

**ROLE OF THE GERONTOLOGICAL NURSE  
PRACTITIONER IN AUSTRALIA**

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***ABSTRACT***

The role of an aged care nurse practitioner (ACNP) is well recognised internationally however, in Australia, the implementation of this advanced role is still in its infancy with few gerontological nursing experts registered as nurse practitioners (NP). This single Victorian facility 2002 study was the first to consider the role of an ACNP in Australia and the first to describe the clinical and social benefits or otherwise of ACNP interventions in an Australian context. NP Studies in the Australian Capital Territory (ACT) from 1999 – 2002 investigated the role in other nursing domains followed by an ACNP study conducted over 2004-2005. A subsequent national ACNP study in 2005 provided complementary results to this first Australian ACNP study which created the framework for these subsequent projects.

This study aimed to establish: clinical or other outcomes that a gerontological nurse practitioner (ACNPs) could achieve for older persons in an Australian residential aged care facility, factors that impacted upon the introduction of such a role, a definition of the role and to establish whether such a role would benefit older persons in Australia.

Various methods were used to determine the numerous outcomes which were to be studied in this project. A quantitative analysis of the functional and social status of residents who participated in the project, pre and post the ANCP interventions was undertaken. A quantitative analysis of the satisfaction of residents or their representatives pre and post the interventions is also presented. A qualitative analysis via focus groups, of the views of staff, residents and health professionals involved in the project was undertaken. Hospital rates pre and post the interventions and case studies are presented as additional information only.

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The team involved in this Victorian Government Department of Human Services funded aged care nurse practitioner project at Greensborough Private Nursing Home included this researcher, the ACNP candidate, the Director of Nursing (DON) and Deputy DON. The team jointly managed the complex legal framework, to ensure interventions were implemented safely for all residents with the support of the residents' general practitioners and other health professionals working for the nursing home.

Statistically significant improvements in the resident's functional and social status were demonstrated for residents treated by the ACNP. Additionally, the resident and representative satisfaction survey revealed a higher overall level of satisfaction with the home following the project's completion. The results demonstrated that the ACNPs' interventions were of high quality, led to improvements in resident health outcomes, improved residents' quality of life and reduced hospitalisation rates. This was achieved by intervening in a timely manner when residents required relief of their physical and psychological symptoms through targeted interventions and one-on-one specialist medical nursing attention.

In summary, this study identified interventions an ACNP could undertake and therefore the role they could play in an Australian residential aged care facility, given the national legislation governing all aspects of an aged care facility. This study demonstrated that the role was feasible and achieved positive resident outcomes despite the factors that impeded its introduction.

## **Signed statement of certification**

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution to Caroline Lee and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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### **Glossary of Terms**

ACFI	Aged care funding instrument
Aged Care	In the context used in this thesis, the residential aged care environment
Aged Care Nurse Practitioner (ACNP) - role and parameters of practice	This term is used to describe both ACNPs identified in various studies and aged care nurse practitioner candidates involved in this study and others as described. ACNP practice refers to therapeutic medication management, diagnostic investigation management, referrals to medical specialists, and all nursing care of the aged care residents of this home. All ACNP practices are undertaken in partnership with the multidisciplinary team. Clinical practice guidelines written in 2004 based on the ACNP Project funded from 2002-2003 by the Victorian Department of Human Services, provide the framework of practice for the ACNP role. The equivalent term used to refer to an Aged Care Nurse Practitioner is Gerontological or Geriatric Nurse Practitioner.
Approved provider	A body that is approved under the Aged Care Act 1997 by the Commonwealth to provide services to older persons in a residential aged care facility that receives Commonwealth funding
BSL	Blood sugar level
CCF	Congestive Cardiac Failure
Client	The recipient of an aged care service
CPG	Clinical Practice Guideline
DON, ADON, DDON	Director of Nursing, Assistant Director of Nursing, Deputy Director of Nursing
Geriatrics	Sick elderly
Gerontology	The study of dependent elderly
GLNP or GNP	Gerontological or Geriatric Nurse Practitioner – the equivalent term used to refer to an Aged Care Nurse Practitioner
GP	General Medical Practitioner
ICU	Intensive Care Unit
IM	Intra muscular (injection)
MD	Medical practitioner (may include GPs)
MP	Medical Practitioner
NIDDM	Non-insulin Dependent Diabetes Mellitus
NP	Nurse Practitioner
PCs	Personal Carers, personal workers, nursing assistants, assistants in nursing – non-registered care staff employed by aged care facilities to provide services to residents of a basic nursing nature
PEG	Percutaneous endoscopic gastrostomy
Per	For each one; apiece
Post	After...
Pre	Prior to ...
RACF	A residential aged care facility which is federally funded to provide quality care services to older persons who have been assessed by a recognised Aged Care Assessment service as requiring residential care.
RCS	Resident classification scale
RDNS	Royal District Nursing Service
Re	Regarding ...
RN	Registered Nurses as registered under various bodies in Australian States and other countries, including the Victorian Nurses Board in Victoria, Australia
RN Div 2	Registered Nurse Division 2 (in Victoria) – the equivalent of an Enrolled Nurse in other States or Territories
UTI	Urinary Tract Infection



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# 1 INTRODUCTION

## 1.1 WHAT IS A NURSE PRACTITIONER?

### **Definition of the role of a Nurse Practitioner**

The Victorian Department of Human Services states in their published nurse practitioner documentation that a Nurse Practitioner (NP) is a Masters degree educated Registered Nurse (RN) who is an expert in their field. They are educated for advanced practice, part of an interdependent health care team and their role is determined by the context in which they practice (Victorian Government Department of Human Services, 1999). It is a role that enables nurses to move into a senior position that is clinically based rather than management based.

The final report of the Victorian Nurse Practitioner Task Force (Victorian Government Department of Human Services, 1999) identified characteristics of a NP and stated that extended practice refers to five new areas of nursing care specific to the role of a NP:

- therapeutic medication management,
- direct referrals to medical specialists,
- initiation of diagnostics and pathology,
- admitting rights to hospitals, and
- writing leave of absence certificates.

According to all legislative, nurses registration related 'Acts' in each Australian State, general registered nurses cannot perform any of these activities under their professional scope of practice.

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The allowable extended practices of a NP are generally context specific to their area of practice. Once endorsed by the nurse's registration body in their State, and if their State legislation supports such, these nurses are able to:

- prescribe from a list of limited medicines based upon the area of practice in which the NP is registered,
- order pathology tests in accordance with the clinical practice guidelines (CPGs) which each NP must submit when seeking approval to be registered with the various State Nurses' Boards,
- refer clients to specialists,
- provide mid-level medical management utilising the skills and knowledge acquired over many years of practice and through their extended study.

It is only in recent years that the nurse practitioner has become recognised in Australia as an appropriate extended practice clinician who represents the advanced roles many nurses have performed unofficially in the past (Pearson, Nay, Ward, Lenton, and Lewis, 2002b, p. 33). Australian State regulatory and policy changes have determined that the role will be supported in a range of settings beyond the rural and remote setting where traditionally nurse practitioners have existed. The Aged Care Nurse Practitioner (ACNP) role in Australia is now being recognised as a legitimate addition to the list of NP titles (eg. acute care, rural and remote, mental health) that were originally considered when the notion of NPs in Australia was first discussed in the early 1990s. The role is interchangeably known as an 'Aged Care Nurse practitioner' (ACNP), 'Gerontic Nurse Practitioner' (GNP) or 'Gerontological Nurse Practitioner' (GLNP). In this thesis, the abbreviation ACNP shall be used to encompass all these terms because the Victorian State Government Department of Human Services used the ACNP term instead of the GNP term when it funded three

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gerontology based nurse practitioner projects which commenced in 2002, one of which has been used as the basis of this thesis.

### **1.2 HEALTHCARE PROVISION IN AUSTRALIA'S AGED CARE SECTOR**

#### **Registered nurses in charge**

In the residential aged care sector in Australia, RNs often work in autonomous positions. Medical and other health practitioners such as physiotherapists, speech pathologists and dieticians, are invited to the nursing home, hostel or supportive residential care service on a needs only basis. Facilities are generally managed by a Director of Nursing (DON) or Care Manager and staff range in expertise from untrained care staff to RNs. The scope of practice and role of the RN in this setting varies but is predominantly a "client management" role where decisions about a resident's clinical care, diagnosis, management and review are conducted by the RN and, in most cases, actual direct care is provided by personal care assistants (Richardson & Martin, 2004).

RNs in aged care also have to implement practices to compensate for a recognised Australia-wide deficiency of General Practitioners (GPs) in both rural and suburban areas that has caused a deficiency of prompt medical services (Australian Government Department of Health and Ageing, 2004). For example, when aged care facility managers from all Australian Divisions of General Practice regions were asked in 2004 whether new (admitted for less than three months) residents had difficulty obtaining GP services, up to 64% answered "often" (p.60). Some region's participants indicated they had difficulty obtaining GP input for routine services such as writing and reviewing medication charts, prescriptions or general support 100% of

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the time (p.71). In one region, 47% participants stated that existing residents who were established patients of the GPs, not new residents, had difficulty obtaining GP services (p.61).

### **This project was the first Australian Aged Care Nurse Practitioner Project to study the ACNP role in residential aged care**

In 2002, the Victorian Department of Human Services called for submissions from organisations wishing to conduct demonstration projects to examine the feasibility, safety and effectiveness of an Aged Care Nurse Practitioner (ACNP) in various aged care settings. The scope of the demonstration projects included examination of the quality and benefits of care provided to patients and residents in three health care settings, namely community care, residential care and sub-acute care. A residential aged care facility (RACF) in Melbourne, Greensborough Private Nursing Home (GPNH), was successful in their submission to participate in the residential care Aged Care Nurse Practitioner Trial Project (the Project) which this researcher subsequently conducted over 2002 and 2003.

Prior to this study which commenced in 2002, no Australian studies had described the clinical and social benefits or otherwise of ACNP interventions in a residential aged care setting. Studies in the Australian Capital Territory from 1999 – 2002 investigated the NP role in other nursing domains. In 1993, ten pilot NP projects commenced in New South Wales, none of which explored the role of the ACNP. Other non-ACNP NP trials in South Australia and Victoria were conducted in 1996 and 2001, whilst in 2000, four Western Australian rural NP projects were conducted and described (ACT Government, 2002, pp. 14-19). A subsequent national ACNP study in

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2005 provided complementary results to this study but this first Australian ACNP study created the framework for this subsequent ACNP project.

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Two other health care providers, the Royal District Nursing Service (RDNS) and Broadmeadows Health Service (BHS) were also successful in tendering for demonstration projects. The results of those studies were reported directly to the Victorian Department of Human Services but have not yet been made publicly available.

Subsequent to this 2002 project, the Joanna Briggs Institute Research Unit was contracted in 2005 to work with ACT Health and aged care providers to develop proposals for a national ACNP trial. The national trial commenced in August 2005 using some of the concepts and framework of this 2002 study (Joanna Briggs Institute, 2007, p.vii).

### **GP Panels – addressing a need for medical services**

To reduce the impact of shortages of doctors in aged care, the Australian government in recent years introduced an initiative to supply funds to Divisions of General Practice across Australia to develop GP panels (Australian Government Department of Health and Ageing, 2007d). The role of GP panels was to determine: first, the needs of aged care organisations within their division; secondly, to assist the development of appropriately coordinated medical services to these aged care organisations; and third, to improve GP access to residents of aged care facilities.

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The GP Panel initiative recognised multi-factorial reasons for the deficiency of GP services to aged care, including a lack of funds to compensate them for involvement in what were considered time-consuming quality activities. The Divisions of GPs were therefore supplied funds to determine appropriate, locally suitable strategies and funds to compensate GPs for their involvement in these activities. Funds were made available for GPs to participate in care plan reviews and other case management oriented activities and the panels determined which GPs in the Division would attend aged care facility based medication management committee meetings.

