# The ACT Nurse Practitioner Project

Final report of the Steering Committee

July 2002

# Letter to the Minister from the Steering Committee

Jon Stanhope
Minister for Health

Dear Minister

It is with great pleasure that I present to you the completed report from the Steering Committee on the implementation of the nurse practitioner role in the ACT.

The report represents the culmination of two years of consultation, debate, planning, researching and exploring by a wide range of ACT stakeholders.

Presented in the report are four nurse practitioner models that were trialed in the ACT in order to provide a greater diversity and improved access to services for specific client groups who were identified as having unmet clinical health care needs. Each model was operationalised through a framework of close support from a multi-disciplinary clinical team. The report details the methodology and findings of the trial and presents recommendations that support the formal implementation of the nurse practitioner level of service in the ACT health care system.

I commend the report of the Steering Committee to you for consideration and seek your endorsement by signing the attached foreword.

Yours sincerely,

Joan C Scott
Chair
Nurse Practitioner Steering Committee
27 September 2002

GPO Box 825 Canberra ACT 2601
Website: www.health.act.gov.au

# Foreword



The development of the nurse practitioner role in the Australian Capital Territory (ACT) aims to enhance health care delivery and is in keeping with international trends, where extended nursing roles have been developed and practiced for some time. It is also in keeping with directions being pursued elsewhere in Australia, with nurse practitioners being implemented in the public sector of New South Wales, South Australia and Victoria.

With the ever-changing health care demands, nurses in the ACT face a challenging and exciting future. There will be a need for flexibility and diversity within this extended clinical role to keep pace with health care change. The numerous opportunities that this will afford nurses functioning at this level will include making a positive difference to people's lives and having satisfying and rewarding careers.

The trial of the nurse practitioner role in the ACT has evolved to address concerns of individuals and communities, including their demands for diverse options in health care, improved service access and increased flexibility in models of health care delivery. To achieve this level of optimal care it is essential to have a collaborative workforce. The trial has tested the potential of nurse practitioners to improve the accessibility of services for patients and carers, enhance health care delivery and produce quality outcomes. The success of the trial demonstrates that this is the case.

The release of this report represents the first phase of the process for implementing the role of nurse practitioner in the ACT. The Steering Committee has developed an educational and clinical framework for implementing the role, following extensive consultation with stakeholders. I believe this report provides an excellent framework to progress this role and I thank the members of the Steering Committee for their work in producing this report.

I believe that the nurse practitioner role in the ACT is an exciting, innovative development and I look forward to its implementation.

Jon Stanhope

minister for health

# Contents

# Steering Committee of the ACT Nurse Practitioner Project

## Acknowledgments

*A range of people and organisations contributed to the Australian Capital Territory (ACT) Nurse Practitioner Project. The contribution of individuals and the support of the groups they represent are gratefully acknowledged.*

| | |
|---|---|
| Susan Killion* | Executive Director |
| *Inaugural Chairperson* | Health Strategy and Acute Services<br>ACT Department of Health and Community Care |
| Joan C Scott | Manager |
| *Continuing Chairperson* | Workforce, Health Policy and Reform<br>ACT Department of Health and Community Care |

| Members | (and the organisations they represent) |
|---|---|
| Leanne Aitkin* | The Canberra Hospital |
| Heather Austin | Calvary Health Care ACT |
| Rosanne Bettiens | School of Nursing, University of Canberra |
| Verity Bondfield* | The Canberra Hospital |
| Prue Borman | Health Care Consumers' Association |
| Christine Brill | ACT Branch, Australian Medical Association |
| Peter Collignon | Australian Salaried Medical Officers Federation |
| Betty Craig* | Health Care Consumers' Association |
| Mark Dykgraaf* | ACT Division of General Practice |
| Colleen Duff | Australian Nursing Federation — ACT Branch |
| Tina Emery | National Capital Private Hospital |
| Jan Fletcher | Royal College of Nursing Australia |
| Anne Gardner* | The Canberra Hospital |
| Glenn Gardner | The Canberra Hospital and University of Canberra Research Centre for Nursing Practice |
| Jim Horan | Royal Australian College of General Practitioners |
| Jill Iliffe | Past member of the New South Wales Nurse Practitioner Project |
| Hilary Lang | Council on the Ageing |
| Mary Martin | John James Memorial Hospital |
| Carmel McQuellin | ACT Community Care |
| Heather McDonald* | ACT Community Care |
| Donna Mowbray | The Canberra Hospital |
| Lamia Nakhal* | Royal Australian College of General Practitioners |
| Margaret Proctor | Nurses Board of the ACT |
| Sue-Anne Redmond* | National Capital Private Hospital |
| Peter Warfe | ACT Division of General Practice |

* Past members

## Membership of subcommittees

| | | |
|---|---|---|
| **Legislation subcommittee**<br>*The subcommittee also consulted with George Stefanoff, Chief Pharmacist, ACT Department of Health and Community Care.* | Jan Fletcher | Royal College of Nursing, Australia |
| | Laurie Grealish | Chief Executive Officer, Nurses Board of the ACT |
| | Rhys Ollerenshaw | ACT Department of Health and Community Care |
| | Heather Austin | Director of Nursing, Calvary Hospital |
| | Joan Scott | ACT Department of Health and Community Care |
| | Melissa Burton | ACT Department of Health and Community Care |
| **Communications subcommittee** | Hilary Lang | Consumer representative (Council on the Ageing) |
| | Mary Martin | Director of Nursing, John James Memorial Hospital |
| | Prue Borman | President, Health Care Consumers' Association |
| | Joan C Scott | ACT Department of Health and Community Care |
| | Leonie Harrison | Nurse Practitioner Trial Project Manager |
| | Penny Farnsworth | ACT Department of Health and Community Care<br>Media/Communications/Marketing Manager |
| **Education subcommittee** | Verity Bondfield | The Canberra Hospital |
| | Glenn Gardner | The Canberra Hospital and University of Canberra<br>Research Centre for Nursing Practice |
| | Jill Illiffe | Past member of the New South Wales<br>Nurse Practitioner Project |
| | Betty Craig | Health Care Consumers' Association |
| | Roseanne Bettiens | University of Canberra School of Nursing |
| | Colleen Duff | Australian Nursing Federation – ACT Branch |
| **Nurse practitioner selection panel** | Joan C Scott | ACT Department of Health and Community Care |
| | Margaret Proctor | Nurses Board of the ACT |
| | Glenn Gardner | The Canberra Hospital and University of Canberra<br>Research Centre for Nursing Practice |

# ACT Nurse Practitioner Trial Investigating Team

*The ACT Nurse Practitioner Trial was funded by the ACT Department of Health and Community Care and the Nurses Board of the ACT.*

| | |
|---|---|
| Glenn Gardner<br>*Chief Investigator* | Professor of Acute Care Nursing<br>The Canberra Hospital and University of Canberra<br>Research Centre for Nursing Practice |
| Anne Gardner | Assistant Director of Nursing—Research<br>The Canberra Hospital |
| Frank Bowden | Director, Canberra Sexual Health Centre<br>The Canberra Hospital |
| Margaret Proctor | Chairperson<br>Nurses Board of the ACT |
| Sue Alexander | Chief Pharmacist<br>The Canberra Hospital |

| Co-investigators | (nurse practitioners in training) |
|---|---|
| Robert Davis | rn, rpn, bnrsg<br>Calvary Health Care<br>Mental health consultation–liaison nurse practitioner |
| Sharron Jordan | rn,bnurs, pgdip Critical Care Paediatric Nursing *<br>Military nurse practitioner<br>Canberra Area Medical Unit (camu)<br>FAIRBAIRN |
| Lorna MacLellan | rn, mn, scm, Crit Care Cert<br>Wound care nurse practitioner<br>The Canberra Hospital |
| Elissa O'Keefe | rn, bappSci (Nursing), Cert Sexual and Reproductive Health<br>Sexual health nurse practitioner<br>Canberra Sexual Health Centre, The Canberra Hospital |

| Support team | (Research Centre for Nursing Practice) |
|---|---|
| Leonie Harrison* | Project Officer |
| Philippa Keating | Research Assistant |
| Carina van Diermen | Research Assistant |
| Robert Cook | Research Assistant |
| Rosanne Bettiens* | Lecturer, University of Canberra |

| Expert reference group for review and validation of medication formulary | |
|---|---|
| Nicholas Glasgow | Associate Professor, Canberra Clinical School,<br>Division of General Practice |
| Jane O'Connell | Director, Action Plan Coordination Unit, New South Wales Health |
| Andrew Brown | Pharmacist, Conder ACT |

* Past members

# Glossary

**Advanced practice nurse**

Advanced practice nursing defines a level of nursing practice that utilises extended and expanded skills, experience and knowledge in assessment, planning, implementation, diagnosis and evaluation of the care required. Nurses practising at this level are educationally prepared at postgraduate level or equivalent, and may work in a specialist or generalist capacity. However, the basis of advanced practice is the high degree of knowledge, skill and experience that is applied within the nurse–client relationship to achieve optimum outcomes through critical analysis, problem solving and accurate decision making. Nurses working at an advanced practice level are able to work autonomously, initiating the care process, as well as in collaboration with other health care professionals. Advanced practice nursing forms the basis for the role of nurse practitioner (rcna 2000).

**Clinical protocol**

The clinical protocol is a guide to appropriate practice to meet a specified range of needs for a specified patient group. The clinical protocol is based upon principles rather than directions for practice. A series of clinical protocols provide a mechanism for defining and communicating the scope of practice for the specific nurse practitioner model.

**Clinical viva**

A clinical examination conducted primarily to assess competence to practise. This assessment method provides the examiners with considerable scope for testing the candidate's ability to deal with clinical events and referrals and for assessing the depth of their knowledge in key clinical problems. The examination is based upon clinical cases or scenarios with an actual patient, or a written description of a patient taken from an actual case. The student is examined orally on their approach to assessment and management options.

**Episode of care**

An episode of care describes a new consultation for a health-related problem. The episode of care ends when the health-related problem is resolved or concluded.

**Extended nursing practice**

Extended nursing practice defines a level of nursing that utilises skills and knowledge in a specific setting or specialty that is beyond the usual scope of nursing practice. Extended practice involves advanced clinical assessment including interpretation of diagnostic results, implementing and monitoring therapeutic regimes including prescribing pharmacological interventions, and initiating and receiving appropriate referrals. This extended practice is conducted according to a nursing model of health and requires appropriate legislative protection.

**Medication formulary**

This is a list of medications that has been compiled by a multidisciplinary team and verified by an expert panel that a nurse practitioner can order from. The medication formulary is consistent with relevant clinical protocols that relate to the scope of practice for a specific nurse practitioner model.

| | |
|---|---|
| Nurse practitioner | A nurse practitioner is a registered nurse that works within a multidisciplinary team. The role includes extended practice in the autonomous assessment and management of patients using nursing knowledge and skills gained through postgraduate education and clinical experience in a specific area of nursing. The role may include, but is not limited to, the direct referral of patients to other health care professionals, the prescribing of a designated and agreed list of medications, and the ordering of a designated and agreed list of diagnostic investigations. |
| Prescribing | The provision by a medical or other designated professional, after clinical assessment of a patient, of written instructions for the dispensing and administration of a drug or remedy (nhmrc 1998). |
| Recommended medication | This term was used to describe the decisions that the nurse practitioners made about medications. Under the conditions of the trial they were unable to 'prescribe'; they therefore recommended medications that were prescribed by their medical mentor. |
| Scope of practice | The scope of practice is the definition of the extent and the parameters of practice for a specific nurse practitioner model. The nurse practitioner is able to practise with autonomy and discretion within the specified scope of practice. |
| Visit | The consultation/s generated within an episode of care. Each single episode may have included a number of visits. |

# Part one Steering Committee Report

# Introduction



## Background

The core factors that determine health services are related to the health maintenance and illness care needs of the community. These needs are subject to change in response to the social, cultural and technological conditions, and the expectations of the community. A responsive health service is therefore not a static commodity, but one that incorporates and adjusts to the changing face of community needs.

The ageing of the population and the associated increasing incidence of chronic illness are exerting an influence on health service needs. In addition, the social environment generates influences that result in sectors of the community not having equitable access to health care either through lifestyle, economic, cultural or mobility factors. Contemporaneously, technological advances are providing other sectors of the community with information and expectations of health service and disease management, whilst creating the conditions for increasing specialisation of the health care workforce.

The changing nature of health service is reflected in the changing relations of health care professionals. Current demands and systems cannot support the erstwhile hierarchical, individualistic and paternalistic processes that have characterised these relationships in the past, and no single health care provider can adequately meet the complex requirements of the consumer. New approaches to health service emphasise multidisciplinary, collaborative team approaches to care. The nurse practitioner has the potential to make an important contribution to the collaborative team approach to health service.

In this environment, the nurse practitioner is emerging as a new level and type of health service that is innovative, accessible and able to respond to the health service needs of specific populations. Many studies have demonstrated that nursing offers health service that is valued and respected by the community. The nurse practitioner is able to work within a multidisciplinary team and continue this valued care through to the completion of the patient's health service experience.

The nurse practitioner has been a focus of interest from health departments in Australia since 1990. A significant amount of data and information relating to the efficacy of this role has accumulated to inform the implementation of this level of service in the health care industry. The Australian Capital Territory (ACT) has demonstrated an interest in, and a commitment to, a rigorous examination of the potential for the nurse practitioner to play a role in the ACT health service system.

