.

Health Department of Western Australia. (1997). The Future of Telehealth in Western Australia. Perth: Health Department of Western Australia.


Development of the Calgary Regional Health Authority public participation framework. *Family and Community Health*, 23(1), 66-78.