One of the roles of medication management committees in aged care organisations is to approve lists of 'nurse initiated medications' – all available 'over the counter' - to provide to residents in certain clinical circumstances. To support the quality use of medicines in aged care and to support aged care organisations in the development of medication related systems, in 2002, 14 recommendations for practice were published in guidelines distributed by the Australian government's committee named the 'Australian Pharmaceutical Advisory Council medication management in aged care committee' (Australian Pharmaceutical Advisory Council, 2002). These included instructions re how to develop a medication standing order system for prescription medicines in addition to a nurse initiated medication system. Standing order systems provide RNs an ability to implement further strategies in medical emergencies or when clinically significant changes occur until a GP can visit, as RNs are the only clinically trained, immediately available staff in residential aged care facilities (RACFs) relied upon to address such needs promptly in order to reduce clinically adverse outcomes.

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In 2006, the aged care sector were again surveyed to establish the benefits or otherwise of the Aged Care GP Panels Initiative. The results showed that despite the interventions, 53% of facilities did not believe their access to GP services had improved, 29% believed they had improved a little, 12% moderately and 6% significantly (Australian Government Department of Health and Ageing, 2006, p.17). These initiatives have therefore improved medical services somewhat, however, each of these activities also require the direct involvement of expert RNs at the facility and do not guarantee the most efficient, cost effective and timely medical services in the long-term.

#### **Pre-emptive nursing interventions**

In addition to making clinical decisions promptly in the absence of medical support, RNs in aged care must have advanced skills in assessing the ageing body as an older body does not respond in the manner taught in generalist anatomy and physiology undergraduate studies (Matteson, McConnell & Linton, 1997). Older people often have multiple medical diagnoses interacting with each other, therefore, to ensure residents' healthcare needs are effectively met, many aged care nurses have had to extend their knowledge and role (in an unofficial capacity). They often need to preempt the ordering of diagnostic tests whilst awaiting for a GP to respond to their phone call asking them to attend their patient. Other medically oriented interventions undertaken by RNs include withholding the administration of medications when a side effect has been suspected or detected or preemptively discussing medication management needs with the pharmacist and arranging delivery of such whilst awaiting a prescription from the GP.



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In all of these cases, the aim of the pre-emptive nursing is to minimise the amount of time between suspicion of a problem (for example, infection, medication induced dementia), confirmation of that problem and, ultimately, treatment of the problem, with nurses acting as agents for residents in an environment where provision of medical care is often delayed. This requires the skill of an expert nurse such as an ACNP.

### **RN workforce shortage**

The aged care sector in Australia, as per other aged care and other health sectors across the world, is also experiencing significant RN workforce shortages (Richardson & Martin, 2004; Van Konkelenberg, 1999; Victorian Government Department of Human Services, 2001). It is acknowledged that this is mainly due to professional status issues, issues regarding professional support, provision of amenities for staff and differing staff remuneration packages between aged care and other health care settings. These negative workplace and professional conditions have continued despite the fact that there has been an increasing acuity of residents of residential aged care facilities over the past 20 years with aged care RNs making clinical decisions at a much higher clinical level (Richards, 2002). If RNs are to remain attracted to this sector, it would seem that the RN workforce in aged care needs better professional recognition and appropriate resourcing.

### **Specialised Body of Knowledge – consumer and government expectations**

The rightful expectation of consumers / residents (or their representatives) of an RACF is that staff provide expert care in all areas of need at all times, e.g. continence, behaviour management, palliative care, management of chronic conditions such as diabetes, renal failure, or cardiac health. Government enforced

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accreditation standards require RACFs in Australia to provide quality standards of care at all times in a home-like environment which addresses residents' personal needs, including specialised clinical, emotional and spiritual needs and assistance with activities of daily living (Commonwealth of Australia, 1998, p. G-88). Some of the nursing services required in a RACF are listed below:

- Behavioural management
- Complementary therapies
- Continence management
- Cultural and spiritual life management
- Diabetes care
- Emotional support
- Independence support
- Leisure interests and activities management
- Medication management
- Mobility, dexterity and rehabilitation management
- Nurse assessment
- Nutrition and hydration
- Oral and dental care
- Pain management
- Palliative care
- Privacy and dignity management
- Sensory loss care
- Skin and wound care
- Sleep management
- Specialised nursing care including catheter, ostomy, PEG, syringe driver care

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This list is not an exhaustive representation of a care recipient's needs but demonstrates the extent to which an aged care nurse must be expert.

### **1.3 RESEARCHING THE VALIDITY OF NURSE PRACTITIONERS IN AUSTRALIA'S AGED CARE SETTING**

#### **Improving a professional image – legitimising performed practices**

In the last 18 years the researcher has worked as an RN consultant supporting RACFs across Australia, setting up quality systems to address compliance and accreditation standards, and as an educator and gerontology resource. The researcher has considered ways in which the aged care RN role can be developed, enabling a nurse to be recognised in a senior role without having to enter a management position, so resident care outcomes can be optimised by a knowledgeable senior clinician.

About 15 years ago through further education, the researcher became aware of the role of an aged care nurse practitioner in other countries and the seed was sown to educate the Australian aged care industry and facilitate the introduction of this role into Australia. The current required practices of RNs in aged care fall within the realm of an ACNP, a role that is heavily regulated and defined. Currently, aged care nurses act outside of this regulatory framework to ensure the provision of quality care, as they consider meeting residents' needs takes precedence over professional boundaries (pers. obs.). If the potential workforce identifies that advanced practices undertaken by nurses in aged care are recognised and supported in a protected regulatory and policy framework, increased interest in the role may occur, improved

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RN staff retention may be the result and residents may obtain timely access to clinical and medical services.

The role of an ACNP is well recognised internationally, especially in the United States (US), where the ACNP role has existed since the 1990s and the role of the NP since the 1960s. In Australia, the implementation of this advanced role is still in its infancy with few gerontological nursing experts registered as a nurse practitioner.

In 1996, the researcher presented a paper titled 'Gerontic Nurse Practitioners in Australia' (Lee, 1996) at the first Australian National Nurse Practitioner focused conference "Autonomous Practice in Nursing and Midwifery: Independence and Partnership" held in South Australia (SA). The paper was written after undertaking postgraduate studies in the area of gerontological nursing. This role was seen as an exciting extension of the work an aged care expert could perform in Australia if it was adequately designed and implemented. From here, an active pursuit of any research regarding the ACNP role commenced, in an attempt to identify descriptors of the role that could be translated into the Australian context.

Until 1996 the concept of a NP in aged care was not on the national agenda and had not been considered as part of the initial lobbying and education planning strategy as discussed at a Curricula Leadership Meeting conducted at the 6<sup>th</sup> International Nurse Practitioner Conference held in Melbourne in 1998 (Lee, 1998). This meeting was chaired by the Director of the Rural Health Section State Financing Group of the Commonwealth Department of Health and Family Services and was organised to discuss strategic directions for nurse practitioner education in Australia. At this meeting the researcher raised the need for gerontological nurse practitioners but was

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informed that education for such a role had not been planned and would not be considered for many years.

The New South Wales (NSW) government at that time was the only State government in Australia considering researching the role of a NP with a view to commence its implementation in Australia. The initial intent of the NSW Government in 1998 was to develop rural and remote NP positions to address the need for further rural medical services. An advanced practice nurse who had the knowledge and authority to perform medical functions was seen as an ideal solution to the medical need. Their intention was to extend the role to metropolitan health facilities following the initial NP trial project's findings. This history is described in the publication titled "Being a nurse practitioner in New South Wales" (State of New South Wales Nurses and Midwives Board, 2007, p.3).

After this conference in 1996, a group of nurses in independent practice created a national committee to lobby both the State and Commonwealth governments further to commence trials of NP demonstration type projects. Academics from a variety of nursing schools at universities in NSW, Victoria (Vic) and the Australian Capital Territory (ACT) also collaborated with the government to conduct studies that would research the role of a NP in various settings. It was deemed at the 1996 curricula meeting conducted at the 6<sup>th</sup> International Nurse Practitioner Conference by the Commonwealth Department of Health and Family Services that NP projects that established the NP role in rural settings were more urgently required than aged care projects.

## **1.4 AIMS AND OBJECTIVES OF THIS RESEARCH PROJECT**

### **Is there a difference in outcomes of care with the introduction of an ACNP?**

This research project was broadly aimed at identifying whether the ACNP role would benefit older Australians living in residential aged care. Through timely and relevant interventions based upon a comprehensive assessment of need, it was hypothesised that different health outcomes may be demonstrated if an ACNP was involved. One hypothesis was that by intervening in a timely manner and avoiding acute illness, a health professional could aid in the prevention of unnecessary hospitalisations that can cause further stress in confused older persons. Additionally, the benefits of conducting a thorough health assessment to establish care needs that achieve quality health outcomes for older persons (including outcomes such as a reduction in falls and anxiety or negative behaviours, reduction in restraint use and achieving 'older person empowerment', reduction in infections with the effective management of such), are well documented (Barkauskas, Baumann, Darling-Fisher, 2002; Beck, Robinson & Baldwin, 1992; Beck & Shue, 1994; Brady, Chester, Pierce, Salter, Schreck & Radziewicz, 1993; Chrismann, Tabar, Whall & Booth, 1991; Commonwealth of Australia, 2004; Commonwealth of Australia, 2005; Covert, Rodrigues & Solomon, 1977; Dolinsky, 1984; Donius & Rader, 1994; Eigsti & Vrooman, 1992; Gerdner & Buckwalter, 1994; Ginter & Mion, 1992; Health Department of Victoria, 1991; Hertz, Koren, Rossetti, Munroe, Berent & Plonczynski, 2005; Kayser-Jones, 1992; Kolanowski, 1992; Kramer, 1994; Matthiesen, Sivertsen, Foreman & Cronin-Stubbs, 1994; Miller, 1994). It was hypothesised that these benefits could be conferred to aged care residents through the provision of a NP role.

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One specific objective of the project was to determine if there were any significant changes to a resident's physical and cognitive function through the provision of targeted support by an ACNP. This was quantitatively studied through the use of functional and social scored assessments compared pre and post ACNP interventions. The resident or their representative's perception of quality care was also established before and after the project via focus groups to determine qualitative views of the ACNP role and outcomes of ACNP interventions. The various evaluation activities are further described throughout this thesis.

This thesis reports on the background to the project, the methods used, its findings and the implications of its findings in terms of the long term future of the role in Australian RACFs. In addition to discussing the Greensborough Project, this thesis explores the ACNP role including the scope of practice of this role within the context of residential aged care, a brief history of the emergence of this role in Australia and other countries, its relevance in today's society and position in today's regulatory framework. The barriers experienced by nurses emerging as ACNPs in Australia, and elsewhere, are highlighted to provide information for those wishing to embark upon the aged care nurse practitioner journey. Finally, recommendations for future research are presented.

Beyond the aims and objectives of the project, an objective of this thesis was also to explore the ACNP role in general and its potential in Australia. It is hoped that any reader and future ACNP applicant, through a discussion of the factors that impede the implementation of the role and the perceived and real benefits this role can achieve, will be able to successfully determine appropriate strategies for the

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introduction of the role of an ACNP in any residential aged care environment in Australia.



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## **2 BACKGROUND**

### **2.1 THE NORTH AMERICAN EXPERIENCE**

#### **Nurse Practitioners in the United States of America**

In the United States (US) and Canada, the title 'nurse practitioner' is protected and authorisation for practice is based on the completion of educational requirements. This is in contrast to the United Kingdom (UK). An examination of the US experience below offers valuable insights into the NP role, which will be further expanded upon in Chapter 3.

#### **The Legislative Framework in the US**

The legislative framework for all NP specialties (eg acute care, aged care) within an individual US State is the same, but each State's practice framework is different from the other 51 States (Phillips, 2007). The vast differences in prescribing authorities, reimbursement of services and level of autonomy between States is outlined in the annual legislative update published in the American Nurse Practitioner Journal each year. The details documented in the nineteenth annual legislative update describe the 2007 legislative position (Phillips, 2007). This lack of uniformity, which is also present in the Australian sector, is confusing for healthcare professionals and consumers.