## Overview

In December 1999, the ACT Department of Health and Community Care (hereafter referred to as ACT Health) initiated a comprehensive project to investigate the nurse practitioner level of health service. This project and the activities

generated to inform it were funded by ACT Health and the Nurses Board of the ACT. The Nurse Practitioner Steering Committee conducted and directed the project. The committee included a range of stakeholder organisations and health professionals. It operated on multiple levels, and the inquiry modalities used included empirical, consultative, legislative and administrative perspectives.

The steering committee gathered information from a range of sources to inform inquiry into the nurse practitioner role. These sources included subcommittees, stakeholders and a research team. A legislative subcommittee examined the legislation to identify the acts that would be affected by a legitimised nurse practitioner role. A communications subcommittee planned and conducted territory-wide information and consultation sessions. An education subcommittee advised on the experience and education requirements for the nurse practitioner. In addition, the project included an empirical investigation into the nurse practitioner level of service through the ACT Nurse Practitioner Trial. The trial was conducted by a multidisciplinary team of investigators, included three health service facilities, and was coordinated through The Canberra Hospital and the University of Canberra Research Centre for Nursing Practice. The findings from the trial were an important source of information for the steering committee in formulating its conclusions and recommendations.

The ACT Nurse Practitioner Trial investigated four nurse practitioner models of service. The initial call for expressions of interest attracted 14 submissions. From this, nine teams were invited to submit a full application, and the four models were selected from this highly competitive field. The expressions of interest came from a diverse range of health service teams, including generalist and specialist services from public and private sectors, and from tertiary and community settings across the ACT. This was an early indication of the interest in the potential for this new level of service.

The project described in this document is related to nursing, primarily because all of the applications for inclusion in the trial came from a nursing service perspective. The steering committee recognises the potential for a midwifery practitioner in the health industry and the findings and recommendations are not exclusive of midwives. The processes and systems that have been developed and recommended for the future development and legitimation of nurse practitioners in the ACT may be transferable to midwifery.

This report of the project is the result of two years of debate, planning, research and exploration of the potential of the nurse practitioner level of health service for the ACT community. It documents the process and outcome of the ACT Nurse Practitioner Project.

The report is structured into two parts:

- Part one contains the deliberations, conclusions and recommendations from the ACT Nurse Practitioner Steering Committee.
- Part two is the report of the ACT Nurse Practitioner Trial. It documents the process and outcome of the trial and includes the conclusions and recommendations from the study that were considered by the steering committee in its deliberations.

# Executive summary and recommendations



## Summary

The nurse practitioner movement has had a presence in Australia since 1990. In that time, the concept has been exerting an influence on the way health care planners think about the contributions that nursing can make to health service, particularly where there are areas of unmet health care needs and health service deficits for marginalised groups.

The Australian Capital Territory (ACT) response to this trend was twofold. In the light of the increasing currency of the title of nurse practitioner, the Nurses Board of the ACT recognised the need to protect the title through legislation. Simultaneously, and consistent with the national trend, ACT Health, through the Health Strategy and Acute Services Branch, set up the ACT Nurse Practitioner Steering Committee to investigate the feasibility and efficacy of the nurse practitioner level of service. The committee has a broad range of membership from professional and consumer health care groups.

The steering committee initiated the ACT Nurse Practitioner Trial. The aim was to conduct a trial of practice for four nurse practitioner models to advise the committee on the feasibility of the nurse practitioner role in health service delivery in the ACT, and to provide information about the impact of the role on selected outcomes. The trial was funded by ACT Health and the Nurses Board of the ACT, with support from the participating health service facilities, which provided the salaries of the nurse practitioners in the trial.

The trial was a multicentre study. Four models of health service were selected: two at The Canberra Hospital (wound care and sexual health), one at Calvary Hospital (mental health consultation–liaison), and one at the Canberra Area Medical Unit, FAIRBAIRN (military). Each was chosen from a competitive field of applications for their potential to improve consumer access to health service and the strength of its clinical support team. The selection was made by a panel from the steering committee, comprising representatives from the Nurses Board of the ACT, ACT Health and the University of Canberra. The Nurse Practitioner Steering Committee endorsed the recommendations.

The operational framework for the trial involved the nurse practitioner working with a multidisciplinary clinical support team and practising beyond the boundaries of legitimised nursing practice. This extended practice was exploratory; it was supported and monitored by a medical mentor, and guided by a vision for the role as articulated by the clinical team in their application. In essence, each of the nurse practitioner models in the trial was a process of testing extended nursing practice and collecting data related to the service.

A primary factor in the ACT Nurse Practitioner Trial was the strong commitment to sustaining a nursing model for development of nurse practitioner practice.

This enabled an examination of how the nurse practitioner level of service intersects with the ACT health care system. The development of an extended nursing model of practice enabled the introduction of a new, cost-efficient level and type of health care where there is currently a deficit.

The ACT Nurse Practitioner Trial built upon projects in New South Wales, Victoria and South Australia. However, it contributed new knowledge, including findings on the educational requirements for the nurse practitioner, and clinical protocols and medication formulary developed fom the data collected during the trial.

A detailed and extensive communication strategy was developed and implemented by the communication subcommittee. The steering committee membership ensured that peak bodies and stakeholders were fully informed of the trial and its progress, and had opportunity for input. Additionally, periodic and broadly based information dissemination was conducted through information sessions, newsletters, media releases and workshops. This information dissemination targeted both professional and community groups.

This report is submitted to the Minister for Health by the ACT Nurse Practitioner Steering Committee. The report details the methodology and findings of the trial and presents recommendations that support the implementation of the nurse practitioner level of service in the ACT health care system. In addition, the report identifies the processes of authorisation and credentialling that are necessary to:

- protect the title of nurse practitioner
- support the legal conditions for extended nursing practice
- ensure that appropriate standards of practice and education are formalised according to the expectations of the health professions and broader community.

The following recommendations are informed by the results of the investigations by the subcommittees and the findings of the ACT Nurse Practitioner Trial. They apply to both the public and private health care sectors.

## Recommendations

### 1 Formalising and implementing the role of the nurse practitioner

It is recommended that:

1.1 there be recognition of the nurse practitioner as defined in this report, as a legitimate and autonomous member of the health care team

1.2 the steering committee be reconvened to oversee the implementation of the role of nurse practitioner in the ACT.

### 2 Regulation and endorsement of the nurse practitioner

It is recommended that:

2.1 the Nurses Board of the ACT be the approved body to regulate the use of the title 'nurse practitioner'

2.2 the *Nurses Act 1988* be amended to protect the title of nurse practitioner

2.3 the use of the title 'nurse practitioner' be limited to those authorised to practise

2.4 the scope of practice, as determined by clinical protocols, and medication formulary for the specific nurse practitioner model be determined by a local, multidisciplinary team that includes at least one medical clinical specialist and at least one advanced practice nurse

2.5 the diagnostic services relevant to the scope of practice for specific nurse practitioner models be determined by a local, multidisciplinary team and be included in the model's clinical protocols

2.6 the range of referrals to general practitioners, medical specialist and allied health practitioners for specific nurse practitioner models be determined by a local, multidisciplinary team and be included in the model's clinical protocols

2.7 the medication formulary be reviewed for validation by an expert panel external to the local team, and that this expert panel include a pharmacist, at least one medical clinician and at least one advanced practice nurse

2.8 the scope of practice as determined by the clinical protocols for the specific nurse practitioner model be endorsed by the Nurses Board of the ACT

2.9 the validated medication formulary for the specific nurse practitioner model be endorsed by the Nurses Board of the ACT

2.10 the Nurses Board of the ACT establish processes to review the scope of practice and medication formulary for nurse practitioner models on renewal of nurse practitioner registration

2.11 a 'grandparenting' process be established to enable the wound care nurse practitioner, the sexual health nurse practitioner and the mental health consultation–liaison nurse practitioner who participated in the ACT trial to register as nurse practitioners with the Nurses Board of the ACT.

## 3 Educational preparation of the nurse practitioner

It is recommended that:

3.1 the minimum educational level for registration as nurse practitioner be at master's level

3.2 the Nurses Board of the ACT be responsible for accrediting masters courses for nurse practitioner education

3.3 the accreditation requirements include a curriculum with a strong and substantial clinical focus that builds upon the intellectual competencies of the advanced practice nurse, including education and experience in a clinical specialty and research practice

3.4 ACT Health provide financial support for subsequent evaluation of regulation processes and research into nurse practitioner practice

3.5 the Australian Nursing Council draw upon the educational findings of the ACT Nurse Practitioner Trial to advance progress towards a national standard for nurse practitioner education

3.6 when the Master of Nursing Nurse Practitioner course becomes available at the University of Canberra, the university recognise as

meeting the requirements for this award the nurses who participated as nurse practitioners in the ACT Nurse Practitioner Trial and who meet the prescribed prerequisites.

## 4 Professional indemnity for the nurse practitioner

4.1 It is recommended that the nurse practitioner have adequate professional indemnity insurance cover to practice within the full scope of their role.

## 5 Remuneration

5.1 It is recommended that remuneration for the nurse practitioner be commensurate with their knowledge, skills and educational attainment, and that this level of remuneration be consistent across the ACT.

## 6 Additional legislative requirements

It is recommended that:

6.1 the following acts be amended to enable the nurse practitioner to function in the role:

- *Nurses Act 1988*
- *Drugs of Dependence Act 1989*
- *Poisons and Drugs Act 1978*
- *Mental Health Act 1962*
- *Mental Health (Treatment and Care) Act 1994*
- *Prostitution Act 1992*
- *Public Health Act 1997*
- *Sexually Transmitted Diseases Act 1956.*

6.2 the following acts be amended to include the title 'nurse practitioner':

- *Birth (Equality of Status) Act 1988*
- *Children and Young People Act 1999*
- *Children Services Act 1986*
- *Guardianship and Management of Property Act 1986*
- *Health Regulation (Maternal Health Information) Act 1998*
- *Juries Act 1967*
- *Magistrates Court Act*
- *Remand Centres Act 1976*
- *Transplant and Anatomy Act 1978*
- *Tuberculosis Act 1950.*

Part two

# Report on the ACT Nurse Practitioner Trial

# 1 Exploring nurse practitioner services in the ACT

## 1.1 Background

### Introduction

Nurse practitioners have had a presence in other countries since the 1960s, and have recently emerged in Australia. Over the past decade, nurse practitioner trials have been conducted in New South Wales, Victoria and South Australia, and nurse practitioner development work is being pursued in the other states and territories.

Internationally, there is a growing body of literature that supports the introduction of the nurse practitioner level of service. Many overseas studies have indicated that the nurse practitioner delivers health care that is valued by the patient (Kinnersley et al 2000, Venning et al 2000); and has a positive effect on patient outcomes (Brown and Grimes 1995, Sakr et al 1999). A recent systematic review demonstrated that nurse practitioners can provide care equivalent to doctors at first point of contact with patients in a primary care setting (Horrocks et al 2002. Furthermore, the review indicated that patients were more satisfied with care by a nurse practitioner and that the care provided was of a high quality. However, despite the accumulating literature and the support it provides for the establishment of the nurse practitioner role, further research is needed into specific models of nurse practitioner practice and the impact of these models on health care service. The current Australian Capital Territory (ACT) trial makes an important contribution to knowledge in this area.

### Nurse practitioner level of service

The notion of an advanced practice role for nursing has generated considerable debate over the past few decades (Jones and Davies 1999, Woods 1999). The influences of the women's movement in the 1970s, the impact of tertiary education for nursing, technological advances, and health service restructuring have all had a significant influence on the changing nature of the nurse's role and scope of practice (Percival and Hamilton 1996). Nurses have embraced these changes and the opportunity they bring for 'extending the frontiers of practice' (Jones and Davies 1999: 187). However, these positive developments have not been without some accompanying obstacles. There is a confusing array of titles used to describe new and emerging nursing roles and levels of practice. Nomenclature such as advanced specialist, clinical nurse consultant, clinical nurse specialist, nurse expert and advanced nurse practitioner have all been considered as coming under the umbrella of advanced practice (Dunn 1997, Woods 1997, Woods 2000). These labels have proven to be ambiguous and have created confusion, both within the

nursing and medical professions, and for the public (Hamilton 1998, Offredy and Townsend 2000, Reveley 2001, Woods 1997). Internationally, the blurring of boundaries within titles makes the issue even more contentious. The social and political forces operating within each country impact on how these terms are used and what they actually represent (Mulholland 2001a). While the clarification of titles is complex and may continue to be debated for some time, the consensus gradually emerging is that the nurse practitioner role is evolving and developing globally as the most significant of the advanced practice roles (Reveley 2001).