Phillips (2007, p.15) also states that despite widely published research supporting the quality of care provided by advanced practice nurses, attempts in some States of the US to limit their authority continue. She states that the surplus of documentation

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describing the decline in number of direct healthcare providers and the need to improve access to qualified providers should support the premise that less restrictive regulation is required, not more. In 13 States, improved conditions have been instituted since 2006 when laws or regulations were enacted to remove practice barriers, clarify or standardise educational requirements, define provider status and clarify global signature status (Phillips, 2007, p.15). In contrast, in 2006, Alabama and Florida enacted legislation and regulations restricting the prescribing practices of advanced practice registered nurses despite efforts of the nurse's associations opposing such moves. Therefore, despite a relatively lengthy NP history and a well-established role, the landscape of regulation continues to fluctuate in the US. The political landscape continues to impact upon the NP role and will prove to be a barrier for continued promotion of the role if it is not addressed (Phillips, 2007).

### **NP scopes of practice in the US**

As with legislative frameworks, the scope of practice varies significantly across the 51 US States. For example, 25 States do not require NPs to have physician collaboration, direction or supervision; the Board of Nursing has sole authority over the practitioner's scope of practice. In comparison, 16 States require NPs to collaborate with physicians, five States require NPs to be supervised by physicians and five States require the NP's scope of practice to be authorised by both the board of nursing and medicine (Phillips, 2007, p. 15).

### **US Prescriptive authority**

In relation to prescriptive authority, 14 of the 51 States reported in the Nineteenth Annual Legislative Update (Phillips, 2007, p.16) could prescribe medicines including controlled substances independently of any registered physician involvement. In 34

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States, NPs required some degree of physician involvement or delegation of prescription writing for all medicines. In three States NPs were able to only prescribe medicines excluding controlled substances with some degree of physician involvement or prescription writing delegation.

## **2.2 NURSE PRACTITIONERS IN AUSTRALIA**

### **Nurses Acts**

Each Australian State regulates the actions of registered nurses through their individual Nurses Acts or similar legislation. The Acts define the roles of each States' and Territory's Nurses Boards which register, monitor and discipline registered nurses. The following lists those Acts which currently regulate the registered nurse role for each State or Territory:

- Health Professions Registration Act 2005 - Victoria (Vic) - replaced Nurses Act 1993 on 1 July 2007
- Nurses Act 1999 – South Australia (SA)
- Nurses Act 1992 – Queensland (Qld)
- Health Professionals Act 2004 – Australian Capital Territory (ACT)
- Nurses Act 1995 – Tasmania (Tas)
- Nurses Act 1992 – Western Australia (WA)
- Nurses Act 1991 – New South Wales (NSW)
- Health Practitioners Act 2004 – Northern Territory (NT)

### **Continuing education**

In addition to registration, the Australian Nursing Council commissioned a study to identify the indicators that measure continuing competence in nurses, with a view to

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introducing similar requirements for nurses in Australia as are in place overseas (Pearson, Fitzgerald, Walsh & Borbasi, 2002a). Nurses in the United States, Canada and many other overseas countries are currently required to formally demonstrate currency of knowledge. Continuing education requirements must be met for RNs to be re-registered in these countries. Hence this also applies to NPs as they are first and foremost registered nurses.

In contrast, requirements for re-registration in the majority of Australian states include a declaration only that the person has practiced in the past year (Pearson et al., 2002a). To date, there is no requirement in Australia to formally submit evidence of professional education activities undertaken by an individual nurse each year. However, a discussion paper was released by the Nurses Board of Victoria (NBV), in April 2006 regarding a proposed compulsory continuing professional development (CPD) program for Registered Nurses and Midwives. Recommendations included using a flexible program whereby the nurse accrues CPD points for 1 hour of CPD activity, with a cap on certain activities to ensure a range of learning activities are undertaken (Nurses Board of Victoria, 2007b, p. 9). This practice expectation was to be of all nurses, not only gerontological nurses and could form part of the RN re-registration process in the near future. The Australian Royal College of Nursing has also supported nurse education initiatives by providing on line education through their 3LP program (Royal College of Nursing Australia, 2009).

#### **National Boards**

The Council of Australian Governments (COAG) met in Canberra in April 2007. At this meeting it was announced that medical practitioners, nurses and midwives, pharmacists, physiotherapists, psychologists, osteopaths, chiropractors, optometrists

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and dentists would each have a national Board allowing them to practice in all States and Territories without having to re-register. The initiative was quoted as being necessary to improve workforce mobility, including in times of emergency or where it may be necessary to provide locum services in other States.

A new national nursing and health professionals registration system was implemented in July 2008 as reported in the Nurses Board of Victoria (2007b) 'Nexus' information publication. The implications of this change for individual RNs will take effect in June 2010. The new system impacts upon a health professional's registration and the accreditation of their training and education. These regulatory changes will affect all existing State legislation. It is hoped the changes will positively impact upon the registration and scopes of practice of nurse practitioners, by standardising these processes across all States and enabling a single State registration to be sufficient for a NP to practice in other States. This has not been possible in the past due to the different registration requirements of each State and definitions of practice of a NP. As at February 2009, no further progress has been achieved by the Victorian Nurses Board regarding the acceptance of NPs registered in other States.

### **Categories of NP practice**

Registered nurses generally apply to be a nurse practitioner under a category or categories of practice, for example the aged care, palliative care, mental health, or sexual health category/ies. Each State has determined in which categories they will support a NP to practice either as a registered individual or as part of their employed role at a registered health service. NP specific Masters programs' have commenced in

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Australian universities over the past 5 years to provide the means for nurses to register in their category of expertise.

Individual States have conducted or are presently conducting NP demonstration projects for their chosen categories. Generally the purpose of these projects is to establish the relevant drug formulary to be assigned to the various categories and the clinical practice guidelines (CPGs) that govern the administration of these medications, and the ordering of pathology tests and diagnostics for various medical presentations. A comprehensive list of some nurse practitioner categories that have been endorsed in NSW to date or may be considered for endorsement in Australia include those present in Table 1. These details were published in the NSW government publication, 'Being a Nurse Practitioner In New South Wales - Information for Registered Nurses who wish to apply for authorisation to practise as Nurse Practitioners in New South Wales, Australia' (State of New South Wales Nurses and Midwives Board, 2007, p.12). The categories of Older Person Nursing and Paediatric Nursing do not have sub-categories as do the other specialties, as they are considered an entire category on their own. In Victoria, endorsed NPs work in the areas of emergency, palliative care, women's health, nephrology, ICU liaison, young people's health, and wound management (State Government of Victoria, 2007). To date, there is still no registered ACNP in Victoria (Nexus, November 2009).

### **Nurse Practitioner registration in each Australian State**

The type of guidelines under which a NP must practise vary from State to State. For example, in SA each individual NP has their own drug formulary from which to prescribe. In NSW and Queensland (Qld), protocols similar to drug standing orders "dictate how and where NPs prescribe" (Dragon, 2008, p.22). In Victoria, the NP

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projects decide on the formulary and government bodies approve the list for individual categories of practice. Each State has separately identified how NPs are to be monitored and their practices defined, i.e. either through category based CPGs or service allocated CPG systems. As noted previously, the relevant category's drug formulary also differs from other categories, as does the ordering of pathology tests and diagnostics. In some States, for example Victoria, nurses must prepare and present their own CPGs with their registration application, whereas in other States eg. WA, the CPGs that NPs must abide by are developed and attached to a health facility rather than an individual practitioner. A national registering system will need to account for these differences.

**Table 1 – Nurse practitioner categories endorsed in New South Wales (source: State of New South Wales Nurses and Midwives Board, 2007, *Being a Nurse Practitioner In New South Wales - Information for Registered Nurses who wish to apply for authorisation to practi[c]e as Nurse Practitioners in New South Wales, Australia*, p.12.)**

NOTE:  
This table is included on page 40  
of the print copy of the thesis held in  
the University of Adelaide Library.

The development of the NP role has also varied across the country with some States only considering the nurse practitioner role for their health sector. Of the many thousands of nurses registered across Australia very few are nurse practitioners.



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Formal records of the individual categories and numbers of NPs registered under each category as a sub-set of nurses registration in States is not available. To establish the extent of nurse practitioner registration in each State, in August 2007 this researcher telephoned each Nurses Board in each State, to speak to the registering personnel division.

Table 2 provides this data in a State by State comparative format. Six of the eight States or Territories have endorsed the NP position to varying degrees. Four States currently recognize endorsed ACNPs either as an individual or as an organization based employee role. Only seven of the 234 registered NPs at that time were ACNPs. The State and Territory phone survey results are as follows.

As at August 2007, there were 29 NPs registered in Victoria, none of whom were ACNPs (Nurses Board of Victoria, 2007b, p.1). Of 21,644 registered nurses in SA, 24 were NPs with only 1 registered as a rehabilitation/habilitation – aged care NP (Nurses Board of South Australia, 2007). As of July 2007, there were 97 registered NPs in NSW from a population of 82,740 RNs (Nurses and Midwives Board of New South Wales, 2007); as of 8 August 2007 there were 103 but only 2 were registered in geriatric or aged care nursing.

The phone call to the WA Nurses Board identified of 17,535 registered nurses as of 20 August 2007, 52 were NPs with Board staff stating none had been attributed a specific NP category / title as the role was attached to a service, not an individual. The system whereby a NP was allocated to a category was being presently established (Nurses Board of Western Australia, 2007). This researcher knows of two aged care based NPs who were registered in areas of aged care to work as aged care

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NPs during 2006, whereas the Board's NP registering division knew of none as their records did not include details of the category of the nurse practitioners registered.

A publication issued by the Queensland Nursing Council (2006) which is the relevant registering body of NPs in Qld, identified that in July 2006, they issued their first nurse practitioner endorsement under the Nursing Act 1992. As of 2 July 2007 there had been 12 more NPs registered from the 45,373 RNs in Qld (Queensland Nursing Council, 2007). It is unknown how many of these are registered to work as ACNPs. Of 3,320 registered nurses in the ACT, 13 are NPs according to the 2007 Nursing and Midwifery Board Internal Systems Information (Australian Capital Territory Nursing and Midwifery Board, 2007). Again it is unknown if there are more than the two ACNP candidates who were completing their NP Masters degree and who participated in the National Aged Care Nurse Practitioner trial in the ACT in 2006 - registered to work as ACNPs. There are nil NPs registered at present in Tas or the NT as they have not completed their scoping and demonstration project activities. Further requirements and experiences of each State are outlined in the following sections.

**Table 2 - Numbers of Registered nurses in each State compared with registered NPs and ACNPs as at August 2007 – sources: each registered nursing board contacted via phone August 2007.**

<b>State</b>	<b>No. RNs</b>	<b>No. NPs</b>	<b>No. ACNPs or equivalent</b>
Vic	61,692	29	0
SA	21,644	24	1
NSW	82,740	103	2
Qld	45,373	13	0
Tas	–	0	0
WA	17,535	52	2
ACT	3,320	13	2
NT	–	0	0
<b>Total</b>		<b>234</b>	<b>7</b>

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### **Victorian legislation and registration requirements**

For the purposes of this study, the reference tool used to determine the Victorian legislative framework and, essentially, the scope of practice of the nurse practitioner candidate was the Nurses Act 1993. However, the newer Victorian Health Professions Registration Act 2005 must now be referred to by future practitioners. The terms relating to the registration of nurse practitioners remain similar between both Acts.

The new Act states that the Nurses Board of Victoria (the Board) remains responsible for determining whether a nurse can be registered and use the title of NP (Parliament of Victoria, 2005, p.34). The Board determines if a nurse is qualified to be registered as a NP and specifies in the endorsement, "the category or categories of nurse practitioner recognised by the Board with respect to which the nurse practitioner is qualified to use the title" (p.35). If the Board is satisfied that a registered nurse is qualified with respect to a category or categories of NP, they are then approved to obtain and have in their possession, use, sell or supply the Schedule 2, 3, 4 and 8 poisons within the meaning of the Victorian 'Drugs, Poisons and Controlled Substances Act 1981' (Drug's Act). These have been approved by the Minister under that Act, to be used by the particular category of nurse practitioner. They are also approved to function as a NP in their approved category only.

### **Three pathways for NP registration in Victoria**

To be considered for registration as a NP in Victoria, a candidate must have completed a Masters level education including an endorsed medication management module at this postgraduate level. They must have the experience to perform extensions to practice safely and competently with all the skills, leadership and clinical abilities of an advanced clinical nurse whilst working autonomously within a

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collaborative multidisciplinary team (State Government of Victoria, 2007). A NP in Victoria is also required to demonstrate they meet the Australian Nursing and Midwives Council National (ANMC) Competency Standards for Nurse Practitioners (2004).

There are three pathways to demonstrate the above requirements in Victoria and to becoming a nurse practitioner. The first pathway requires a Registered nurse to have completed an accredited Master of Nurse Practitioner course approved by the Board and to apply for registration within five years of completion of the course. They must then complete the Board's official application form, pay the prescribed fee, nominate their category of practice and declare that their expected prescribing practice is captured by the existing medication formulary for their selected category or make an application to have the existing formulary amended. As part of the Board's application process, they must also demonstrate years of experience in their chosen area of expertise. The formularies for the Victorian NP practice categories have been determined by Nurse Practitioner demonstration projects such as the research project which is the subject of this thesis. One of the areas of enquiry of this research was to establish the scope of practice of an aged care or gerontic nurse practitioner and establish the drugs formulary, commensurate with such advanced practices, for all future aged care nurse practitioner registrants (Nurses Board of Victoria, 2007a, p.9). Hence, registrants in Victoria must refer to the formulary from the relevant NP projects related to their chosen category when applying.

The second NP registration pathway accepted by the Nurses Board is for registered nurses who have worked recently at an advanced practice level for a minimum of two years or 5000 hours, and can demonstrate their advanced level of skills and

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knowledge obtained through other post-registration education, professional development activities and experience. These nurses would not have completed the Board approved Masters degree but may have completed another Masters or higher degree and a course in medication management/pharmacology that has been accredited by the Nurses Board of Victoria, and can demonstrate that they have undertaken a research subject at a postgraduate level. These applicants must provide sufficient documentary evidence to demonstrate that they meet the ANMC National Competency Standards for Nurse Practitioners. All such applicants are then interviewed by the Prescribing Practice Advisory Committee (Nurses Board of Victoria, 2007a, pp.9-10).

The third pathway relates to NPs authorised from other states or territories, or from New Zealand, who are seeking endorsement in Victoria. Mutual Recognition and Trans Tasman Mutual Recognition legislation has been established to assist with mobility of the workforce within Australia and New Zealand (Nurses Board of Victoria, 2007a, p.11).

The NP registering methodology used in Victoria differs from that in other States. However, all use a similar qualification expectation recognising the need for the role to be an advanced practitioner with a minimum Masters level education and demonstrated years of experience.

#### **Prescribing medications in Victoria**

In Australia there are various State equivalent medication management Acts of which the Victorian 'Drugs, Poison's and Controlled Substances Act 1981' (Drug's Act) is one example. Restrictions or provisions within an Act regulate the extent to which an

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individual can possess, prescribe, supply or sell poisons, controlled substances or drugs of dependence as defined in the Act and detailed in various 'Poison's Lists' in each state including the Commonwealth's Schedule of Poisons. In the Victorian Drug's Act, a Nurse Practitioner means:

a nurse practitioner within the meaning of the Nurses Act 1993 whose registration has been endorsed in accordance with section 8B of that Act as being qualified to obtain and have in her or his possession and to use, sell or supply Schedule 2, 3, 4 or 8 poisons that are prescribed under this Act (State Government of Victoria, 1981, Part 1 -4, p.11).

In Victoria, as is the general situation in the other Australian States and Territories, a registered NP is authorised to obtain and have in their possession and to

"use, sell or supply any Schedule 2, 3, 4 or 8 poison prescribed in the regulations in relation to the category of nurse practitioner specified in the endorsement of that nurse practitioner's registration in the lawful practice of his or her profession as a nurse practitioner in the category for which he or she is endorsed" (State Government of Victoria, 1981, Division 2-13,(1),(ba)).

Before a NP endorsed category can be established and a nurse registered in that category, the formulary of medications which NPs must comply with must first be approved by the Minister for Health's Poisons Advisory Committee. Following this approval, a parliamentary Regulatory Impact Statement process must be conducted to establish the list in regulation under the Drugs, Poisons and Controlled Substances Act. Once the list is established in the regulations for example, for aged care, future aged care NPs will be able to prescribe from the established list only. If another medication must be added to the list in the future, the details of the medicine must be submitted to the Governor in Council and a process of approval undertaken for

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the medicine to be added. It is therefore clearly important that projects identify as many medicines which an aged care NP may need to use to minimise the need to make further submissions to the Governor in Council (State Government of Victoria, 2007).

### **The NP scope of practice in Victoria**

The various Victorian Department of Human Services demonstration projects have defined the scope of practice of all NP categories accepted in Victoria. The drug formulary and list of allowable diagnostics are defined for each NP category through the Projects' findings. The allowable medicines and diagnostics must be described within the NP CPGs developed through the projects, to establish in what circumstances and conditions such medicines will be prescribed and diagnostics ordered (Lee, 2003). CPGs have had to be developed with all future NP applicants in mind and are available to all applicants through the Department of Human Services.

To become registered in Victoria as an ACNP, Clinical Practice Guidelines must be submitted with an application to the Nurses Board regarding the area of practice in which the candidate wishes to register, for them to approve. These must describe the extensions to practice which the NP will participate in, placing pressure on demonstration projects to be cognisant of the various settings within which, for instance, an ACNP will be required to practice in the future. Sufficiently detailed CPGs must therefore be prepared for use by all future as well as current registering ACNPs for residential, community and acute aged care environments as they must be submitted with the nurses ACNP registration application.

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### **Australian Capital Territory**

NP status in the Australian Capital Territory (ACT) differs from other States in that the individual is not registered as an independent practitioner because the NP role is attributed to a particular health service instead of the individual. A service must apply to be an approved site. The ACT Government's 25 November 2005 Notifiable instrument NI2005-448 outlines which nurse practitioner positions have been approved for which health care services, under the Health Regulation 2004 - Section 8 (ACT Parliamentary Counsel, 2005).

Approval to have a NP position has been granted to the following health services under Section 8, for the following categories as they have met the criteria for approval:

- Aged Care Nurse Practitioner, Aged Care and Rehabilitation Service, ACT Health.
- Aged Care Nurse Practitioner, Mirinjani Retirement Village, Uniting Care Ageing, South Eastern Region.
- Sexual Health Nurse Practitioner, Canberra Sexual Health Centre, The Canberra Hospital, ACT Health.
- Wound Care Nurse Practitioner, Continuing Care Program, Community Health, ACT Health.
- Emergency Department Nurse Practitioner, Calvary Healthcare.

The approval determines what drugs may be prescribed or supplied by the NP as opposed to the practice in Victoria and NSW where a registered NP is able to prescribe medicines under their category of practice. If a NP resigns from the NP role in one of the above five sites they are no longer able to practice as a NP (ACT Parliamentary Counsel, 2005).



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### **New South Wales**

In NSW, three pathways exist to apply for NP status that are similar to those used in Victoria. The first pathway relates to applicants who have completed a Masters course approved by the Nurses Board for the preparation of NPs. The second relates to applicants who have not completed an approved NP program. It is necessary to submit a portfolio of evidence in relation to equivalent education and experience in order to progress to an interview. The third path relates to persons who are NPs in other States or New Zealand as part of the previously mentioned mutual recognition system.

The NSW Minister for Health introduced the Nurses Amendment (Nurse Practitioners) Bill in 1998, which described the “nurse practitioner” term as a “registered nurse with extensive knowledge and skill, operating at an advanced level of practice” (State of New South Wales Nurses and Midwives Board, 2007, p.3). The publication titled “Being a nurse practitioner in New South Wales” describes the initial intent of the NSW Government to develop rural and remote NP positions which were extended to metropolitan health facilities following the initial NP trial project’s findings. In December 2000 the first two NPs in NSW were authorised. This has significantly expanded to 97 NPs registered across the range of areas of practice and two midwife practitioners (State of New South Wales Nurses and Midwives Board, 2007). The 2006 National Competency Standards for the Nurse Practitioner published by the Australian Nursing and Midwifery Council (ANMC) are now established as the guiding tool for NP education institutions wishing to conduct courses preparing advanced practice nurses for NP status in NSW (p.3). NPs can be employed in public health institutions or practice independently in their relevant registered category or categories of practice.

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### **Western Australian**

In WA a nurse can be registered in a NP category but the medications they can prescribe and supply are dictated by the area they are working in rather than a category based drug formulary, and whether it has been designated as an approved area. There has to be a demonstrated need for a NP in the area, then the health service or organisation must apply in writing to the Director General of Health for an area to be designated. On the written advice of the Chief Nursing Officer, the director will designate the area as one in which the NP can practice. The organisation has to supply clinical protocols for that designated area and the NP must practice within those protocols. They are limited to ordering Schedule 1 and 4 medicines.

The Nurses Board in WA has also released a Nurse Practitioner Code of Practice 2004 (Nurses Board of Western Australia, 2004) which establishes the framework for the exercise of functions of a NP. This addresses issues of medication management such as possession, use and supply of poisons, diagnostic requests and undertaking testing, therapies or treatment. The Nurse Practitioner Code of Practice 2003 can be considered in any disciplinary proceedings against a nurse practitioner as is the scope of practice outlined in the legislative framework. The scope of practice of a NP in a designated area is governed by the Nurses Act 1992 (as amended), the Poisons Act 1964, the approved designated area's clinical protocols under the Poisons Regulations 1965, the Nurses Code of Practice 2000 and the Nurse Practitioner Code of Practice 2003 (Department of Health Western Australia, Office of the Chief Nursing Officer, 2003, pp.12-16).

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### **Queensland**

In Qld, the first NP was registered in November 2005. Health Service Districts wishing to implement the role are being resourced to establish their implementation framework and documentation as the Qld system operates similarly to the WA and ACT framework. Each organisation wishing to employ NP services must identify the need for the NP and develop job descriptions, policies, Health Management Protocols and other information resources which will support the designated role. NPs have to be employed by an approved institution or organisation (Dunn, 2006, p.25). The minimum educational requirement to be an endorsed NP in Qld is a Nurse Practitioner Masters course with the applicant demonstrating 5 years of working experience in the specialty area. No ACNPs had been registered by the end of 2006 in Qld (Dunn, 2006, p.29).

### **South Australia**

In SA, NPs are currently registered in areas including mental health, dermatology, geriatrics and neonatal intensive care. Two aged care services have participated in a South Australian aged care NP trial project and two others in the National Trial funded by the Commonwealth Government. In October 2005 the Control Substance Act 1984, South Australian Control Substance (Poisons) Regulations 1996 were modified to allow pharmacists to dispense a NP written prescription. A framework for NPs to obtain an approved prescribing formulary and /or supply of medication authorisation has been commenced by the Department of Health (Dunn, 2006, p.25). NPs in SA are assigned to a role as per the ACT arrangement rather than registered as independent practitioners who can translate their services across any site regardless of the organisation's registration.

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### **Tasmania and the Northern Territory**

In Tas and the NT, only pilot projects, in areas other than aged care, have commenced. Therefore no NPs let alone ACNPs are yet registered.

### **National Registration issues**

In 2006, the Australian Nursing and Midwifery Council (ANMC) issued National Competency Standards for the Nurse Practitioner. These have now been established as the guiding tool for education institutions wishing to conduct courses preparing advanced practice nurses for nurse practitioner status in many Australian States. This set of consistent expectations is envisaged to enable further articulation of the role across the country to aid in implementing the aforementioned national health professional's registration and training and education accreditation system enacted in July 2008 and to be implemented in 2010.

However, as described previously, despite a call for national uniformity, each State of Australia has established a different legislative and regulatory framework of NP practice. This means difficulties may be experienced by a NP for example, who was not required to submit their own CPGs in registration activities in their first registering State (as organisations were responsible for these in that State) but is required to do so when they seek registration in a new State which does require CPG submission (Victoria, for example). In WA and the ACT, NPs cannot be registered as independent practitioners because the NP role is attributed to a particular health service or government body instead of the individual. Their category of practice is defined by their employment role. The regulatory approval provided to these health services determines what drugs may be prescribed or supplied by the NP, as opposed to the Victoria and NSW situation where a registered NP prescribes medicines under a

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category of practice (ACT Parliamentary Counsel, 2005). It may be difficult to translate a health service orientated NP registration to an individual category of practice NP registration in another State.