For the purposes of this report, it is important to differentiate a nurse practitioner from other advanced practice roles. Definitions used in other countries and other trials carried out in Australia have focused on nurse practitioners having an advanced level of education, and working autonomously and collaboratively with other health professionals within an expanded scope of practice (Barton et al 1999, Reveley 2001). The ACT Nurse Practitioner Steering Committee examined the various definitions that were previously used and agreed on the following definition for use in the trial:

> *A nurse practitioner is a registered nurse who works within a multidisciplinary team. The role includes extended practice in the autonomous assessment and management of clients, using nursing knowledge and skills gained through postgraduate education and clinical experience in a specific area of nursing. The role may include, but is not limited to, the direct referral of patients to other health care professionals, the prescribing of a designated and agreed list of medications, and the ordering of a designated and agreed list of diagnostic investigations.*

## Nurse practitioner service

Nurse practitioners have been shown to offer a beneficial service and fill a gap in health care provision, both in the primary health care and in the acute care sectors. National and international experience demonstrates that they provide a specific service that is highly regarded (Brown and Grimes 1995, Horrocks et al 2002, Kinnersley et al 2000, Sherwood et al 1997, Venning et al 2000) and in demand (de Leon-Demare et al 1999, Hand 2001). The specific service offered by nurse practitioners provides care to many underserviced groups such as the homeless (Armstrong 2001), women and children, the elderly (Sherwood et al 1997), and rural and remote communities (de Leon-Demare et al 1999, Hegney 1997), and specialist services in acute care areas (Reveley 1998). Nurse practitioners have been demonstrated to be effective in managing common acute illnesses and injuries and stable chronic conditions (Sherwood et al 1997). Nurse practitioners have an emphasis on health promotion and assessment, and disease prevention (Brown and Grimes 1995). For example, a nurse practitioner working in Scotland co-ordinates a unique health project that seeks out homeless people, assesses and identifies their health needs, and offers them assistance (Armstrong 2001). Armstrong posits that without the services of the nurse practitioner, there would be little chance of reaching this vulnerable group using conventional health services (Armstrong 2001). A further example is provided by a recently appointed nurse practitioner who is providing primary care services to the isolated community of Wanaaring in far western New South Wales. The nurse

practitioner works as the sole practitioner in this remote area and fills a much needed role for a population who previously had limited access to health services (anf 2001, Hand 2001).

## Extended practice

Extended practice is central to the nurse practitioner role. One of the principal elements of extended practice, and one that differentiates nurse practitioners from other levels of advanced practice, is prescribing rights. Historically, this has been an exclusive domain of the medical profession, and has been one of the key factors constraining nurse practitioners from practising autonomously (Siegloff Clark 2000, Tattam 1998). The concept of nurse prescribing has been one of the most widely contentious issues surrounding the implementation of the nurse practitioner role, both within Australia and internationally (ICN 2000, Tattam 1998). The evolution of these developments is closely interwoven with the sociopolitical influences operating within each country.

## Nurse practitioners globally

### United States

The nurse practitioner role originated in the United States during the 1960s as a strategy to help improve health care in underserviced communities. The original impetus for this development was the shortage of primary care physicians (Dunn 1997). An initial program was set up at the University of Colorado to help prepare paediatric nurse practitioners to practise in an expanded role in primary health care settings (Walsh 2001, Sherwood et al 1997). It soon became evident that nurse practitioners had the potential to provide safe, effective and accessible health care for communities that previously had limited access to comprehensive health facilities (Brown and Grimes 1995).

The nurse practitioner role was quickly adopted throughout the United States, with university-based educational programs developing rapidly (Walsh 2001). Over time, the opportunities for nurse practitioners have expanded; they now include the vast majority of acute care settings, such as inpatient specialty areas and emergency departments in major centres (Sakr et al 1999, Sherwood et al 1997). Nurse practitioners are licensed in each state rather than nationally, and this has led to considerable variation in educational requirements, role limitations, and levels of autonomy and authority (icn 2000). Nonetheless, nurse practitioners have become widely accepted as a valued and essential adjunct in the American health care system (Winson and Fox 1995).

### Canada

The expanded role of nurse practitioners was initially perceived as a viable solution to various issues that impacted on the Canadian health care system in the 1960s, including a predicted physician shortage, controversy over the introduction of physician assistants in the United States (Bajnok and Wright 1993, cna 1993), and Canada's unique nationally funded and provincially administered system of health care administration (de Leon-Demare et al 1999). Nursing and medical organisations were initially supportive of the nurse practitioner role (cna 1993), and early evaluation studies were encouraging, demonstrating that nurse practitioners were safe, provided cost-effective care, and achieved high levels of client satisfaction (Spitzer et al 1974). However, the lack of continued support by professional bodies

and the existence of a physician surplus (contrary to earlier predictions) resulted in a failure to promote the policy and legislative changes required to fully implement the nurse practitioner role (cna 1993, de Leon-Demare et al 1999).

During the late eighties, the nurse practitioner role re-emerged as an important contributor in the provision of health care services in Canada. This was in response to a further perceived shortage of rural and remote area primary care physicians, health care reforms (Bajnok and Wright 1993, de Leon-Demare et al 1999), and increasing emphasis on preventative primary care (cna 1993). However, factors such as the provincial nature of the Canadian health care system, and significant regional differences in policy, funding, legislation and education have profound implications for the successful implementation of the nurse practitioner role (de Leon-Demare et al 1999).

### United Kingdom

Similar factors to those evident in the United States and Canada paved the way for the implementation of nurse practitioners in the United Kingdom in the 1980s. These included a shortage of doctors and the need to reduce junior doctors' hours (Harris and Redshaw 1998), cost containment in health service provision, a more skilled nursing workforce and the need to provide improved access to health care services (Horrocks et al 2002). Following the nurse practitioners' success in delivering valuable, accessible health care in primary care settings, the potential for nurse practitioners to work in acute care settings was soon realised, and an increasing demand for their services followed.

However, several issues have hindered the development of nurse practitioners in the United Kingdom. The most significant of these is the lack of consensus on the definition of the nurse practitioner role (Barton et al 1999, Reveley 2001), a problem further complicated by the development of the role of the clinical nurse specialist, or CNS (Reveley 2001, Roberts-Davis and Read 2001). Some authors have suggested that there is an overlap in nurse practitioner and cns roles (Roberts-Davis and Read 2001), while others believe the two roles are conceptually and fundamentally different and thus should be recognised as two distinct entities (Reveley 2001). A related issue is that the nurse practitioner title is not legally recognised or protected by the United Kingdom Nursing and Midwifery Council (Le-Mon 2000). Also, there are no definitive educational requirements for nurse practitioners in the United Kingdom (Crumbie 2001, Mulholland 2001b), and there is a concern by some that nurse practitioners are moving towards a biomedical model, with their main focus being on the technical and medical aspects of patient care (Barton et al 1999; Walsh 1999a, 1999b).

### New Zealand

In New Zealand, nurses in some sectors of the country were practising at an advanced level as independent nurse practitioners before formalisation and standardisation of the role (Anonymous 2001a). In 1998, a ministerial taskforce on nursing gave support to the development of the nurse practitioner role and recommended that the Minister for Health instruct the nursing council to formalise and validate specific competencies linked to the title of nurse practitioner (Ministerial Taskforce on Nursing 1998). A joint statement was released in May 2001 by the Ministry of Health and the Nursing Council of New Zealand, announcing the new nursing qualification of nurse practitioner (Ministry of Health 2001a). The framework for the nurse practitioner role is incorporated in a policy document that outlines the regulation of nurse practitioners in New Zealand, including

competencies, educational requirements and processes for assessment by the council (ncnz 2001).

Following the release of that document, the council called for applications from nurses for nurse practitioner status. The approval process requires completion of a portfolio demonstrating evidence of meeting competencies, reference checks and an interview. The applicant must submit documented evidence that a nursing council-approved clinically focused master's degree or equivalent has been satisfactorily completed (ncnz 2001).

The applicant given nurse practitioner status may seek approval for prescribing rights (as an optional component of the nurse practitioner role) following the successful completion of an approved pharmacology course within their defined scope of practice as part of their master's program (ncnz 2001). In October 2001, nurse practitioners in aged care and child family health who met the competency and training requirements as set out by the nursing council were given legal sanction for limited prescribing rights. In December 2001, a neonatal nurse from Waikato Hospital became New Zealand's first nurse practitioner (ncnz 2002). Currently, many other nursing applicants seeking nurse practitioner status are undergoing the approval process (Anonymous 2001b).



## Nurse practitioners in Australia

The above section provided an overview of the international experience in development of the nurse practitioner role. In Australia, three states have undertaken nurse practitioner trials in the past decade, building on, and informed by, the international experience.

The concept of expanded roles for nurses as nurse practitioners has been debated in Australia for over a decade (Offredy 2000). The debate has been informed by overseas experiences and also takes account of Australia's unique health care features. Such features include the geographical isolation and inequitable distribution of health services in the rural and remote areas compared to the cities, difficulty recruiting and retaining doctors in the rural and remote areas (Hegney 1997), and Australia's much publicised poor record in the provision of health services to its indigenous population, the Aboriginal and Torres Strait Islander communities (Hand 2001).

Nurses in many rural and remote areas of Australia have reportedly been practising within an expanded role similar to that of a nurse practitioner, but without legal sanction and formal recognition (Hegney 1997, Offredy 2000). Presumably, this has occurred because they are often the sole health practitioner servicing these areas. The formalisation of the nurse practitioner role was therefore viewed as important for these nurses (Hegney 1997). These factors have all contributed to the context in which the nurse practitioner movement in Australia has evolved.

### New South Wales

In 1990, initiated by the then Minister of Health, New South Wales established a project to investigate the nurse practitioner role (Offredy 1999). The project involved three stages, with the first stage examining the role and function of the nurse practitioner in New South Wales (NSW Health Department 1992). In 1992, a multidisciplinary working party was formed by the New South Wales Health

Department to review the stage one report and formulate some recommendations (stage two) (NSW Health Department 1993). Ten local pilot projects (stage three) were subsequently established to explore the nurse practitioner role, specifically looking at the issues of cost, safety, feasibility, quality and effectiveness. The working party recommended a range of practice contexts for the pilot projects, with the final selection including remote areas, general practice, and area and district health services. Upon completion of the ten pilot projects, the stage three final report was published, with the evidence demonstrating that nurse practitioners were safe, effective and feasible in their roles, and provided a quality service in the range of settings that were examined (NSW Health Department 1995, Offredy 2000).

The results of the stage three report culminated in legislative changes to several acts in 1998, including the *Poisons and Therapeutic Goods Act 1966*, the *New South Wales Nurses Act 1991*, and the *Pharmacy Act 1964* (Offredy 2000). The nurse practitioner title was guaranteed protection following announcement of the *New South Wales Nurses Amendment (Nurse Practitioner) Act 1998*. This ensured that nurses required authorisation by the Nurses Registration Board of New South Wales (nrbnsw) before using the title of nurse practitioner. The applicants applying for nurse practitioner status undertake an assessment process and must meet strict criteria, including a relevant postregistration qualification or its equivalent, demonstrated clinical experience and evidence of advanced clinical competence. Re-authorisation is required every three years (nrbnsw 2000, Reid 2001).

One of the provisions recommended by the stage three report is that a nurse practitioner position should only be created if a locally agreed need is first established by a local interdisciplinary group of stakeholders (Chiarella 1998). Once this need has been established, a set of clinical guidelines is compiled and endorsed by the local multidisciplinary team. The guidelines determine the boundaries of practice for the nurse practitioner position including a limited prescription formulary, diagnostic investigations and medical referral procedures. The health department then reviews the proposal and gives approval (Reid 2001).

In New South Wales, there are currently nine nurse practitioners who have received authorisation for nurse practitioner status (NSW Health Department 2001). However, this authorisation is entirely separate from the approval of nurse practitioner positions. To date, four nurse practitioner positions have been approved and twenty nurse practitioner positions are currently 'approved in principle' (NSW Health Department 2001). The clinical guidelines relevant to each of these 'approved in principle' positions are currently being formulated before final consideration and approval by the Director-General of Health (Dunn 2002, NSW Health Department 2001). It is planned that approximately forty positions will be created in the public sector of rural and remote New South Wales (Harulow 2000, Reid 2001).

The progress of nurse practitioner implementation in New South Wales has met with some resistance. Certain sectors of the medical profession initially had some concerns regarding the concept of independent nurse practitioners (Chiarella 1998, Siegloff Clark 2000, Tattam 1998). These initial concerns were particularly related to nurses being given the power to diagnose and prescribe (Tattam 1998). While many in the medical profession have since accepted nurse practitioners,

others continue to oppose their introduction (McDonald 2000, Moait 2000), believing they threaten the quality of health services in rural areas (Moait 2000) and will subsequently reduce the availability of rural doctors in Australia (McDonald 2000).

The above concerns strongly resemble those raised in other countries. However, there are other aspects of the New South Wales model that are more innovative than previous nurse practitioner models internationally, which will help the success of the nurse practitioner role in Australia. First, the recommendations for accreditation and education, as discussed above, are more comprehensive than for programs developed in other countries (Chiarella 1998). Second, the collaborative nature of the nurse practitioner model (Reid 2001) and the importance of maintaining a nursing focus within the role (Chiarella 1998) have been highlighted. Finally, unique to the nurse practitioner model in the Australian context is the recognition of 'a range of roles that revolve around a central core of expert clinical nursing judgement' (Hand 2001: 19). Hand (2001) argued that this is an important attribute of the Australian model and unlike the United Kingdom, where nurse practitioners have very fixed roles and scopes of practice within which they operate. It is these special features of the New South Wales project that have been incorporated in the other state models described in the next section.

## Victoria

In Victoria, interest in the development of the nurse practitioner role followed the need for more diverse options, improved service access and increased flexibility in models of health care delivery (dhs 2000). It was also recognised that many nurses in Victoria had been practicing at an advanced level within an extended role for many years (nvb 2001).

In 1998, the Minister of Health initiated the Victorian Nurse Practitioner Taskforce following the proceedings of a two-day workshop held the previous year to explore the establishment of the nurse practitioner role. The aim of the taskforce was to provide a framework for implementation and recognition of the nurse practitioner role in the Victorian health system (dhs 2000). The taskforce addressed issues of educational preparation, best practice, credentialling, legal liability and professional indemnity, changes to existing legislation, and financial considerations related to the role (nvb 2001). The project included community and practitioner consultation, and extensive examination of eleven nurse practitioner models of practice (demonstration projects) (dhs 2002). In 1999, the taskforce reported on their recommendations, representing the first phase of the process of the implementation of the nurse practitioner role in Victoria (dhs 2000). In contrast to the New South Wales nurse practitioner model, the planned implementation of the nurse practitioner role in Victoria would not be restricted to the public sector or specific geographical areas (dhs 2000).