Legislative and regulatory restrictions on NP practices in each State regarding the prescription of medications, implementation of advanced clinical procedures and ordering of diagnostics will need to be reviewed under a national registration context. Such differences could restrict NP employment opportunities in other States.

It is expected however that the Mutual Recognition Act 1992 (Commonwealth) or the Trans Tasman Mutual Recognition Act 1997 (Commonwealth) can be applied to assist those wishing to practice as a NP in another State or Territory of Australia or New Zealand until uniformity occurs. To apply to be a NP under these conditions, a nurse must first at least be currently registered as a nurse in the new State at the time of application or must concurrently apply for such registration. However, if there are restrictions / conditions on the NP's practice in the original State, Territory or Country of registration / authorisation, such can be expected to also apply in the new State or Territory. Therefore, the area/context under which the NP has previously been registered will apply to the new state or territory also (Nurses Board of Victoria, 2007a, p.11; State of New South Wales Nurses and Midwives Board, 2007, p.31).

Hence, when an ACT or WA NP wishes to work in another State, their differing registration conditions will make it difficult to attribute a defined category of practice to them in the new State, based on their previous role.

#### **Medicare benefits for professional services**

The recognition of the role of NPs in Australia has begun with NPs considered approved professionals under the Australian Government's Medicare benefits scheme

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in the 2009 Federal Budget (Australian Government, 2009). Under the scheme, Medicare benefits are only paid for professional services provided by eligible doctors, some dentists, optometrists and eligible allied health professionals who have been allocated a provider number (Australian Government et al., 2007a, p.16). Eligible allied health professional practitioners include some Aboriginal health workers, audiologists, chiropodists, chiropractors, dentists, diabetes educators, dietitians, exercise physiologists, mental health workers, occupational therapists, physiotherapists, podiatrists, psychologists, osteopaths and speech pathologists. In June 2009 the Australian Government budget conferred PBS and MBS claiming rights to registered NPs for the first time.

Through endorsement, professionals with a provider number are enabled to:

- (i) attend to a patient and have their services reimbursed or subsidised under the Medicare Benefits Schedule (MBS) scheme,
- (ii) order pathology and diagnostic tests under the MBS scheme, and
- (iii) prescribe medicines and have these supplied to patients at a government subsidised rate under the Pharmaceutical Benefits Scheme (PBS).

This ensures the recipient (patient) receives Australian Government reimbursement for both services and medicines (Australian Government Department of Health and Ageing, 2007a). Exclusion from receiving Medicare Benefits does not necessarily affect a practitioner's ability to prescribe pharmaceutical benefits, or refer patients to consultant physicians or specialists, or order pathology and diagnostic imaging services (p.23). However, it does place the cost of such services, medicines and tests on the consumer, if they are ordered by a professional who is not included in the approved professionals list. Hence, prior to the change to the rights of NPs, which

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will be recognised in 2010, medicines ordered by a NP are to be supplied by a pharmacist at full price, yet a medical practitioner can prescribe the same item for a fraction of the cost to the consumer. A Victorian palliative care NP remarked that a box of morphine 5mg per ml costs her patients \$29-30 to purchase using a prescription she writes. However, it costs \$4.50 if written by a Provider authorised GP. Dragon (2008) describes the significant negative experiences of NPs in Australia at the present time, stating that without the PBS and MBS scheme benefits, patients and families must wait until a medical practitioner can write a prescription or order a test, causing delays in treatment and creating a resource heavy system, effectively defeating the purpose of the NP role.

Other considerations include the rule where Medicare benefits are only paid to practitioners where Medicare Australia has issued the practitioner a unique provider number for the actual physical location in which they work (Australian Government et al., 2007a, p.38). Hence, without a provider number (relevant to a particular work location), a recipient of a NPs' services must pay a service fee without Medicare reimbursement or subsidy, making the independent practitioner NP role financially viable for consumers, because medical practitioners can attend to a person's needs in the same or in an advanced manner, and offer subsidised care. This is a significant barrier to introducing the role of a NP into any practice setting other than an employed organisational setting where the consumer does not have to pay for a visit. This is true for all NPs in Australia in that any NP wishing to be employed in their own practice will find it impossible to compete with GP practices whilst reimbursement is withheld.

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Gardner, Gardner, Middleton and Della (2009) demonstrated in their Australian nurse practitioner national census conducted in 2007 that greater than 70% NP respondents stated that lack of Medicare provider numbers and lack of authority to prescribe through the PBS was "extremely limiting to their practice". The Federal Budget changes will potentially reverse that impact. An article by Dragon (2008) stated that Australia lags behind other countries where NPs are working to capacity such as in New Zealand and the US where NPs are accepted as qualified health professionals providing care based on their education, knowledge and judgement, as is the case for other health professionals (p.22).

### **2.3 THE AUSTRALIAN AGED CARE INDUSTRY'S REGULATORY FRAMEWORK**

#### **The Aged Care Act 1997**

In 1997, the Federal 'Aged Care Act, 1997' (the Act) was proclaimed. One of the purposes of the Act was to provide the legislative and regulatory framework to achieve the objects of the Act. This included the requirement for aged care facilities to promote a high quality of care and accommodation that met the needs of individuals and protected their health and well-being (Appendix 1, Commonwealth of Australia 1997a, Division 2.1 (1) (b), (c)). Hence nurses working in RACFs must be cognisant of these requirements and practice in such a manner that supports them.

#### **Approved Provider Requirements**

Only an Approved Provider (a legislated term) that has been approved by the Commonwealth can receive funding for the residents living in their aged care facility and this approval cannot be transferred or sold unless a lengthy Commonwealth



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approval process is undertaken. Under the Act, 'Approved Providers' of Australian Government-funded residential care services have responsibilities that not only relate to the quality of care they provide, but they must also ensure the protection of user rights, accountability for the care that is provided and to ensure the suitability of their key personnel to meet those requirements amongst others. The Act states that "[f]ailure to meet these responsibilities can lead to the imposition of sanctions that affect the status of approvals and similar decisions under Chapter 2 (and therefore may affect amounts of subsidy payable to an approved provider)", (Commonwealth of Australia 1997a, Division 3.4). One of the sanctions which can be imposed includes the revocation of an approved provider's status, the consequence of which is to lose the ability to receive federal funding and provide any residential aged care services.

At present, a single aged care place or 'resident bed' across the country is valued at an average of \$60,000 (Underwood, 2008). The revocation of an approved provider's status results in disallowing the approved provider to sell their places to a third party because revocation means a cessation of the approved provider's status (the ability to receive funds) and aged care activities. The Act therefore requires an approved provider to be accountable for all outcomes within the service, including staff interventions, which necessitates the implementation of quality care management systems, otherwise severe penalties apply.

### **Aged Care Accreditation**

The formal accreditation process is one of the main activities subsequent to the Act, which aged care services have to undertake in order to demonstrate they provide quality care services by appropriately qualified key personnel, and that users' rights are respected. During accreditation, the organisation's registered company, the

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Approved Provider, is required to demonstrate that they have met and continue to meet various management, clinical, lifestyle and safety Accreditation Standards (Commonwealth of Australia 1997a, Division 54). The management and staff must document and demonstrate through their documentation that they meet these standards in their every day activities and records, for the approved provider.

In the aged care accreditation standards, the clinical outcomes expected of aged care services require the input of professional registered nurses (RN). The role of an ACNP in residential care could be to support the staff and service in achieving quality care outcomes by providing expert services and advice. In the present environment where there is a deficiency of nursing resources (Jackson, Mannix & Daly, 2003; Katz, 2003; McDonald, 2001), the need for an ACNP has become even greater, as the advisory role played by NPs can support non-registered and inexperienced registered staff to provide efficient, quality, targeted gerontology based care.

The aged care accreditation standards' expected outcome related to regulatory compliance requires that "the organisation's management has systems in place to identify and ensure compliance with all relevant legislation, regulatory requirements, professional standards and guidelines" (Aged Care Standards and Accreditation Agency Ltd., 2007, p.15; Commonwealth, 1997b, p.17). Best practice guidelines are generally referred to by Care Managers to develop organisational policies and procedures to ensure staff are accurately informed to achieve quality outcomes in a manner that complies with professional standards and guidelines.

Various guides for aged care accreditation assessors exist to establish if an organisation meets the Accreditation Standards' Expected Outcomes including the "Results and Processes Guide" (Aged Care Standards and Accreditation Agency Ltd.,

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2007). Appendix 2 of this Guide (2007, pp.32-33) states that assessors must consider the following, when assessing this accreditation Expected Outcome:

- how the home identifies all relevant legislation, regulations, professional standards and guidelines that it must comply with in relation to Standard Two which addresses clinical and care areas,
- whether service policies and procedures are developed or modified as appropriate to ensure alignment with such,
- how information is made available to staff and others, in procedures for example, so that practices conform to legislative and regulatory requirements,
- whether allocation for ensuring regulatory compliance is to individual staff and that the home can demonstrate it monitors such compliance.

An ACNP could be utilised to knowledgably determine which components of standards and guidelines were required for an organisation's quality systems and the manner in which such would assist the residents within the organisations they support, from the perspective of providing extended ACNP services that a medical practitioner would normally have supplied.

### **Accreditation Grant Principles and Continuous Improvement**

The Accreditation Grant Principles (Commonwealth, 1997b, Section 3.18) state that an accredited provider must:

- a) ensure that the residential care service complies with the Accreditation Standards, and
- b) undertake a process of continuous improvement measured against the Accreditation Standards.

In Section 3.19 of the Principles (Commonwealth, 1997b),

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- a) an accredited provider must give the accreditation body (i.e. the Agency) a Plan for Continuous Improvement for the accredited service,
- b) the plan must include an explanation of how the service will address any matters identified by the assessment team during a site audit, and
- c) the plan must be in a form approved by the accreditation body.

These legislated requirements demonstrate that the accreditation process is designed to assess whether quality of care is delivered within a continuous improvement framework (i.e. the Aged Care Act, and State, Territory or local government regulations). Due to this legislative requirement, the expectations of organisations' practices and systems have steadily increased since the introduction of the Act. Best practice guidelines continue to be developed and released by government bodies or organisations that receive grants to prepare specialist information for the industry. The internet and educational resources provide further information to support clinical and care staff. These initiatives however have increased the accreditors' expectations of services provided. The continuous improvement mandate has further extended expectations that a service continuously achieves more and more whilst aiming for excellence and relevance in practice.

This thesis discusses how the ACNP expert role may assist in improving services and information provision for staff as a consequence of the ACNP's ability to practice at an advanced level with knowledge of contemporary practices and using best practice guidelines whilst prescribing treatments and planning for provision of appropriate clinical interventions. This knowledge and ability can be used to inform other staff of quality interventions and contemporary procedures. Through this involvement, ACNPs can potentially motivate staff who may also wish to extend their role to that of an ACNP.

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### **The role of Professional and Government Guidelines**

According to the aged care accreditation standards, organisational policies and procedures must demonstrate consideration of all professional standards and guidelines relevant to the area of practice in which they exist. As outlined above, there are a range of clinical, ethical, professional and practice guidelines that are relevant to aged care. Aged care assessors, the auditors of the aged care accreditation standards, will often require management to demonstrate the position they have taken in managing a particular care area, i.e. from what evidence has the organisation's procedures been developed. There is an expectation that management and staff understand and implement professional guidelines regardless of the current deficiency of registered nursing staff and a predominantly non-registered nursing staff base.

Professional nursing specific guidelines that describe expectations of aged care nursing staff and outcomes of care provision include the following publications:

- Commonwealth of Australia, Department of Health and Ageing's 2001 publication, "Code Of Ethics And Guide To Ethical Conduct For Residential Aged Care"
- The Australian Nursing Council Inc.'s Code of Ethics and Code of Professional Conduct for Nurses in Australia
- Geriaction's Competency Standards for the Advanced Gerontological Nurse
- The Victorian Nurses Board's Professional Boundaries Guidelines for Registered Nurses in Victoria.