In September 2000, following the release of the nurse practitioner phase one report, the Nurses Board of Victoria (nvb), in conjunction with the Victorian Department of Human Services, established the Nurse Practitioner Advisory Committee (nvb 2001). This committee consists of representatives from key stakeholders and was formed to identify the various elements and processes involved in the implementation of the nurse practitioner role. The committee reviewed issues surrounding the endorsement and accreditation of courses, transition period arrangements, continuing competence and the development of

national standards for nurse practitioners. Its recommendations are set out in a recently released publication, 'Pre-implementation report: the nurse practitioner' (nbv 2001).

*The Nurses (Amendment) Act 2000* protects the title 'nurse practitioner', specifies the requirements for endorsement on the register, and authorises the prescribing of a limited range of drugs and poisons by suitably qualified and experienced advanced clinical nurses (Trasancos 2002). In Victoria, there are presently no accredited courses specifically for nurse practitioner endorsement. However, nurses may apply for nurse practitioner status on the strength of extensive clinical experience and recognition of prior learning, which form part of the endorsement process (Trasancos 2002).

Currently, phase two of the Nurse Practitioner Project has been implemented in Victoria, with eighteen models of practice funded to date. Nurse practitioner models in other clinical practice areas are also being targeted and a call for submissions for the development and evaluation of these models is in progress in 2002 (dhs 2002).

### South Australia

South Australia introduced a nurse practitioner project at a similar time to the Victorian nurse practitioner developments. In 1996, the South Australia Department of Human Services (dhs) initiated a project to develop the role of the nurse practitioner (sadhs 1999) and appointed a Nurse Practitioner Project Advisory Committee. Following a two-year period of detailed consultation with the key stakeholders, and representation from five reference groups, the nurse practitioner project report was released in October 1999. The report contains 32 recommendations regarding the establishment of the nurse practitioner role. It addresses the main issues and changes in regulation, legislation, authorisation, education and policies that are required to enable nurses to legitimately practise at an advanced level (sadhs 1999, Mahnken 2000).

The project has now entered phase two, the implementation phase, directed by the Steering and Professional Advisory Committees (Dunn 2001). The state government has approved a clinical and admitting privileges process for nurses, as set out in a report released in July 1999 (sadhs 1999). The Nurses Board of South Australia has protected the title of nurse practitioner, and has developed ten standards for nurse practitioner practice. The dhs and the Nurses Board are collaborating to develop a process for authorisation of nurse practitioner prescribing (Dunn 2002). However, this authorisation will only apply to those nurse practitioners who specifically apply for prescriptive authorisation and submit an approved formulary (Willis 2002).

### Western Australia

In 1997, the government of Western Australia's commitment to provide access to quality health care services for all Australians was the catalyst for the proposal by the Commissioner of Health to formally implement the role of the remote area nurse practitioner (Health Department of WA 2000). In 1998, an operational framework for the proposed introduction of nurse practitioners was established. The committee recognised that many nurses in rural and remote areas, who were often the sole primary health care provider for the community, were already functioning outside the legislative and traditional nursing boundaries of their scope of practice. The need to formalise and legitimise the extended and diverse range of roles within their practice was therefore acknowledged.

In April 2000, following an extensive review assisted by four project teams, the steering committee released a report for the first phase of the Remote Area Nurse Practitioner Project. This report made seven recommendations related to registration, employment conditions, education, accreditation, clinical protocols, legislative changes, and implementation for remote area nurse practitioners (Health Department of WA 2000). The recommendations include the following: that the regulating legislation (*Western Australian Nurses Act 1992*) be amended to make the title 'nurse practitioner' protected under the act, and that nurse practitioners be required to complete an appropriate postgraduate diploma that has been accredited by the Nurses Board of Western Australia (Health Department of WA 2000).

As a result of this report, seven acts and regulations were identified as requiring legislative change (B Cosgrove, Western Australia Department of Health, pers comm, April 2002). They are currently with the Parliamentary Council for drafting (Dunn 2002). It is expected that the relevant acts will be legislated shortly (B Cosgrove, Western Australia Department of Health, pers comm, April 2002). Following these legislative changes, a steering committee will work towards the implementation of the role of the nurse practitioner within Western Australia (Dunn 2002).

While the initial focus of phase one was on 'designated remote area sites' for nurse practitioners, the recommended operational framework for phase two has been expanded to include 'designated area sites' of Western Australia other than solely remote areas. These sites will be designated by the Director-General in consultation with the Chief Nursing Officer (Health Department of WA 2001). The drafting instructions for the nurse practitioner legislation have been reviewed to align them with the government's commitment to introduce comprehensive nurse practitioners (C Gallagher, Western Australia Department of Health, pers comm, June 2002). Tenders for an educational program to be delivered at postgraduate level have recently been advertised (B Cosgrove, Western Australia Department of Health, pers comm, April 2002).

### Northern Territory

The Northern Territory has been assessing the nurse practitioner developments in other states of Australia (Mahnken 2000). In 1999, a feasibility study on nurse practitioner roles was conducted (G Williams, Northern Territory Department of Health, pers comm, April 2002), which included consultation with practitioners and stakeholders and a cost–benefit analysis (Mahnken 2000). Following this study, a proposal for an implementation trial was put forward, but the funding was never granted and the project did not proceed (G Williams, Northern Territory Department of Health, pers comm, April 2002).

However, many nurses are working in advanced practice roles, where they are responsible for prescribing drugs and ordering diagnostic tests. Many of these nurses are practising in solo community posts in remote areas; they follow standard treatment protocols and occasionally work beyond these protocols according to their clinical judgment. The Northern Territory Department of Health and Community Services endorses the protocols and covers these nurses through vicarious liability arrangements. Currently, there is no position in the Northern Territory referred to as nurse practitioner, and the Nurses Board has not protected the title (G Williams, pers comm, 29 April 2002).

**Queensland** The Queensland Government has made a commitment to investigate and trial appropriate models of nurse practitioner for Queensland (L Chandler, Queensland Health, pers comm, May 2002; Dunn 2001). A steering committee is being established to oversee the development and trial of such models (L Chandler, pers comm, 24 June 2002). These will complement existing services including nurse-initiated supply of medications in designated areas, nurse-initiated X-rays and the provision of pap smear services (L Chandler, Queensland Health, pers comm, June 2002).

**Tasmania** The Department of Health and Human Services (dhhs) has recently approved a project to explore the scope of the nurse practitioner role (Dunn 2002). The initial project team consists of members from the dhhs, the Tasmanian School of Nursing and the Nurses Board of Tasmania. This team will provide the basis for further discussion regarding the role of the nurse practitioner in Tasmania (F Stoker, Tasmanian dhhs, pers comm, June 2002).

## Conclusion

The widespread development of the nurse practitioner level of health care on both the national and international level has attracted the interest of decision makers in health service in the ACT. The Nurses Board of the ACT was interested in formalising and therefore protecting the title of nurse practitioner. Health service planners were interested in exploring the contribution that the nurse practitioner could make to improve the provision of health care. The ACT serves the health care needs of the local population and is also a referral centre for southeast New South Wales. As such, it must provide a broad range of inpatient, outpatient and community services, and specific health services to meet the special needs of marginalised groups. It is therefore imperative that the health service industry in the ACT ensures that current legislation keeps abreast of the changing context of health care in the interests of health professionals and the patients who rely on these health services.

# 1.2 Trial of practice methodology

## Study design

The ACT Nurse Practitioner Trial was established to explore the nurse practitioner level of service in the ACT health system. This involved a trial of practice for four nurse practitioner models. The period of data collection for the trial was 10 months, during which time the nurse practitioners adopted the multiple roles of clinician, student and co-researcher. A standard methodology was used across all four models with a centralised coordination of all aspects of the trial including data management.

Specifically, the aim of the trial was to investigate the feasibility of the nurse practitioner role in health service delivery in the ACT and to provide information about the impact of the role on selected outcomes. These aims were defined by the following research objectives:

- to investigate selected nurse practitioner models according to the dimensions of the role and the scope of practice
- to identify the impact of nurse practitioner service in the ACT on health care outcomes specifically in relation to access, safety, and clinical effectiveness
- to identify the changes required at the level of education, policy and legislation in the ACT to incorporate the nurse practitioner level of service delivery into the health care system
- to investigate the educational requirements of a nurse practitioner to inform curriculum development
- to contribute to the growing body of knowledge about the nurse practitioner role and its impact on the Australian health care environment.

This section will report on the methodology used to meet these objectives.

## Process for selection of nurse practitioner models

A selection process was established and advertised widely throughout the ACT to recruit and select four nurse practitioner models to the trial. Full applications were received from nine areas of health service. All applications were of a high standard of feasibility. The following criteria were used to evaluate the applications and each criterion was equally weighted.

1 Application addressed all required specifications.

2 The proposed model was feasible in terms of:
   - institutional support
   - clinical support
   - eligibility of nurse practitioner candidate.

3 The proposed model was efficacious in terms of:
   - meeting a health care need
   - conforming to a collaborative or team approach to health care
   - being sustainable
   - being of benefit to the community.

4 The proposed model promoted professional nursing in terms of:
   - being patient focused
   - being applicable to other Australian settings
   - having the potential to expand nursing knowledge.

The four models selected for inclusion in the trial scored highly across all criteria. These models were:

- Sexual health nurse practitioner. The sexual health nurse practitioner model was based at the Canberra Sexual Health Clinic (cshc) at The Canberra Hospital. In addition to providing sexual health screening and education at the clinic, the nurse practitioner conducted a sexual health outreach program for sex workers, intravenous drug users and men who have sex with men. The service, supported by a variety of health and community agencies, provided specialist health care in community settings for these at-risk groups.
- Wound care nurse practitioner. The wound care nurse practitioner model was based at The Canberra Hospital. This service was identified as an area of need. The nurse practitioner provided expert wound management care and advice to patients in this tertiary care setting, and postdischarge advice in consultation with medical practitioners and community nurses. The nurse practitioner also established and conducted a nurse-led wound clinic.
- Mental health consultation–liaison nurse practitioner. The mental health consultation–liaison nurse practitioner was based at Calvary Health Care, including Calvary Private Hospital. In this model, the nurse practitioner provided a consultative role to staff and patients in the general ward and units as well as providing a clinical service in the emergency department. This position established a service that identified and met the mental health needs of those patients who have poor access to established mental health services.
- Military nurse practitioner. The military nurse practitioner model was based at the Canberra Area Medical Unit—FAIRBAIRN as part of the area health service for the Australian Defence Force. This primary health care model focused on health screening and health promotion for service personnel. Military nurses have traditionally been called upon to practise in an extended capacity. The model was designed to produce data to inform legitimation of this extended practice.

It should be noted that the military nurse practitioner model failed to complete. This was primarily due to major difficulties in developing the nurse practitioner scope of practice within a nursing model. These difficulties could not be overcome within the time-frame of the trial.

Each model had a well-defined area of health service, was strongly supported by a multidisciplinary health care team, and included a nurse practitioner candidate who had relevant education and experience in a specialised area of nursing practice. For the duration of the trial the nurses in these models were considered as and titled ‘nurse practitioner in training’ (hereafter referred to as nurse practitioner).

## Process for trial of practice

The nurse practitioners were employed by the participating institutions. Their week consisted of four days of clinical service and one day of structured education.

### Clinical service

Each nurse practitioner worked as a member of a multidisciplinary team that also functioned as the clinical support team. They provided service to their patient group that was an extension of the nurses' role as currently determined by legislation. The nurse practitioners' extended practice was reviewed and supported by each team's medical officer and specialist nurse, and these reviews were occasions for clinical learning sessions. Whilst working within a team, each nurse practitioner functioned autonomously. All patients seen by the nurse acting in the capacity of nurse practitioner gave informed consent, and all clinical activities conducted were recorded as data. For some of the models, additional patients who did not or could not consent to be research participants received care from the nurses in the capacity of advanced practice nurses. Limited data on these patients were retained to demonstrate patterns of exclusion.

### Structured education

On one day each week, the four nurse practitioners worked with two of the investigators to generate data on the educational requirements of the nurse practitioner role, and to participate in formal teaching and learning activities. The methodology and findings of this aspect of the trial are reported in detail in Section 2.



## Recruitment process

Subjects for the nurse practitioner trial were those clients who came under the care of each of the nurse practitioners during the course of their nursing work, and who gave informed consent to be treated as part of the trial. The number of research subjects was therefore determined by the size of the patient population at any given time.

Information posters about the trial were displayed in clinical areas where potential clients were located. These posters, as well as model-specific information handouts, were developed by the nurse practitioners in collaboration with the investigators before commencement of the trial. Recruitment of clients was also achieved through referral from other health professionals, departments and clinical areas. The process of informed consent is described more fully below under 'Ethical issues'.

## Data collection

Data were collected from the four nurse practitioner service sites over a 10-month period. According to the individual model, patient recruitment to the trial was scaled back when necessary, towards the end of the data collection period, to enable nurse practitioner management to be completed and desired outcomes to be attained. The military nurse practitioner component of the trial was discontinued after nine months for the reasons cited above.

A generic data set incorporating key aspects of the nurse practitioner service that were common across all four models was established. This data set had commonalities

with the format used in the New South Wales and Victorian trials, with a view to contributing to a potential national nurse practitioner database. Copies of all data collection instruments are given in Appendix 1. The data that were collected relating to all projected outcomes in the trial included:

- demographic data relating to the patients included in and excluded from nurse practitioner service (see Generic data sheet — Appendix 1.1)
- clinical practice review, incorporating ongoing formative evaluation of the nurse practitioners' skills and ability in assessment and management decisions, for intact episodes of care (see Clinical review sheet — Appendix 1.2) (these data informed the development of the clinical protocols and medication formularies for each nurse practitioner model)
- details of therapies, diagnostics and referrals recommended by the nurse practitioner (these data informed development of the clinical protocols and medication formularies for each nurse practitioner model)
- data on patient outcomes including planned and unplanned re-presentation; adverse events; and improvement in symptoms, functional status or self-management (see Clinical outcomes sheet — Appendix 1.3)
- nurse practitioner clinical service survey results (Appendix 1.4)
- consumer satisfaction survey results (Appendix 1.5)
- data from weekly focused workshops and nurse practitioners' clinical journals (these data informed the educational outcomes of the trial).

The nurse practitioners were responsible for generating the above data from each contact with a consenting patient. These contacts were categorised as either an episode of care or a visit. The episode of care described a new consultation for a health-related problem. The follow-up consultation generated by the initial episode was termed a visit. Depending upon the model, each episode of care may have included a number of visits. Each nurse practitioner had a weekly, onsite meeting with the trial manager, who gathered the week's accumulated data sheets for entry into the database. The meeting also provided an opportunity to discuss and resolve any issues related to patient recruitment and data collection.

## Data analysis

Analysis of the aggregated data from the generic data set utilised descriptive statistics to identify the processes and outcomes of the nurse practitioner episodes of care across the four models. The analysis provided statistical information related to the demographics of patients of the nurse practitioner service; patterns of therapies, diagnostics and referrals used by the nurse practitioners; and patient outcomes.

The data also inform the findings that relate to defining the specific dimensions and scope of practice for each of the four models in the trial. The qualitative and statistical data were triangulated and interpretively examined in development of the clinical protocols and medication formulary for each model. These protocols and formulary were further examined and refined by the clinical support team in each model. The medication formularies were then subject to review and subsequent endorsement by a multidisciplinary expert panel that was external to

the Nurse Practitioner Project (see Appendix 2). This process is reported in detail in Section 3 of this document. Similarly, analysis of the data relating to the educational outcomes of the trial is fully reported in Section 2.

This section of the report is primarily concerned with findings from the trial that are generic across all models. Data were analysed in order to identify, describe and categorise changes and extensions to established nursing roles and the impact of these on existing services.

## Ethical issues

The trial was approved by the ACT Human Research Ethics Committee, the Australian Defence Force Human Research Ethics Committee and the Calvary Health Care Human Research Ethics Committee. Appendix 3 gives examples of information sheets and consent forms.

The following issues were addressed to protect the safety and privacy of patients who participated in the trial.

### Informed consent

All potential nurse practitioner patients were supplied with an information sheet and oral explanation of the trial. This explanation included the information that giving consent implied a willingness for that client's demographic and clinical information, as collected by the nurse practitioner, to be included in the research. Only consenting patients received nurse practitioner initiated management.

### Confidentiality

Demographic and clinical information was included in data collection. All patient data were de-identified and coded. Consistent with the requirements of the three ethics committees, all research data are stored in a locked filing cabinet in the Research Centre for Nursing Practice. Electronically stored data are password protected. Data used in reports and publications are de-identified and aggregated.

### Legislation

Nurse practitioners are not currently licensed to practise in the ACT. Aspects of the extended role of the nurse practitioner, such as prescribing, referral, ordering of diagnostic tests and some treatments, lie outside the current legislative framework for nursing practice. During the course of the trial, these activities were monitored, supported and reviewed by the specific model's clinical support team; the legal requirements for these services were met by the medical mentor in the team.

## Limitations of the trial methodology

The methodology chosen for this project is the design most suited to capture the complexity and scope of data required to meet the research objectives. Investigation into a new kind of health service or intervention is usually guided by the standard of the randomised controlled trial. However, the strict control and protocol requirements of this experimental design are inconsistent with the range of factors that impinge on the practice settings involved in this project. Additionally, there is no identified scope of practice for the nurse practitioner level of service in the ACT; nor are there the legal privileges to authorise and protect this practice. Until the role of the nurse practitioner is fully explored, described and legitimised, the

experimental research approach is neither possible nor meaningful. A further limitation to the project was a degree of resistance from sectors of the medical profession to the concept of nurse practitioners. Whilst this resistance was not universal, it did limit the scope of the project to those areas where medical support was available. In the ACT there is considerable interest in, and support from, medical doctors for nurse practitioner projects in the acute care settings and the military sector.

## Summary comments on trial methodology

This section has described the approach taken to investigate a trial of practice for nurse practitioners in the ACT. It is anticipated that if or when the nurse practitioner becomes incorporated into health service, a sustained evaluation program will be instigated. This future program will include a range of research approaches to investigate specific practice outcomes. The program will also include a cost-effectiveness analysis, which was deemed inappropriate and unachievable in the design of the current trial. Meanwhile, the findings of this trial are not intended to be generalised to all Australian health care settings. Rather, the information that is produced will describe the nurse practitioner service, formulate the scope of practice and medication formulary for each model, identify the educational requirements for nurse practitioner preparation and provide information to the steering committee in formulating recommendations on nurse practitioner service for ACT Health.

# 1.3 The delivery and outcome of nurse practitioner service

This section reports findings of the trial related to the nurse practitioner role and its impact on selected health services in the ACT. Data from individual models are used in comparisons to highlight generic elements.

## Client details

### Sample

Of the 318 clients invited to participate in the trial across the four models, 16 refused to consent. Table 1 shows the breakdown of consents and refusals per model.

Table 1: Number of clients consented and refused per model

| Model | Consented | Refused |
|---|---|---|
| Mental health | 123 | 14 |
| Military | 61 | 1 |
| Sexual health | 76 | 1 |
| Wound care | 42 | 0 |
| Total | 302 | 16 |

Concerns about confidentiality were the main reason for refusal (seven clients). Other clients were either too ill or too distressed, or in one case too intoxicated, to give consent. The one refusal for the military model was a client who preferred to see a male health care practitioner.

Written consent was obtained from 185 clients (61%) and verbal consent from the remaining 117 (39%). Verbal consent was the preferred means of consent for sexual health clients, with 56 clients (74%) choosing to consent by this means. Fifty-eight mental health clients (47%) also chose to consent verbally. These figures for consent were to be expected given the sensitivity and stigma attached to these areas of health care.

The majority of clients (97%, n = 294) consented in their own right. For the remaining eight clients (3%), consent was given by a parent, spouse or offspring.

### Location

Each of the models operated from a central base, with the nurse practitioners seeing clients from a variety of service areas within those settings.

The role of the mental health consultation–liaison nurse practitioner was to provide a consultative role to staff and patients in the wards, units and emergency department of Calvary Hospital. The majority of clients in this model (66%, n = 81) were seen in the emergency department, the remainder (34%, n = 42) in various wards.

The military nurse practitioner operated from the medical centre at FAIRBAIRN Airforce Base, providing primary care with health screening and health promotion for Australian Defence Force (adf) personnel. Almost all clients (95%, n = 58) were seen at the base medical centre. Another three clients (5%) were seen in the outpatients department of Duntroon Hospital.

The sexual health nurse practitioner provided sexual health screening, treatment and education at the cshc, where 62 clients (82%) were seen. A major function of this model was to trial a sexual health outreach program. During the trial the nurse practitioner established a clinic in the central business district and visited several brothels. Fourteen clients (18%) were seen in this outreach program.

The wound care nurse practitioner was based at The Canberra Hospital and provided expert wound management care and advice to patients and staff. She also provided post-discharge advice in consultation with medical practitioners and community nurses, and participated in a multidisciplinary wound clinic. The nurse practitioner was asked to see clients in a variety of settings. The majority (48%, n = 20) were seen in the wards; 15 (36%) were seen as outpatients, and the remainder in other departments of the hospital.

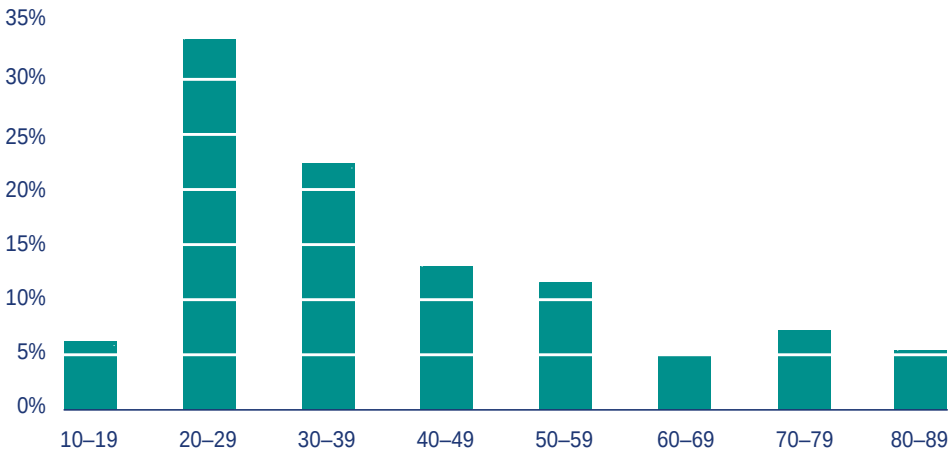
## Sex and age

There was an almost equal ratio of males (52%, n = 157) to females (48%, n = 145) in the total client group, but the distribution varied in different models. The most notable difference was in the military model, where 84% of clients were male, reflecting the mostly male population on the airforce base. Clients ranged in age from 11 to 90, with a median age of 34.5. Table 2 shows the sex distribution and age range statistics for the four models. Figure 1 shows the spread of age groups across the total client population.

Table 2: Sex distribution and age range for all models

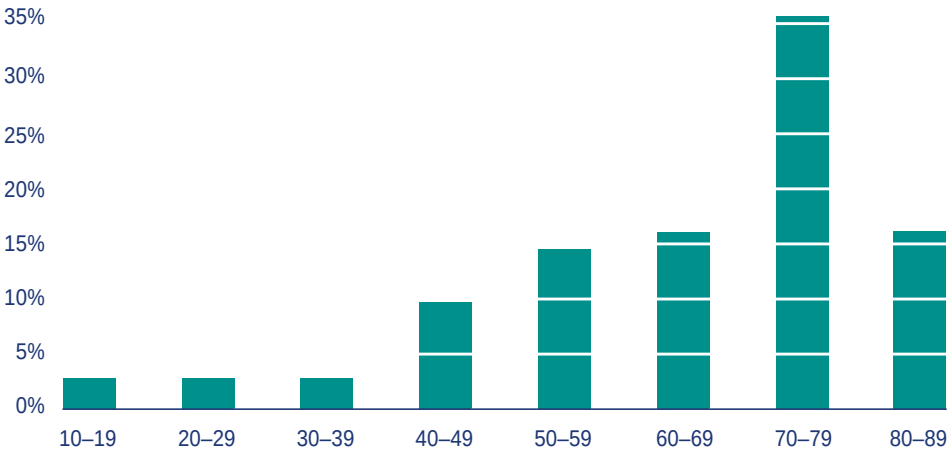
| | Sex distribution | | Age range | |
|---|---|---|---|---|
| Model | Male (%) | Female (%) | Median | Range |
| Mental health | 43 (35) | 80 (65) | 33 | 15–90 |
| Military | 51 (84) | 10 (16) | 33 | 20–54 |
| Sexual health | 45 (59) | 31 (41) | 28 | 18–58 |
| Wound care | 18 (43) | 24 (57) | 71 | 11–88 |
| Total clients (n = 302) | 157 (52) | 145 (48) | 34.5 | 11–90 |

Figure 1: Total clients by age group



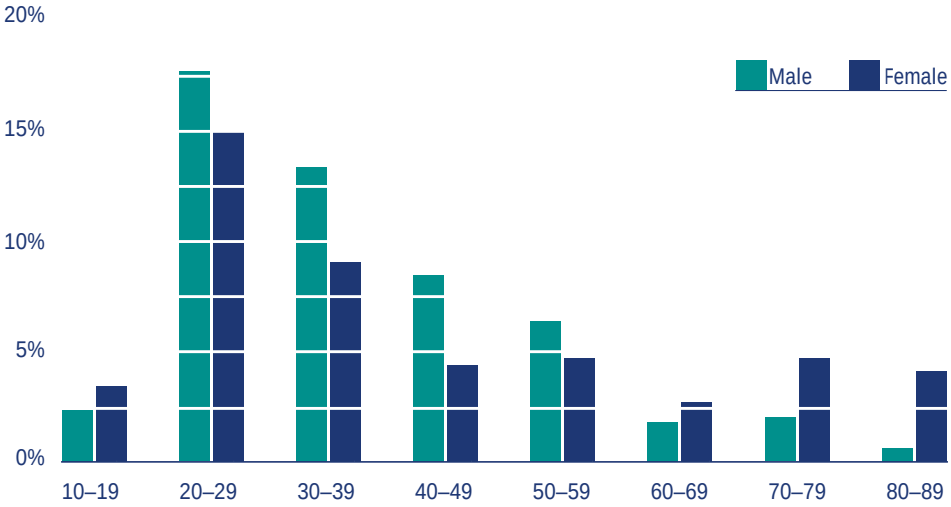

The age ranges in the mental health, military, and sexual health models were similar. However, the client population for the wound care model was significantly older, giving a graph that is almost a mirror image of that for the total client population (see Figure 2).