The Australian College of Health Service Executives (ACHSE) has also published two 'guides for leaders in aged care' (Australian College of Health Service Executives, 2001a; Australian College of Health Service Executives, 2001b).

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Evidence based clinical practice-related guidelines for aged care, issued by the Australian Government Department of Health and Ageing include:

- Decision making tool: Responding to issues of restraint in Aged Care
- The Guide: Implementing occupational health and safety in residential aged care.
- Standards for Aged Care Facilities
- Guidelines for a Palliative Approach in Residential Aged Care
- Guidelines for Medication Management in residential Aged Care Facilities
- Preventing falls and harm from falls in older people kit
- Pain in residential aged care facilities: Management Strategies
- Infection control guidelines
- The 'NATFRAME additional resource list', previously known as the Draft National Framework for Documenting Care in Residential Aged Care Services

The role that guidelines play in the aged care setting can be contentious. For example, an individual assessor may require an organisation to demonstrate the implementation of best practice guidelines, regardless of care outcomes, despite the fact that the aforementioned documents are simply guidelines, not practices which are required to be implemented to meet regulations. Distinguishing between actual practice needs and simple attractiveness of a system taking into consideration fiscal realities and quality outcomes is the realm of an expert practitioner. An ACNP could be expected to knowledgably determine which components of standards and guidelines were required for an organisation's quality systems and the manner in which such would assist the unique population present at the facility. This study

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demonstrates the respect staff had for the extended knowledge of the ACNP candidate.

### **Care Documentation requirements**

Accreditation determines if an organisation receives any funding from the government and the level of funding is linked to high quality, accurate and comprehensive expert care documentation, the requirements of which are extensively detailed (Commonwealth of Australia, 1997c). The success of Australian RACFs to maintain their accreditation status and subsequent funding level is dependant on their ability to provide the best health care that utilises evidence based practices, and is cost effective (Pearson, Schultz & Conroy-Hiller, 2006). Residential aged care facility staff must obtain and document information about all aspects of a person's health and well being and plan and deliver quality, evidence based strategies to meet individual resident's needs. They need to use principles of evidence based practice (Nay & Garratt, 2004, p. 309) whilst documenting this care in a framework which, up until March 2008, also provided evidence for the government's Resident Classification Scale scoring system (Australian Government, 2005, p.5:1). The new documentation system used by staff and the government to determine levels of funding to individual aged care facilities, the Aged Care Funding Instrument (ACFI) commenced on 20th March 2008 and requires the involvement of registered health professionals. [removed sentence]

### **Regulation and staff retention at risk**

The significant regulation of the industry has resulted in documentation practices that significantly impact on registered nursing staff recruitment and retention (Australian Nursing Federation, 2005; Brownrigg, 2005a; Brownrigg, 2005b; Stein, 2002)

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because staff members find these requirements onerous. The Australian Government decreased or withdrew subsidies from aged care facilities if documentation completed by nurses or care staff did not meet the specific requirements of the previous RCS system. They can now do so if documentation does not meet the requirements of the current ACFI system. There is a dearth of clinical experts available for aged care to document according to these and professional requirements simultaneously. This author knows that many aged care facilities employ a 'documentation person' to ensure key words and phrases are present in assessments to prevent loss of income as opposed to employing a clinical expert who could both document and implement the care.

An experienced RN workforce is required to provide the services necessary for the complex needs of older persons. However, staff retention in aged care facilities has been seriously compromised by these documentation requirements (McDonald, 2001). Robinson and Rosher (2006) found that staff turnover rates in aged care facilities in the US range from 28% to 59% for registered nurses, 27% to 61% for the Australian equivalent enrolled nurse role and 30% to 143% for nurse aides and the key to reduce these rates is by improving job satisfaction. Stolee, Hillier, Esbaugh, Griffiths and Borrie (2006) found that aged care staff in their study indicated the ACNP had a positive impact on "continuity of care, comprehensive documentation... and timely access to medical care" (p.31). Effective gerontological nursing processes are at risk if experienced RNs are not available to service older persons' needs in residential aged care (Feldt, Fay, Greenberg, Vezina, Flaherty, Ryan & Fulmer, 2002). The provision of quality services using a structured quality approach to care, supports nurses to provide professional care which in turn can



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entice them to remain a nurse (White, Smith, Bowar-Ferres, Salinas, O'Connor, Lucas. & Fitzpatrick, 2002). An expert ACNP can support staff in these areas also.

### **The Resident Classification Score and the ACFI**

A resident's 'Resident Classification Score' determined by the RCS system determined the funding received by RACF proprietors for individual resident's from 1997 until March 2008 (Australian Government Department of Health and Ageing, 2005a, p.5:1-5:154). The resident 'score' was determined from the care planning and associated ongoing documentation conducted by nursing and care staff. Consequently, care and nursing staff were responsible for ensuring quality documented assessments, care plans and outcomes. Table 3 represents the RCS categories of all aged care facility residents throughout Australia as of 31 December 2006 (Australian Government Department of Health and Ageing, 2007b). Essentially, the higher the RCS category, the higher the level of resident dependency and required support. This table demonstrates the high percentage of category 1 (highest needs) residents in residential aged care as at the end of 2006.

The new funding appraisal tool, the ACFI, allocates funding based on dependency as assessed by relevant health professionals (Australian Government Department of Health and Ageing, 2006a), not ongoing care documentation. The amount payable in respect of a particular resident depends on the ACFI question ratings. A clinical assessment report conducted by a suitably qualified health professional is expected to support any claims, for example for the ratings for ACFI 6 (Cognition) and ACFI 10 (Depression), a health professional is required to complete the validated clinical assessment tools, the Psychogeriatric Assessment Scale and the Cornell Depression scale.

**Table 3 - Number of residents in each individual category (S1-8) at admission (including former nursing home and hostel categories) in each State as at 31 December 2006. Residents are grouped into high care if RCS1 to RCS4 inclusive or low care if RCS5 to RCS8 inclusive (Australian Government Department of Health and Ageing, 2007b).**

**NOTE:**

This table is included on page 66 of the print copy of the thesis held in the University of Adelaide Library.

### **Health practitioners and assessments**

As stated previously, for the purposes of ACFI, a clinical report will be accepted if it has been completed by consultants in the following disciplines: general or specialist medical practitioner, physician, geriatrician or psychogeriatrician, registered psychologist, nurse practitioner or clinical nurse (mental health).

To establish the veracity of a claim for these ACFI domains, it is crucial for nursing staff in aged care to obtain source documents which clearly state a resident's diagnosis, provisional diagnosis or re-confirmation of a past diagnosis. An ACFI reviewer expects to view source documents that have been completed within the last

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six to twelve months (Australian Government, 2006, pp.2-5) by a recognised consultant. As nurse practitioners are amongst the list of recognised consultants, it is expected that their presence in residential aged care shall become more recognisable as a valuable resource to meet these additional needs' assessment responsibilities.

### **2.4 A PROFILE OF THE AUSTRALIAN AGED CARE INDUSTRY**

#### **Provision of community and residential aged care places throughout Australia**

Each year the Australian Government announces various reforms for the aged care sector, including the release of additional federally funded aged care places in the annual Aged Care Approvals Round, to support an increasingly ageing population. Reforms announced on 11 February 2007 as part of the 'Securing the future of aged care for Australians package' program included the release over the next four years of more community care places, high care places in aged care homes and in people's own homes and more respite services for carers (Commonwealth of Australia, 2007). These places are only supplied free to RACFs who can demonstrate quality systems and outcomes for residents in their organisations.

Approved Providers as described in the Aged Care Act 1997, apply for these additionally released places, to enable an expansion of their existing services or the establishment of new service types such as the addition of community services in their organisation. Organisations from all sectors of the aged care industry, including retirement village owners, publicly listed companies, private incorporated bodies and not-for-profit organisations apply for these aged care 'places'/ bed licenses. "The

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number of places made available is based on the planning ratio, the current allocated ratio and population projections" (Commonwealth of Australia 2007, p. 3).

In 2006, to determine how many aged care places should be funded, the Australian Government used a provisional ratio of 108 community and residential care places for every 1,000 people aged 70 years and over. This consisted of 88 residential places comprising 48 low care, 40 high care places and 20 community places. In 2007, the overall provision ratio was increased from 108 to 113 places per 1000 people aged 70 years and over. This new target ratio, to be implemented by the end of June 2011, includes 44 low care, 44 high care places and 25 community care places, per 1000 people aged 70 years and over (Commonwealth of Australia, 2007).

As of 31 December 2007, of 151,398 residents in Australian Government-funded residential aged care services, about two-thirds (105,593) were classified under the RCS system to receive high care funding for high level care services and one third (45,805) were categorised to receive low care funding (Australian Government Department of Health and Ageing, 2007b). There were 32,588 persons receiving federally funded community aged care packages as at 31 December 2005 (Australian Government Department of Health and Ageing, 2006b). The government stated that it expected to allocate approximately two-thirds of the more than 6,800 new residential care places made available in the 2007 Aged Care Approval Round to high care places (p.2). High care places are those which are clinically complex and require significant nursing support. In 2007, applicants were able to apply for 6,811 residential aged care places, 2,327 community aged care places, 1,566 flexible aged care places, in the form of Extended Aged Care at Home packages and up to \$39.4 million in capital grants (p.4).

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### **Ageing in Place**

One of the key factors the Australian Government Department of Health and Ageing considers when determining which organisation is allocated these complementary additional residential or community aged care funded licenses / places in the annual Approval Round process, is whether or not the service provides quality care in an environment that supports continuity of care, regardless of a person's increasing care needs. This philosophy is known as 'ageing in place' and it refers to the continued provision of services in the same facility, even the same bedroom, to a person who initially required only community or low care clinical services but who progresses to requiring higher level clinical care services (Commonwealth of Australia, 2007, p.13). Grants are issued for the building of services which will support this concept and in 2007, retirement villages that were willing to support an ageing in place concept were encouraged to apply for places as part of the Retirement Villages – Ageing in Place initiative (Commonwealth of Australia, 2007, p.2).

The expectation, with ageing in place facilities, is that low care organisations that provide services to residents requiring minimal care will support an older person to live the remainder of their lives in their chosen facility, regardless of their increasing incapacity or confusion by providing high level care services as necessary, which in turn minimises relocation stress. Relocation of an older person has been shown to cause serious stress demonstrated by physical and psychological responses manifesting as confusion, disorientation and aggravation of existing health problems. Minimisation of further relocation can reduce the numerous adverse physical and psychological responses that have been documented in the transition from independent living to nursing home (Krichbaum, Ryden, Snyder, Pearson, Hanscom,

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Lee, and Savik, 1999; Mikhail, 1992; Resnick, Yalla, and Laurino, 1989; Walker, Cox Curry & Hogstel, 2007).

Untoward responses are experienced whilst someone goes through the stages of becoming known, learning to know others, learning the rules, creating a place and making the best of it (Heliker & Scholler-Jaquish, 2006). The study by Heliker et al. (2006) of the expectations and perspectives of 10 newly admitted nursing home residents, over the first three months of admission, found they felt homeless (p.37). Feeling homeless was described as a "recurring feeling for the first month", where there was no-one to mirror the very self of the individual such as occurs when one shares space with friends and loved ones who tell you who you are (p.37).

A home also provides "familiarity, security, and control needed by elders' " where an individual is able to 'be' around familiar furniture, memories and meaningful relationships (p.37). Residents who first enter a nursing home fear that the other residents are mirroring what they will become which is unsettling and frightening for some, where staff "don't know the meaning of me" stated one participant (p.38). Their grieving must be supported. As time passes, residents may create a place of their own, finding new 'neighbours' in the staff and fellow residents, but this presumes they don't experience a catastrophic event in the meantime, such as depression, a fall or serious loss of memory which may have serious consequences.

'Ageing in place' now also refers to the continuation of service provision for retirement village residents, i.e. services provided in a resident's own home using community care funded 'care provision packages', through to the provision of services in an aged care facility that is familiar and generates a feeling of security.

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This philosophy minimises the potential for transitional stress. To avoid this therefore, it is essential that holistic services are provided that recognise individuals' particular clinical, social, emotional, psychological, cultural and spiritual needs. Such services must be provided by health professionals who have the knowledge and skill to do so, otherwise residents will not receive the support their increasing clinical and physical needs require.