Figure 2: Wound care clients by age group




The ratio of males to females was generally consistent across the age groups. The largest discrepancy was in the 40–49 age group, where there were twice as many males (8%, n = 25) as females (4%, n = 13) and in the 70–79 and 80–89 age groups, where females outnumbered males. Figure 3 compares the sex ratios of the different age groups.

Figure 3: Ratio of males to females by age groups in the total client population




**State**

The majority of clients (88%, n = 266) were residents of the ACT; the remainder came from New South Wales (11%, n = 33), Queensland (1%, n = 2) and Victoria (n = 1).

**Indigenous status**

Only one person identified as being of Aboriginal (but not Torres Strait Islander) origin. The response for two clients was not stated. The remainder (299) identified as of neither Aboriginal nor Torres Strait Islander origin.

**Preferred language**

The majority of clients (96%, n = 291) identified English as their preferred language. For the remaining 11 clients, the preferred language was German, Greek, Hungarian, Mandarin, Romanian or Thai. The sexual health nurse practitioner found language to be a barrier in the brothels, where a number of sex workers were from Asian countries and many had little or no command of English.

Interpreters were used for consultations with three clients. The interpreters were Hungarian, Mandarin or Thai.

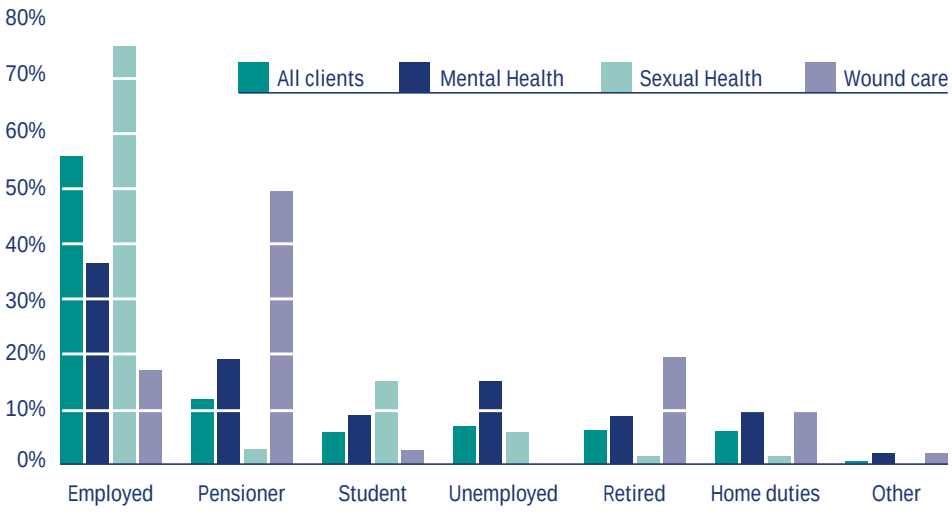
## Employment

One hundred and seventy clients (56%) were employed at the time of their consultation. Forty-six clients (15%) were pensioners; the remaining clients identified themselves in the following categories: student (8%, n = 23), unemployed (8%, n = 23), retired (6%, n = 19), home duties (6%, n = 18) and other (1%, n = 3).

Employment status varied across the models. The military nurse practitioner saw only currently employed service personnel, so 100% of clients in this model were employed at the time of consultation. The rate of employment in the sexual health model was 75%, in the mental health model 37% and in the wound care model only 17%. Mental health had the highest percentage (15%) of unemployed clients. The wound care model recorded the highest percentage (50%) of pensioners compared to mental health (19%) and sexual health (3%), and the total client population (15%), reflecting the older age group of the wound care client population.

Figure 4 shows the comparison of employment status between the total client population and the individual models (excluding the military model, where 100% of clients were employed).

Figure 4: Comparison of client employment status




## Patient status

One hundred and ninety-six clients (65%) elected to be treated as public patients. All clients in the military model came under the ADF health system, where the categories of public and private do not apply. This group constituted 20% (n = 61) of the total client population. Overall, 40 clients (13%) had private patient status. The remaining clients were from the Department of Veterans' Affairs and the Transport Accident Commission. Table 3 shows the patient status for each model (excluding the military model).

Table 3: Patient status of client population by model (excluding military)

| Patient status | Mental health (%) | Sexual health (%) | Wound care (%) |
|---|---|---|---|
| Public | 83 (67) | 75 (99) | 38 (91) |
| Private | 40 (33) | 0 | 0 |
| Department of Veterans' Affairs | 0 | 1 (1) | 3 (7) |
| Transport Accident Commission | 0 | 0 | 1 (2) |

## Knowledge of service

Only 51 clients (17%) indicated prior knowledge of the nurse practitioner service. This had been obtained by word of mouth (53%, n = 27), newspaper articles (25%, n = 13), posters (8%, n = 4), and a variety of other means, including the Royal Australian Air Force newspaper, the Sex Worker Outreach Program and work colleagues.

## Source of referral

Nurse practitioners received referrals for 168 clients (56%), the majority (97%, n = 162) coming from other health professionals within the institutions where the nurse practitioners were based. Since the role of the nurse practitioner was to work with other health professionals as part of a collaborative team, these 'referrals' may more properly be described as consultations undertaken as part of the integrated care provided for the clients. This was particularly the case for the mental health nurse practitioner and the wound care nurse practitioner, whose roles were to provide specialist care to various service areas in their respective hospitals.

The category 'other health professionals' included emergency department and ward doctors, medical and surgical registrars and midwives. The sexual health nurse practitioner made one referral to the mental health nurse practitioner. The mental health nurse practitioner received four referrals from general practitioners (GPs) and the sexual health nurse practitioner received one GP referral. 'Other' referrals included mental health agencies and the Sex Worker Outreach Program. Table 4 shows the breakdown of referrals to the nurse practitioners.

Table 4: Source of referral to nurse practitioners

| Source of referral | Number | % |
|---|---|---|
| Nurse | 99 | 59 |
| Other health professional | 37 | 22 |
| Specialist medical officer | 16 | 10 |
| Allied health professional | 6 | 3 |
| General practitioner | 5 | 3 |
| Other | 5 | 3 |
| Total | 168 | 100 |

## Health services used by clients in previous 12 months

In all, 262 clients (87%) indicated that they had accessed some kind of health service in the 12 months prior to seeing the nurse practitioner. This represented almost all clients for the mental health (98%) and wound care (98%) models. A high percentage (93%) of military clients also accessed health services during this period, although the majority of this generally fit and healthy young population (77%) saw a GP as part of a regular check-up. Of the sexual health model clients, 44 (58%) accessed a health service during this period.

Of the services accessed by clients, 231 visits (49%) were to GPs. Some clients accessed more than one health service, including specialists, hospital, community health services, and allied and other health professionals, bringing the total to 472 (see Table 5).

Table 5: Health services accessed by clients in the previous 12 months

| Health service accessed | Mental health (%) | Military (%) | Sexual health (%) | Wound care (%) | Total (%) |
|---|---|---|---|---|---|
| General practitioner | 107 (51) | 57 (74) | 29 (55) | 38 (28) | 231 (49) |
| Specialist medical officer | 45 (21) | 10 (13) | 4 (7) | 40 (31) | 99 (21) |
| Hospital | 28 (13) | 3 (4) | 2 (4) | 27 (21) | 60 (13) |
| Community | 27 (13) | 3 (4) | 3 (6) | 20 (15) | 53 (11) |
| Other | 3 (1) | 1 (1) | 11 (21) | 4 (3) | 19 (4) |
| Allied health | 1 (1) | 3 (4) | 4 (7) | 2 (2) | 10 (2) |
| Total | 211 (100) | 77 (100) | 53 (100) | 131 (100) | 472 (100) |

Military clients accessed 77 health services. Of these, 57 visits were to GPs. The remaining 20 were to specialists, allied health professionals and hospital. The majority of this group (78%, n = 58) accessed a health service only once or twice during this period. Of the remainder, 14 (59%) did so every couple of months, and 2 (3%) more regularly.

Sexual health clients accessed 53 health services. Of these, 29 (55%) visits were to GPs. The remainder were to the cshc (21%, n = 11), allied health (7%, n = 4), specialist (7%, n = 4), community health (6%, n = 3), and hospital (4%, n = 2). Thirty-one sexual health clients (58%) accessed a health service only once or twice during this period. Of the remainder, 10 (19%) did so every couple of months, 9 (17%) once a month and 3 (6%) more regularly.

The majority of mental health clients (98%, n = 120) accessed a health service during this period, with a total of 211 health services visited. Of these, 107 (51%) were to GPs. A further 45 (21%) were to specialists, 28 (13%) to hospital, and 27 (13%) to a community health service. The remaining 4 (2%) saw a midwife, a psychologist or the sexual health nurse practitioner in training. The majority of this group (52%, n = 109) accessed a health service only once or twice during this period. Of the remainder, 70 (33%) did so every couple of months, 23 (11%) once a month, and 9 (4%) more regularly.

Wound care clients accessed 131 health care services in the 12 months prior to seeing the nurse practitioner. This represents an average of three health services per client and reflects the complex health needs of this client population. Of the services accessed, 40 (31%) were specialists, giving some indication of the complexity of the health care needs for this client population (see the individual model report in Section 3.2 for details).

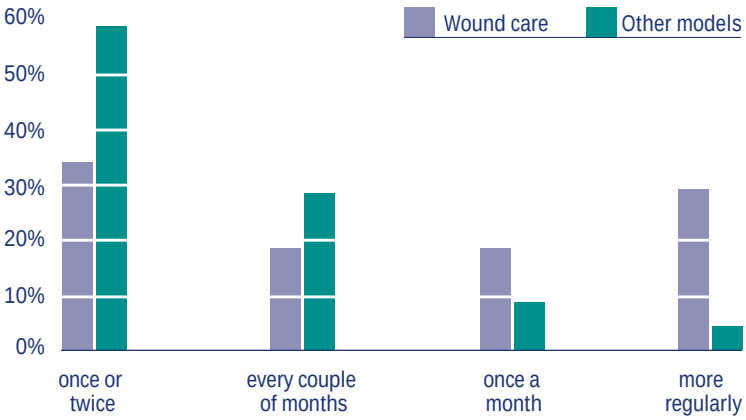
Other services accessed by wound care clients were GPs (28%, n = 38), hospital (21%, n = 27), community health services (15%, n = 20), other (3%, n = 4), and allied health professionals (2%, n = 2).

Forty-three wound care clients (33%) accessed health services only one or twice over the 12 months. However, overall this group accessed services more regularly than did the other client groups. Frequency of access included: once a month (18%, n=23), every couple of months (18%, n=23) and other (4%, n=5). Thirty-seven clients (28%) accessed services more regularly (weekly, several times a week or daily) over a period of several months. Table 6 shows the frequency of access to health services for this model. Figure 5 shows a comparison of frequency of access between the wound care model and the other models.

Table 6: Frequency of access to health services by wound care clients

| Frequency of access | Number | % |
|---|---|---|
| Once or twice | 43 | 33 |
| More regularly | 37 | 28 |
| Once a month | 23 | 17.5 |
| Every couple of months | 23 | 17.5 |
| Other | 5 | 4 |
| Total | 131 | 100 |

Figure 5: Comparison of frequency of access to health care by wound care clients versus other models






## Consultation details

A data sheet was designed to collect consultation details such as the number and duration of visits, presenting issues, diagnoses, diagnostic tests recommended by nurse practitioners and referrals.

## Episodes and visits

An episode of care was deemed to be the duration of care for a particular presenting issue from when the client first saw the nurse practitioner until treatment by the nurse practitioner ceased. The episode could include any number of visits. The episode would also be complete if, for whatever reason, the client decided not to return.

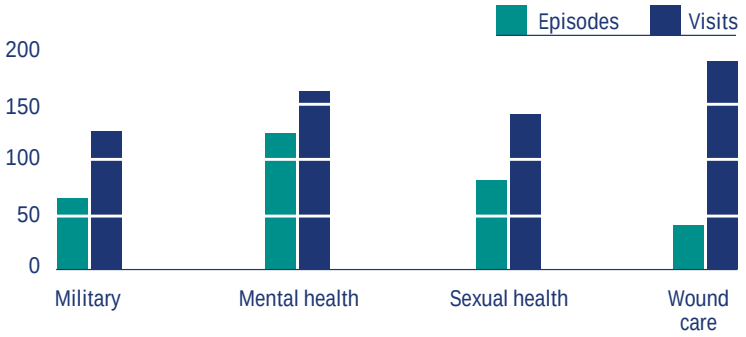
Of the 302 clients included in the trial, 289 (95%) had only one episode of care. Eleven clients (4%) saw the nurse practitioner for a second episode and two (1%) came back for a third, giving a total of 317 episodes. The number of visits per episode ranged from 1 to 17, with 613 visits in total.

The pattern of episodes and visits varied across the models and reflected each of the specialties to some degree (Figure 6). For example, the mental health nurse practitioner saw 123 clients. Of these, 120 attended for one episode only. The majority of these (74%) attended for one visit only, with an overall average of 1.33 visits per client. This pattern of attendance reflects the acute care nature of the mental health model, where the nurse practitioner provided initial assessment, counselling and medication (where necessary) before referring on to other health professionals or agencies. The total number of visits for this model was 164.

The wound care nurse practitioner, on the other hand, saw fewer clients but, due to the complex nature of the health care needs of this client population, only 12% of

clients attended for a single visit. The remainder attended for anywhere up to 17 visits, with an overall average of 4.53 visits per client. This model had the highest number of visits, with a total of 189. Only two clients saw the nurse practitioner for a second episode.

Figure 6: Number of episodes and visits in different models



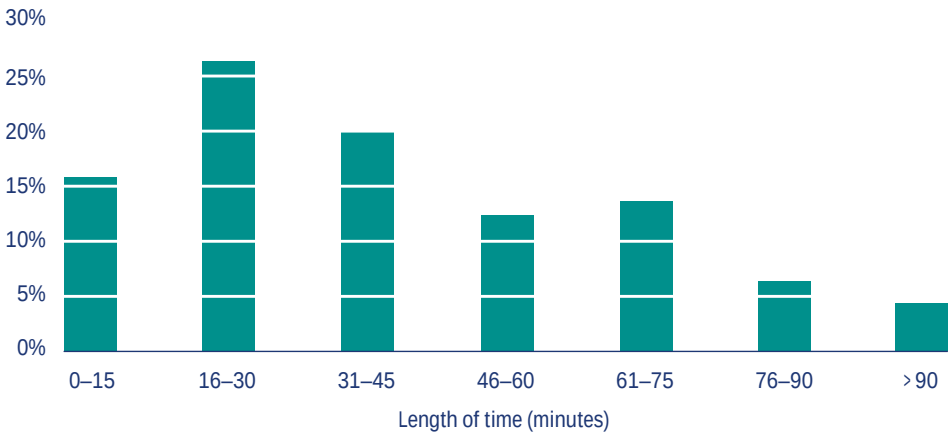

Of the 76 clients seen by the sexual health nurse practitioner, 25 (33%) requested a sexual health screen. These clients required a follow-up visit for test results or treatment. In all, 36 clients (47%) came back, for between 2 and 6 visits, with an overall average of 1.76 visits per client. The total number of visits for this model was 134. Only two clients came back for more than one episode.

The military nurse practitioner provided a diverse range of primary health care for conditions ranging from head colds to respiratory infections, sprains, pregnancy advice and vaccinations. Many clients (41%) returned for follow-up visits for test results or treatment. The number of visits ranged from 1 to 10, with an overall average of 2.07 visits per client. The total number of visits for this model was 126. Six clients returned for more than one episode.

## Length of consultation

The length of consultation across the models varied considerably, from 5 to 195 minutes (see Figure 7), with a median of 40 minutes.

Figure 7: Length of consultation (minutes)



Consultations for mental health clients were longer than for the other models. They took from 10 to 195 minutes, with a mean of 67.39 and a median of 65 minutes. Clients in this model often required a detailed mental health examination. In addition, these consultations were often time-consuming in terms of arrangements for admission to the psychiatric unit or referrals to other health professionals and agencies.

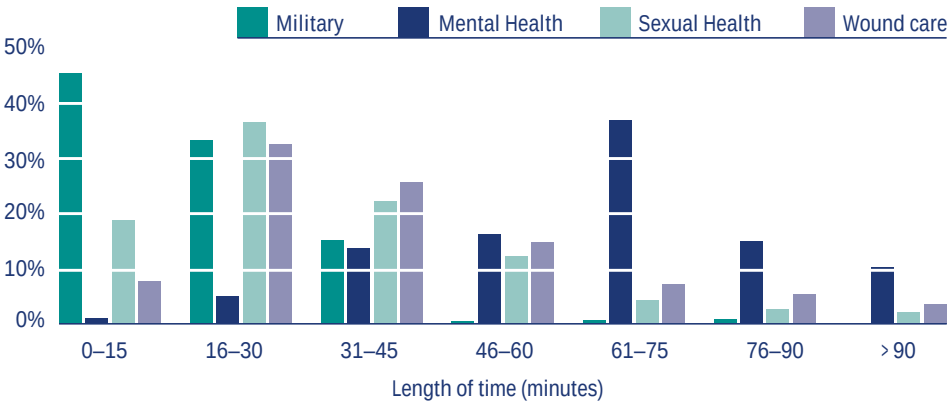
Consultations for the wound care nurse practitioner included patients with complex and varied wounds, including chronic venous and diabetic ulcers, infected wounds, and multiple lacerations. These patients often required a detailed assessment, particularly where the client had a diabetic or vascular medical history. Consultations lasted from 10 to 160 minutes, with a mean of 43.94 minutes and a median of 40 minutes.

The sexual health and military model consultations were more straightforward. Table 7 shows the range and median for each model. Figure 8 shows a comparison of the consultation times across the models.

Table 7: Length of consultation per model (in minutes)

| Model | Median | Range |
|---|---|---|
| Military | 20 | 5–90 |
| Mental health | 65 | 10–195 |
| Sexual health | 30 | 5–150 |
| Wound care | 40 | 10–160 |

Figure 8: Comparison of length of consultation (in minutes)




## Presenting issues

The 'presenting issue' was the reason the client came to see the nurse practitioner; for example, backache, sore neck, concern about contracting syphilis, and feeling depressed. Where possible, the presenting issue was recorded in the clients' words but was often recorded as the nurse practitioners' interpretation. Clients sometimes had multiple presenting issues; for example, insomnia and feeling depressed, leg ulcer and pain.

The lack of a unified coding system for recording presenting issues made it difficult to group them in any meaningful way. Some of the more common presenting issues for each of the models were as follows:

- military — a variety of cold and flu symptoms, regular blood tests, requests for vaccinations, and various musculoskeletal aches and pains
- mental health—anxiety, depression, suicidal thoughts and suicide attempts
- sexual health—genital rashes, warts, sores, concern about contracting a variety of sexually transmitted infections (STIs) and requests for sexual health screening
- wound care—leg and foot ulcers, swelling in legs and ankles, and wound pain.

## Diagnosis

Diagnoses made by the nurse practitioners were based on assessment and client history. As with the presenting issues, diagnoses covered a broad range. The most common types of diagnoses for each of the models were as follows:

- military—upper respiratory infections, musculoskeletal injuries, skin conditions
- mental health—mood, anxiety and psychotic disorders; substance abuse; and grief reactions
- sexual health—STIs (including chlamydia, gonorrhoea, genital warts and genital herpes), genitourinary conditions (including candida and urinary tract infections) and skin conditions (including eczema and dermatitis)
- wound care—chronic leg ulcers, diabetic foot ulcers, pressure ulcers, cellulitis, and multitrauma wounds.

## Diagnostic tests

### *Pathology*

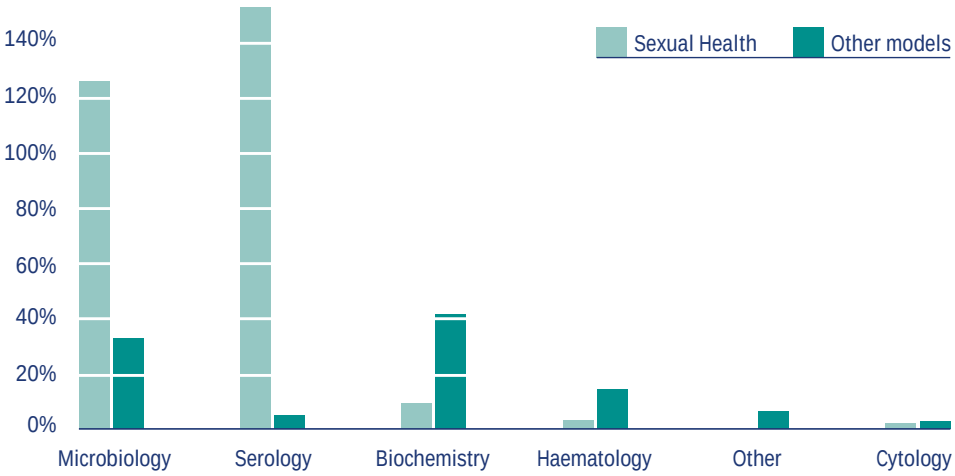
Pathology tests were recommended for 110 clients (36%). The total number of tests recommended was 432 (Table 8). The majority of these were for microbiology (41%, n = 176) and serology (40%, n = 173).

Table 8: Pathology tests recommended by nurse practitioners

| Pathology test | Military | Mental health | Sexual health | Wound care | Total tests (% of total) |
|---|---|---|---|---|---|
| Microbiology | 5 | 0 | 140 | 31 | 176 (41) |
| Serology | 0 | 5 | 168 | 0 | 173 (40) |
| Biochemistry | 18 | 9 | 10 | 18 | 55 (13) |
| Haematology | 6 | 2 | 3 | 6 | 17 (4) |
| Cytology | 3 | 0 | 2 | 0 | 5 (1) |
| Other | 3 | 1 | 0 | 2 | 6 (1) |
| Total tests per model | 35 | 17 | 323 | 57 | 432 (100) |

The majority (75%) of the pathology tests were recommended by the sexual health nurse practitioner. As stated above, 33% of sexual health clients requested a sexual health screen; others showed symptoms of STIs or expressed concern about the possibility of contracting STIs. In all, pathology was recommended for 75% of sexual health clients. Figure 9 shows a comparison of recommended pathology tests between the sexual health model and the other models.

Figure 9: Comparison of pathology tests recommended (sexual health versus other models)




The military nurse practitioner recommended pathology tests for only 12 clients (20%) and the mental health nurse practitioner for 9 clients (7%). The wound care nurse practitioner recommended tests for 31 clients (74%). The majority of these (54%) were wound swabs for culture and sensitivity.

### *Imaging*

Imaging formed only a minor component of the nurse practitioner role, with tests recommended for only 20 clients (7%). These included bone, computerised tomography and duplex scans, Dopplers, magnetic resonance imaging, and plain X-rays (see Table 9). Twelve of the tests were recommended by the military nurse practitioner, reflecting the musculoskeletal injury component of this model.

Table 9: Imaging tests recommended by nurse practitioners

| Imaging | Number | % |
|---|---|---|
| Plain | 6 | 24 |
| Magnetic resonance imaging | 5 | 20 |
| Ultrasound | 5 | 20 |
| Computerised tomography scan | 4 | 16 |
| Bone scan | 2 | 8 |
| Magnetic resonance imaging or bone scan | 1 | 4 |
| Ultrasound — Doppler | 1 | 4 |
| Duplex scan | 1 | 4 |
| Total | 25 | 100 |

### *Other diagnostic tests*

A small number of other diagnostic tests were recommended, including four electroencephalograms, two electrocardiograms, and one each of 24-hour blood pressure monitoring, echocardiogram, blood alcohol level and skin perfusion.

## Medications

Medications were recommended for 188 clients (62%) (see Table 10). They formed a major component of the military and mental health models, with the military nurse practitioner recommending medication for 44 clients (72%) and the mental health nurse practitioner for 80 clients (65%). Medication also featured regularly in the sexual health model, where it was recommended for

Table 10: Recommended medications* in different models

| Model | Number of clients (%) |
|---|---|
| Military | 44 (72) |
| Mental health | 80 (65) |
| Sexual health | 45 (59) |
| Wound care | 19 (45) |
| Total | 188 (100) |

* See glossary for explanation of the term 'recommended medications'

45 clients (59%). Medication was a minor component of the wound care model, with medications recommended for only 19 clients (45%), and two-thirds of these being over-the-counter analgesics.

The main therapeutic classes of medication for each model were as follows:

- military—analgesics, antimalarials, antibiotics, non-steroidal anti-inflammatories and vaccines
- mental health—antidepressants, anxiolytics, antipsychotic agents and sedatives
- sexual health—antibiotics, antifungals, antivirals, topical steroids, postcoital contraception and vaccines
- wound care—analgesics, topical antibiotics, local anaesthetics and topical corticosteroids.

## Referrals

Referrals were recommended for 151 clients (50%), with some patients having more than one referral. The majority (34%, n = 86) were made to medical specialists; 75 (29%) were made to agencies such as mental health services, community nursing, counselling agencies, and the Drug and Alcohol Service. Table 11 shows the referrals made by each nurse practitioner.

Table 11: Referrals recommended by each nurse practitioner

| Referral | Military | Mental health | Sexual health | Wound care | Total referrals (% of total) |
|---|---|---|---|---|---|
| Specialist medical officer | 10 | 27 | 6 | 43 | 86 (34) |
| Health service agencies | 1 | 39 | 5 | 30 | 75 (29) |
| Allied and other health professionals | 11 | 20 | 7 | 21 | 59 (23) |
| General practitioner | 2 | 28 | 6 | 1 | 37 (14) |
| Total per model | 24 | 114 | 24 | 95 | 257 (100) |

The military nurse practitioner recommended referrals for only 20 clients (33%). The majority (46%) were to allied health professionals, most notably physiotherapists, reflecting the extent of musculoskeletal injuries or inflammation in this client population. Other referrals were to a GP.

Referrals were an important feature of the mental health model. The mental health nurse practitioner recommended referral for 76 clients (62%). The majority (34%) were to other agencies, including a range of mental health services, support groups, counselling services, and the Drug and Alcohol Service. Referrals to a GP for physical assessment and to monitor medication were made for 25% of clients. Other referrals were to specialist psychiatrists and neurologists (24%) and to allied health professionals (11%), including social workers, community liaison nurses and occupational therapists. The remaining 6% were to other health professionals, such as psychologists and mental health caseworkers.

The sexual health nurse practitioner made recommendations for referral for only 19 clients (25%). This was generally a young healthy client population. Of the 24 referrals made, 6 (25%) were to a social worker, 6 (25%) to a GP, and 6 (25%) to specialists such as sexual health medical registrars, thoracic medicine physicians and gastroenterologists. The remaining referrals were to other agencies,

including the Hepatitis C Council, Mental Health Crisis, and other support services. There was one referral to the mental health nurse practitioner.