Implementing the ageing in place concept requires professional health care providers who can assess, monitor and recognise a person's changing needs and direct the implementation of increasing clinical and care services in a quality manner. The practitioners must be able to act quickly because often a pre-cursor to admission to a higher care facility is an adverse medical event. Adverse medical events are also most common in the first few months of admission hence pre-emptive nursing is required. Such activities fall under the scope of a registered nurse's practice but an ACNP is better qualified to detect nuances and changes that necessitate the institution of increasingly targeted services because ACNPs have greater assessment skill and practice, as described in the next Literature Review Chapter. They are also able to institute care practices that can treat individuals in a timely manner, potentially reducing complications and hospital admissions from relocation stress initiated adverse events.

## **2.5 THE SHORTAGE OF NURSING PROFESSIONALS IN AGED CARE**

### **Worldwide shortage of nursing staff**

As identified previously, the worldwide and Australian registered nurse shortage and ageing workforce phenomenon is impacting on the availability of RNs in aged care

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(Boyne, 1999; Jackson et al., 2003; Katz, 2003; McDonald, 2001; Sheen, 2001; Victorian Government Department of Human Services, 2004). This has translated dramatically into a shortage of registered nurses in aged care as identified by the Australian Government's Aged Care Workforce Study (Australian Government Department of Health and Ageing, 2005b; Richardson & Martin, 2004). In Australian RACFs, there is often only one RN on duty for up to 60 residents. Personal care workers and to a lesser extent, RNs Division 2 (known as enrolled nurses in all states but Victoria), make up the majority of the RACF workforce in Australia (Richardson & Martin 2004). Similarly, studies in US nursing homes indicate that most personal care services in nursing homes are provided by non-professionals (Decker, Dollard & Kraditor, 2001; Foner, 1994; Harrington, Kovner, Mezey, Kayser-Jones, Burger, Mohler et al., 2000).

#### **The Australian aged care workforce**

Richardson and Martin, (2004) in their Australian aged care workforce study concluded that the typical aged care worker is female, aged 50, married, Australian born and in good health. Although they suggest that the workforce is highly educated, this can be misconstrued, as they include a Certificate III in Aged Care in their definition of well-educated. This is the most common post-school qualification found in aged care, and is a non-nursing, non-clinically focused qualification. The study found that in 2003, of the 116,000 mostly part-time, direct care employees, 67,000 were Personal Carers (PCs), 15,000 were enrolled nurses, 25,000 were Registered Nurses, and 9,000 were Allied Health workers (comprising mainly of diversional and recreational officers). This shows that only 21% workers in aged care are registered nurses, including those in nursing management positions. Hence less than 21% staff monitor resident's 'multiple medical diagnosis clinical outcomes'



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and side effects, and implement clinical practices based on a professionally based, clinically educated stance.

The most common worker is a personal carer, working a regular daytime shift, 16-34 hours per week. Only a small minority of the aged care workforce is employed full-time (11%) with this percentage highest for registered nurses (at 18%) and lowest for PCs (at 8%). Two-thirds of the workforce work as permanent part-time employees, the remaining employees are casual and to a lesser extent agency staff with 3% being contracted or obtained through a nursing agency (p.p. 2-4).

#### **An aged care labour market in crisis**

Interestingly, Richardson and Martin (2004) state there are "few signs" that the aged care labour market is "in crisis, or even under serious stress" yet they quote the turnover of the workforce each year is a quarter of personal care workers and close to one in five nurses either by a current employer or if not by the whole industry. They concede there are "some indications of stress" in this labour market, in particular that nurses (especially RNs) are substantially older than the typical female worker and that nurses are less content with their jobs in aged care than are PCs and Allied Health workers. They also concede that there is a relatively high number of vacancies for Registered Nurses and with the large turnover of staff, there are some recruitment difficulties.

Residents of aged care need, and are justified in expecting, quality care from a stable, clinically skilled workforce that understands them as individuals following a period of familiarisation with them as people. As noted previously, relocation of an older person has been shown to cause serious stress demonstrated by physical and

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psychological responses manifesting as confusion, disorientation and aggravation of existing health problems (Aneshensel, Pearlin, Levy-Storms, and Schuler, 2000; Krichbaum et al, 1999; Mikhail, 1992; Resnick et al, 1989). By indicating there are "few signs" that the aged care workforce is "in crisis, or even under serious stress", Richardson and Martin (2004) demonstrate a lack of understanding of the issues facing aged care and older persons living in unfamiliar, stranger-filled aged care environments, who rely on routine and consistency for a period of at least 6-12 months after admission, before they feel they are at home. As noted in the above studies, if older persons are not provided with consistency, they experience significant relocation stress, manifesting as negative clinical and psychosocial outcomes. An ever changing workforce or lack of consistent staff contributes to the stress experienced by older persons as it is difficult to consistently meet residents' deserved demands and quality care needs if staff are continually 'turning over' (Aneshensel et al, 2000; Krichbaum et al, 1999; Mikhail, 1992).

Richardson and Martin (2004) conclude that "quite high levels of turnover of direct care staff, especially PCs" is considered satisfactory as there is "not a long training period required in order to be eligible to perform PC work". Therefore the supply of workers for these roles will be quite responsive to modest changes in the relative attractiveness of pay and conditions (p.5). PCs, however, have the most contact with residents of RACFs because they provide the direct care and therefore should be the most stable component of the workforce providing consistent quality care to residents. Similarly, a decreasing registered nursing workforce will compromise the ability of aged care services to sustain quality clinical care provision through PC leaders who have the necessary knowledge. If RN numbers decline, this places pressure on the remaining RNs to be gerontological nursing experts, who must

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manage an increased resident workload with untrained staff. At the same time they must implement best practices using current gerontological nursing theory in order to prevent clinical problems arising and subsequent to this, possible litigation.

The changing nature of the workforce makes it imperative for the RN leaders of the workforce to direct and manage resident care in such circumstances with clear knowledgeable instructions that succinctly direct PCs to a resident's needs following a meticulously comprehensive assessment of clinical, psychosocial, emotional, physical and other needs. An ACNP could potentially provide this leadership as well as support practice development amongst other RNs and enrolled nurses.

### **Difficulties in attracting nurses**

There are many other reasons why aged care finds it difficult to attract nurses, one being the well documented perception held by nurses that aged care is a less professional or interesting environment. Nurses in aged care also often work as sole practitioners and can be bereft of collegial support, making it a difficult environment in which to work (Jackson et al., 2002; Stolee et al, 2006; Stoyles, 2002; Wilkes, LeMiere & Walker, 1998). The elderly population presents with both acute and chronic diseases, including Alzheimer's type dementia. As people are living longer, those moving into RACFs will continue to be increasingly frailer and older, and also have numerous medical problems (Richards, 2002). Hospital overcrowding and the ageing population have been discussed at length in the media and have been on the political agenda in Australia (Nay and Garratt, 2004, p.4). Registered nursing personnel with gerontological nursing clinical expertise are required to manage and assess residents' particularly complex medical and nursing issues in an environment where successful behaviour management practices are also vital to avoid injury and

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abuse from confused residents (Feldt & Ryden, 1992). This makes the prospect of working in aged care unattractive to some nurses.

### **Workforce shortage related legal issues**

Legal requirements of gerontological nurses include the need to follow evidence based standards of gerontological nursing care and to document this effectively (Alford, 2006; Weiler, 1994). Alford (2006) provides details of a panel of experts' list of the top three legal issues for gerontological nurses and states this panel identified that the highest legal priority nurses should focus on were: the acknowledged workforce shortage which placed nurses at risk of assigning assistants "tasks beyond their legal scope" and taking shortcuts (p.10). The panel indicated (p.10) that the following are fundamental to preventing litigation:

- accurate and complete documentation, to counter claims that residents are neglected or a facility is understaffed,
- nurses recognising the need for ongoing education and taking responsibility for their clinical competence,
- the need for clarification regarding a nurse's scope of practice to support competent delegation and supervision.

### **Retention issues**

Compared with other sectors of the healthcare workforce, there is also a significant negative wage disparity in aged care which further impacts on staff retention and recruitment. The gap between workforce supply and demand is increasing due to the ageing Australian workforce, and there is concern for maintaining a suitably resourced workforce due to the industry's current size, skill mix, and staff availability.

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Factors such as low comparative wages, increased workplace stress, increased injuries and high occupational health and safety risks are reported as present in aged care (Australian Government Department of Health and Ageing, 2005b, p.2). Hence, it is imperative to continue providing options to the workforce for career advancements which reflect their clinical preference as opposed to a management role 'career end', which currently is the only available senior nursing / aged care industry role as the role of clinical nurse consultant does not exist. The ACNP role may be ideal for providing this option.

The current aged care RN workforce is considered experienced, however, there are few with tertiary qualifications (Richardson & Martin 2004). As pointed out earlier the perception exists that there is little associated expert knowledge required to work in aged care. This helps to explain why the industry struggles to attract newly graduated RNs who may see other knowledge intensive areas such as critical care nursing and midwifery as preferable. The previously reported studies indicate, and this researcher has hypothesised that the introduction of a respected ACNP role in the industry may improve the negative perception of nurses working in aged care amongst the nursing fraternity and support the recognition of the knowledge and skill of these experienced registered nurses, which may then positively impact on recruitment and retention issues (Brown, 2000). [removed detailed sentences]

### **3 LITERATURE REVIEW**

#### **3.1 PURPOSE OF THE LITERATURE REVIEW**

The aim of the literature review was to answer the following questions: first, what are the outcomes of an ACNP practicing in a residential aged care setting; secondly, what factors have impacted upon the introduction of such a role in a RACF or other aged care environment; and third, would the introduction of such a role be beneficial to older persons in Australia. This review focused on those studies that demonstrated:

- the specific details regarding the role of a nurse practitioner around the world and specifically an ACNP,
- clinical and other outcome/s related to NP and ACNP activities in residential aged care settings or other settings where older persons received care,
- barriers that may impact upon the introduction of the ACNP role, and
- implementation lessons learnt from practitioner projects around the world.

#### **3.2 REVIEW METHOD**

A variety of methods were used to identify the literature which either reported on research undertaken or discussed the role of a NP or an ACNP. These included reading journal articles and research studies obtained from the following sources using search terms including 'gerontological nurse practitioner', 'aged care nurse practitioner', 'nurse practitioner', 'aged care', 'nursing home', 'residential aged care', 'nurse practitioner outcomes', 'gerontology' and 'quality aged care':

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- Ageline
- AMED
- AustHealth
- CINAHL
- Cochrane Library'
- EMBASE
- MEDLINE
- Harrison's online

The *Nurse Practitioner Journal* and *Journal of Gerontological Nursing* were identified as major sources of research literature regarding these search items whilst other articles or abstracts discussed the NP role or associated topics in more general terms. Very few articles described the role of ACNPs in residential aged care specifically. As the role of the aged care nurse practitioner in Australia is still unique, a search of local websites was conducted to establish if any described the NP role and if possible the ACNP role. Very few details were obtained from Australian websites.

The traditional literature review method of undertaking a search as noted above, to retrieve relevant studies regarding nurse practitioners achieved limited results as there is relatively little formal evaluation of the NP role, let alone the gerontological nurse practitioner role. Additional information was therefore sought by interviewing various aged care expert stakeholders to supplement the published literature. Discussions regarding the perceived benefit or otherwise of such a role were transcribed. Where relevant, the results are presented in the literature review.

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To establish whether the ACNP role was a viable proposition in Australia, NP registration guidelines were obtained from each States' relevant Nurses Board. Legislative data was sourced from applicable government portals. Each Nurses Board was contacted and personnel responsible for registering nurse practitioners were interviewed to establish the specific details of the NP role in those States and the presence or absence of the ACNP role. Industry specific and Australia wide workforce data was obtained from the various Australian Government websites that included recently published workforce profiling data. Additionally, some data was obtained from individual States where, for example in WA, great concerns abound regarding the ageing workforce and population profile. Individual consultant professionals in the industry recommended by the national Aged Care Association Australia were interviewed regarding various aspects of the aged care sector to establish a background understanding of the sector. Due to the dearth of literature in Australia regarding this role, these activities were conducted to obtain operational details of the sector to further establish factors which may or may not impact on the introduction of the role in Australia.