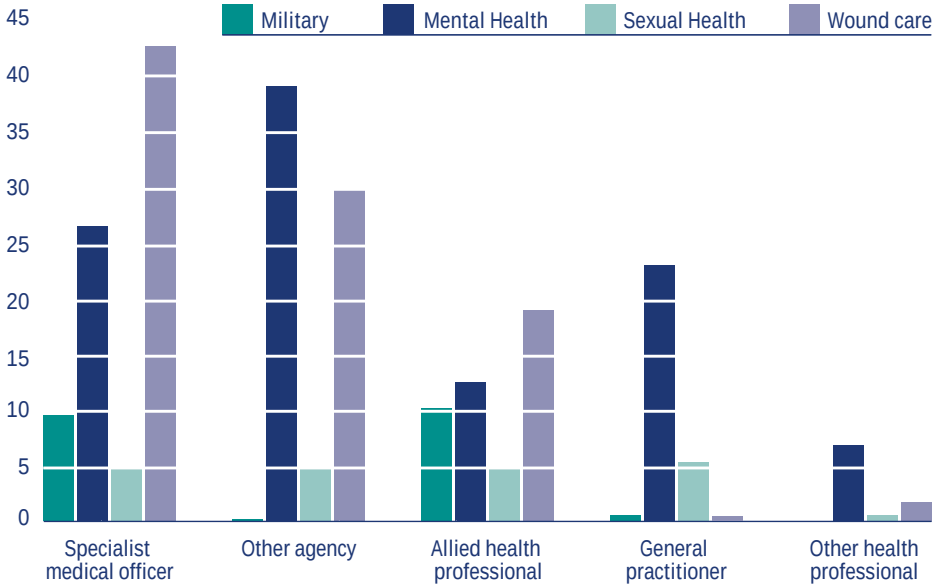
Referrals played a significant role in the wound care model and were recommended for 36 clients (86%). Many clients received multiple referrals, bringing the total number of referrals to 95. The majority (45%) were to specialists in the hospital where the wound care nurse practitioner was based. Since the role of the nurse practitioner was to work with other health professionals as part of a collaborative team, these 'referrals' may more properly be described as consultations undertaken as part of the integrated care provided for the clients. The following list of specialist referrals highlights the complexity of health care needs for this client population:

- acute pain service
- cardiac registrar
- colorectal surgeon
- general practitioner
- general surgeon
- infectious diseases specialist
- orthopaedic surgeon
- orthotist
- pain management physician
- plastics and reconstructive surgeon
- vascular surgeon.

Community nursing was a vital link for continuity of care and accounted for 27% of referrals in the wound care model. Other referrals were to a diabetic educator, social worker, podiatrist, nutritionist, physiotherapist and a psychologist.

Figure 10 shows the comparison of referrals across the models.

Figure 10: Comparison of referrals recommended by nurse practitioners



## Clinical reviews and clinical outcomes

Please note that due to the termination of the military model before completion of the trial, the remainder of this section does not include data from that model (see page 21).

### *Clinical reviews*

Throughout the trial, the nurse practitioner support teams undertook clinical reviews of the nurse practitioners' assessments and management plans for their clients. For the 396 completed clinical reviews across three nurse practitioner models, there were only three disagreements (0.8%) (Table 12). None of the disagreements had severe or serious implications for the client's treatment.

Table 12: Clinical reviews agreements and disagreements for all models

| Model | Agree | Disagree | Total clinical reviews |
|---|---|---|---|
| Mental health | 161 | 1 | 162 |
| Sexual health | 118 | 2 | 120 |
| Wound care | 114 | – | 114 |
| Total | 393 | 3 | 396 |

### *Clinical outcomes*

The nurse practitioner support teams also assessed the clinical outcomes of the clients after the nurse practitioner's treatment was complete. Clinical outcomes were assessed according to the following factors:

- expected outcomes
- managing medications
- improvement in functional status
- no significant clinical event
- the nurse practitioner being satisfied with clinical outcomes
- the medical officer being satisfied with clinical outcomes.

Table 13: Degree of agreement on clinical outcomes between support teams and nurse practitioners

| Model | Agree | Disagree | Total clinical outcomes |
|---|---|---|---|
| Mental health | 67 | 6 | 73 |
| Sexual health | 65 | 0 | 65 |
| Wound care | 38 | 9 | 47 |
| Total | 170 | 15 | 185 |

A total of 185 completed clinical outcomes were assessed across the three nurse practitioner models. In 15 cases (8.1%), the agreed desired outcome was not achieved (Table 13). In all of these cases, it was considered that the circumstances were out of the control of the nurse practitioner concerned, as the following examples illustrate:

> *'Nurse practitioner recommended admission and medication, which patient and psychiatrist agreed to but then patient refused medication and was discharged by psychiatrist.'*

> *'Patient discharged herself from public mental health unit against medical advice and told staff she intended to use drugs and had sought admission on the advice of her family.'*

*'This patient was discharged by the [medical] registrar against recommendation of nurse practitioner. Had to be readmitted for IV antibiotics, which delayed wound healing.'*

*'Although the clinical team had endorsed the nurse practitioner's proposed clinical management plan the nurse practitioner's recommendations were not carried through and the patient was discharged.'*

## Health service area surveys

Members of the nurse practitioner clinical support teams and clinical staff from the service areas were surveyed at the end of the trial. Their views were sought on the value of the nurse practitioner service, what the service was like prior to the nurse practitioner trial, the quality of interprofessional relationships between the nurse practitioners and the rest of the health care team, and possible disadvantages of the nurse practitioner level of service to the team and to patient care. The health professionals surveyed included nurses, specialist doctors and allied health workers. Overall, the views expressed regarding each of these issues were extremely positive, as illustrated by the examples below.

### Value of service

These were comments related to the purpose and usefulness of the nurse practitioner service provided. Comments were unanimously positive and laudatory, as shown by the following examples:

*'The nurse practitioner service has provided us with a fast, effective way of having appropriate patients assessed and initiating/accelerating their discharge plan…Has increased access to Private Mental Health Unit.'*

*'The nurse practitioner model has allowed for screening and treatment to occur in settings that would not otherwise be practical, or, indeed, possible…The extended area of practice, and the availability of access due to the outreach component, have allowed and encouraged less mainstream clients, and those potentially most at risk, to access care.'*

*'We have had access to a wonderful resource who has enabled us to gain a lot of valuable knowledge re the best way of caring for our patients' wounds … All recommendations made were valuable and utilised by both medical and nursing.'*

### Level of service prior to nurse practitioner trial period

These were comments related to the degree of service in the area before the trial of nurse practitioner service. Again, there was unanimous agreement across the models that the service prior to the trial was inconsistent, ad hoc or non-existent, and many comments reiterated the positive value of the nurse practitioner service in light of this, as shown by the following examples:

*'Very unpredictable and difficult to obtain services when needed … Increased workload for other mental health staff. Therefore reduced time/care to inpatients of mental health units.'*

*'The outreach component with extended practice was not provided at all … Clients did not have the choice of community based screening and treatment, needing to access their nearest clinic or general practitioner [and so] relying on the efforts of the client to initiate care in regards to a very private and sensitive area of their personal health.'*

*'In an ad hoc fashion through discussions with staff from the plastics ward … There was no TCH [The Canberra Hospital] wide wound care service prior to the trial.'*

### Interprofessional relationships

This category of comment described the type and quality of professional relationships that developed between the nurse practitioners and their colleagues in the service areas. Again, these comments were overwhelmingly positive, with only one comment that the profile of the nurse practitioner position needed to be raised among other health care professionals. The following are examples of typical comments:

> *'Close working relationships have been established with other health professionals — nurse practitioner role well supported by the multidisciplinary team.'*
>
> *'The networks and collaboration, consultation and professional cooperation has been excellent, and enhanced the functioning of our clinical area, and our service delivery … Strong inter-professional relationships were established. Within the cshc team between medical, nursing, administration and counselling staff, and with sex industry community organisations.'*
>
> *'Excellent — service held in high regard and thought to be a very valuable resource… This relationship with the nursing, clinical, allied health, and doctors was supportive, professional, and able to withstand challenging and robust discussions.'*

### Disadvantages to the team

Of 22 responses on this item of the survey, 14 (64%) stated that there was no disadvantage to the health care team. The only major disadvantage noted was that the mental health nurse practitioner had the potential to deskill junior doctors in the emergency department in terms of mental health assessment and interview skills (this concern accounted for two of the eight stated disadvantages). The other six stated disadvantages related to organisational problems regarding the establishment of the nurse practitioner position and the temporary nature of the trial service; for example, clarification of roles, perceived increased workload for some team members, and trialling and then withdrawing a useful service.

### Disadvantages to patient care

Of 20 responses to this item of the survey, 18 (90%) stated that there were no disadvantages to patient care, and a number of respondents stressed that there were only advantages. Of the two stated disadvantages, one respondent was concerned about clinical responsibility and indemnity issues (mental health model), and the other noted that the nurse practitioner was unable to have continuity of care through community health and outpatients (wound care model).

## Consumer surveys

Of the 66 returned consumer surveys, 60 respondents (91%) said they would see the nurse practitioner again. Consumers were also asked to express their agreement or otherwise with the three statements shown below.

That they were satisfied with:

- the consultations provided by the nurse practitioner
- the information provided by the nurse practitioner
- the improvement in their health problem.

More than 90% of respondents agreed or strongly agreed that that they were satisfied with the consultations and information provided by the nurse practitioners; 71% agreed or strongly agreed that they were satisfied with the improvement in their health problem following treatment by the nurse practitioners.

Responses collated from all returned surveys are shown in Table 14 (note that not all returned surveys were fully completed). Consumer comments regarding particular models are provided in the individual model reports in Section 3.

Table 14: Responses from consumer surveys for all models

| | Strongly agree | Agree | Undecided | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| Satisfied with consultation | 44 | 15 | 1 | 2 | 3 |
| Satisfied with information | 42 | 18 | 2 | 1 | 2 |
| Satisfied with improvement in health condition | 29 | 16 | 13 | 2 | 3 |
| Total | 115 | 49 | 16 | 5 | 8 |

## 1.4 Discussion and recommendations

The mixed-methods approach to data collection resulted in a database that included clinical, demographic and experiential information. Analysis of these data was iterative and triangulated, and it informed the generic and model-specific dimensions of the nurse practitioner role, services and education. The analysis involved data-specific analytical techniques within the subsets of the database and triangulation of findings across the subsets of data.

Analysis of the clinical data was descriptive. This has provided statistical information related to the demographics of patients of the nurse practitioner service; patterns of therapies, diagnostics, and referrals used by the nurse practitioners; and patient outcomes. The analysis identified the processes and outcomes of the nurse practitioner episodes of care across the four models.

The statistical data relating to the nurse practitioner service were subjected to interpretive scrutiny and were triangulated with the coded experiential data from the focus groups and the descriptions of practice from the clinical review sheets, in order to develop the clinical protocols and medication formulary for each model. Details of the analytical framework are further reported in Section 3. Similarly, analysis of the data relating to the educational outcomes of the trial is fully reported in Section 2.

The results reported here on the trial of practice for nurse practitioner service indicate that the service in these models was safe, efficacious and valued by patients. In addition, analysis of the data obtained from surveys of health professionals reveals that this new level of health service was accepted as a valuable addition to existing models of service delivery. The facility for nurse practitioners to meet an identified gap in health care for sectors of the community was recognised and well supported by health service teams.

The patients for whom health service was provided by the nurse practitioners included children, young adults, adults and elderly people from diverse sectors of the community. However, only one person identified as of Aboriginal or Torres Strait Islander origin, despite careful data collection on this field. We concluded that this was either because Aboriginal or Torres Strait Islanders who participated in the trial did not identify as such when asked, or, more likely, because the health needs of this potential client group did not fall within the scope of practice for the models used.

Referrals to the nurse practitioner service came from a range of health professionals, including specialist and general medical practitioners, allied health workers and nurses. The trial participants included patients with chronic health problems, episodic illness and health maintenance issues. The patient surveys strongly indicated that the nurse practitioner service was highly acceptable to the community members who were participants in the trial. Furthermore, the nurse practitioner was readily accepted by other health care providers, as demonstrated by referral patterns and surveys of health professionals.

The findings from this trial of practice in four models have demonstrated that nurse practitioner service has a high level of acceptability.

We therefore recommend that:

- the nurse practitioner be recognised as a legitimate and autonomous health care provider.

The findings indicate that the service provided by the nurse practitioners improved patient access to health care. This was either through offering a new service (as with the sexual health model) or improved and timely coordination of care (as provided by the wound care and mental health models). Furthermore, the findings indicated that this service was provided within a nursing model of care with judicious and appropriate use of diagnostic and therapeutic resources. These findings are supported by the data relating the clinical reviews of nurse practitioner service and the patterns of this service.

These findings indicate that the nurse practitioner service not only meets an identified health service need but is also safe and effective. The data relating to clinical outcomes showed that the anticipated patient outcomes of service were achieved in 91.9% of cases where data were available.

We therefore recommend that:

- ACT Health support the development of nurse practitioner models of practice in the ACT
- the requisite legislation relating to registration, prescribing, referrals and use of diagnostic processes be amended to enable nurse practitioner level of service for the ACT.

This study has provided important descriptive information relating to four models of nurse practitioner service in the ACT. The findings support the implementation of this service to enhance the quality and access of health care in the ACT. However, there is a need for further research that will investigate the economic and clinical efficacy of nurse practitioner service; this would draw upon expanded research methodologies once the nurse practitioner service is legitimised.

We therefore recommend that:

- ACT Health sponsor and support evaluation research into nurse practitioner services in the ACT.