### **3.3 CLINICAL NURSE SPECIALISTS IN OTHER COUNTRIES**

#### **The NP role in the United States and Canada**

The literature showed that as early as 1965 the US recognised the nurse specialist and subsequently the NP role. Discourse surrounding the ACNP role became more evident in the literature in the early 1990s. In 1995, 42 out of 50 US States recognised the presence of independent nurse practitioners in either legislation or via nursing peak body position papers (Drake, 1995). In 2007, every State recognised 'advanced practice nurses' known as NPs in regulations or legislation (Phillips, 2007).



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Advanced practice nurses were defined as those who undertook activities that were previously recognised as being medical in origin, such as ordering tests, prescribing medications or performing tasks such as inserting intravenous equipment. In the US, however, because regulatory requirements attached to the role differ in each State, all independent nurse practitioners can order drugs and provide mid-level medical management utilising the specific skills nurses acquire over the many years of practice. There are currently though, varying amounts of medical supervision and involvement in each State.

### **Clinical Nurse Specialists vs Nurse Practitioners**

The difference between a clinical nurse specialist and a nurse practitioner in the US lies in the activities of each role. A clinical nurse specialist is an expert nurse in a particular discipline with an advanced body of knowledge; in contrast to a registered nurse practitioner, they cannot order medication, tests or perform medical activities. In the late 1980s, Trella (1989) in describing the advancing role of nurses in the US, stated that there was recognition in the US of the enterostomal clinical nurse specialist and psychiatric clinical nurse specialist. However, little detail regarding the specialty of gerontological nursing existed, let alone the role of an ACNP.

### **NP interventions less costly**

In the US, studies show nurse practitioners increased patient satisfaction, improved outcomes and reduced prescriptions while readmission to acute care decreased (Buppert, 1995; Drake, 1995). Buppert described the need for hard facts to demonstrate the effectiveness of the NP role (1995, p.43). Salkever, Skinner, Steinwachs and Katz (1992) found nurse practitioners were 20% less costly than junior medical officers when comparing time spent with patients, salary costs, office

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space, ordered medications, follow-up visits and ancillary services. The researchers calculated the cost per episode of care using the above parameters and found the NPs provided care for example for otitis media at a cost of \$14.98 whereas the medical practitioner (MD) cost was \$18.22. The cost of NP care for sore throats was \$11.80, whilst the MD cost was \$15.64.

#### **NPs perform better than MDs**

As far back as 1990, Hall, Palmer, Orav, Hargraves, Wright and Louis (1990) found nurse practitioners' performance was comparable or superior to medical practitioners on seven of eight assessed tasks when 426 charts were audited. The study design included auditing patient care charts according to set evaluation criteria, over sixteen primary care practices in 16 teaching hospitals in Boston, Massachusetts, six of which were also affiliated with neighbourhood health centres. The practitioners studied were staff physicians, resident physicians and nonphysicians. The female nonphysicians were either certified nurse practitioners or nurses functioning as nurse practitioners through job training whilst the male nonphysicians were certified physicians' assistants. A panel which included a physician representative from each of the practices decided on the criteria to evaluate task performance. Task evaluation criteria included patient documentation and performed activities but also 'branch logic' to address clinical differences between patients. The performance of each practitioner was then established by evaluating the records of eligible patients.

The tasks included: screening for cancer in women using pap smears and breast examination; follow-up of high serum glucose when detecting and treating diabetes; monitoring digoxin levels to detect toxicity effects; positive urine culture follow-up to treat persistent bacteriuria; screening and immunisation of infants; dehydration

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assessment of children with gastroenteritis; follow-up of low heamatocrit to detect anaemia in patients; and following up on children who had otitis media to detect and treat failures to resolve middle ear effusion.

The findings showed that male MDs were worse at female cancer screening than female MDs but male MDs performed better when treating UTIs in children. An unexpected finding of the researchers was that nonphysicians performed in a comparable manner or were superior in their performance for all tasks except cancer screening. Nonphysicians performed significantly better than staff physicians for management of otitis media and their performance against medical residents was higher for glucose care, UTI management and well-child care. It was also established that NP consultations with physicians was not likely to account for the relatively high performance scores of nonphysicians. It was established that female nonphysicians gave equivalent or better technical care using roughly the same guidelines and norms as female physicians except in the cancer screening activities of breast examination and pap smears. It was hypothesised that nonphysicians (NPs) may not have performed as highly in the cancer screening function as they focus on problems at hand and do not take the opportunity to perform preventative health tasks for an unrelated matter, as they may have a "narrower and less flexible approach to a patient visit than most physicians have" (Hall et al., 1990, p.499). Drake (1995) has also found that in general, the provision of independent nurse practitioners in the US has increased patient satisfaction while decreasing readmission.

#### **NPs decisions based upon a full history**

Avorn, Everitt and Baker (1991) found nurse practitioners collected more historical, dietary and psychosocial information before deciding on therapies than medical

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practitioners when MDs and NPs were studied. Avorn et al. (1991) asked 799 MDs and NPs to respond to a case scenario where a patient was described as experiencing intermittent sharp epigastric pains relieved by meals but worse with an empty stomach. The patient was described as having recently moved States and a month earlier had an endoscopy showing diffuse gastritis but no ulcer. The results found, when considering the scenario for a man aged 78 years old, only 20% of NPs recommended a prescription medication, compared to 63% of MDs. Similarly, only 12% of NPs stated a drug was the single most effective therapeutic intervention compared with 46% of MDs (p.696). 70% of physicians stated they would prescribe a histamine antagonist. Also, when the scenario was presented to MDs as occurring for an older patient of 78 years old, they were more likely to ask questions concerning their other medical problems, not their psychosocial problems. However, if they had asked further, they would have been informed that the patient's son had died 8 weeks ago, a factor which would have impacted significantly on their decision making. The NP sample asked patients on average 2.6 questions compared with the 1.6 questions asked by the MDs and as one of the concerns of the study was that there was far too much reliance on pharmacologic approaches even when not indicated by clinical circumstances, the lack of questioning contributed to this concern.

One third of MDs who were presented the same vignette as an issue for a 30 year old man stated they would choose a therapy with only the information presented in the vignette. 39% of MDs, when presented the same scenario for a person aged 78 years old stated the information was sufficient to decide on a therapy compared with 19% NPs. Of these 39% MDs, 79% stated they would write a prescription and 67% stated it would be the single most effective intervention. 43% of the MDs who asked

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one or more questions about the patient's history indicated they would not write a prescription and 34% of the 57% who stated they would write a prescription stated it would be the single most effective intervention.

94% of physicians who asked for a medication history indicated an effective intervention would be to avoid aspirin, as further questioning elicited an answer that the patient took two aspirin tablets four times a day for gastric pain. Those MDs who did not ask for this or further information, made a decision concerning the patient's treatment without the recommendation that the patient ceased aspirin, a flawed treatment plan. MDs were more likely to ask about alcohol usage than NPs. Alcohol usage questioning elicited the answer that the patient ingested two cocktails with lunch and two glasses of wine at night, another significant factor which would have affected treatment decision making. These results highlighted a significant difference between the decision making of MDs depending on the information they sought and their pre-conceptions regarding the single most effective treatments whilst the results identified below demonstrate the value of further questioning, demonstrated by the NP's.

#### **The positive difference taking a full history makes**

The results demonstrated a propensity for MDs to make decisions without obtaining a full patient history in contrast to the NP's approach which included asking more questions regarding diet and the patient's psychological situation. However still, one fifth of NPs were prepared to create a treatment plan without asking further questions and others omitted questions such as use of aspirin, caffeine and alcohol intake. The authors however stated that far more nurses (NPs) in this study obtained historical information to make an "intelligent treatment plan" regardless of their

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statutory right to prescribe or not. The NPs were more likely to suggest a change in diet (42 % NPs vs 16% MDs) or stress counselling (19% NPs vs 4% MDs) and 22% of NPs suggested reducing alcohol, but there was a higher suggestion of this by MDs (29%) (p. 697).

The authors acknowledged it was difficult to determine the reasons for these differences in practice styles in this study however they identified that physicians formulated a different approach depending on whether the patient was a man in his 30's compared with in his 70's. The NPs were only presented the vignette as a man who was 78 years old hence no comparisons could be made re their decision making if the patient was younger. A health practitioner assuming a patient's medical status based on their age potentially demonstrates an ageist approach to medical decision making.

#### **Lack of gerontology based decisions – MDs compared with NPs**

The authors stated concern that the MDs prescribing practices for the elderly did not correlate with known drug distribution, metabolism and sensitivity concerns compared with the NPs decision making which included prescribing less medications. They stated clinical geriatric literature is clear regarding the problems of inappropriate medication use with the elderly. Medication induced adverse reactions such as confusion are more likely to be experienced by the elderly. In the Avorn et al (1991) study, NPs were found to make more gerontological theory based decisions than MDs. The steering group who established this study's vignette stated poorly diagnosed and treated gastrointestinal pain or bleeding would result in greater morbidity and mortality in this age group. The MDs medication prescribing decisions would have caused more harm to the described patients. The authors considered this

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finding so significant they called for clinicians to “adopt a more cautious, critical posture in defining and addressing” [elderly] patient problems (p.698). They highlighted the value of taking a considered patient history as performed by the NPs in this study who were found to be more cautious and judicious.

### **The value of a clinical history**

The commentary indicated that the data was sobering. It identified that MDs when making clinical decisions, tended to “undervalue the clinical history as an important foundation for therapeutic action” (p.697). They cited that ever increasing needs to see more patients in less time and tightening of reimbursement systems may contribute to the devaluing of the clinical history, which “paradoxically” increases costs and reduces the quality of care (p.697). NPs however who were reimbursed at a lower level, performed the clinical history task more completely. The cost of MD treatment, which mostly included prescription medication but lacked healthy or unhealthy lifestyle counselling was deemed to be higher than the NPs’ ‘no prescription and counseling’ implementation plan approach.

### **ACNPs in North America**

ACNPs have worked successfully in the United States and the United Kingdom since the early 1990’s. Burnside (1990) described the need for more geropsychiatric clinical nurse practitioners in nursing due to the increasing number of ‘old-old’ people. Trella (1989) states that the role she had as an ACNP was a continuity of care / gerontological clinical nurse practitioner in a hospital setting, which previously had been a continuity of care/quality assurance nurse. According to Wright (1988), Brandriet (1992) and Trella (1989), a “Gerontic Nurse Practitioner” can participate, direct and supervise non-professional staff to facilitate the provision of client-

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centered care. In a hospital setting, a gerontological nurse practitioner often worked as a discharge planner and continuity of care officer, who ensured patients were empowered and their self-caring activities were improved in preparation for returning home (Trella, 1989).

### **Staff education required to aid NP understanding**

Trella (1989) also identified that other health professionals, nursing and otherwise, did not recognise the need for an ACNP due to ignorance of the gerontology specialty (p.24). She described the frustration ACNPs experienced when attempting to expand their roles, as it was perceived their activities infringed on the roles of other disciplines' territories. For example, due to the psychosocial aspect of the provided care, social workers impeded the progress of the ACNP role (p.25). To overcome this, Trella implemented education sessions for staff regarding the role of a gerontology nurse expert, specific aspects of the ageing person, incontinence, sensory deficits and drug reactions. This assisted understanding of outcomes that could be achieved by the involvement of a more specialised assessment resource such as ACNPs (pp.26-27) who understood the implications of these factors on older persons. She stated that it is easier to define the role of an enterostomal or psychiatric nurse than a gerontology nurse. In conclusion, Trella stated that in an acute setting, 'this role is easier to implement under the guise of another role' such as a discharge planner (p.28) as other professionals did not recognise the special needs of this population.

Feldt et al. (2002) described the important clinical preceptorship role ACNPs play in educating nurse practitioner students to enhance clinical practice outcomes. Their article showed the importance of the provision of guidelines that address factors such as preceptor role clarification, clinical teaching activities and student performance



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evaluation parameters including how to evaluate these in an ACNP student. Futrell and Melillo (2005) described the need to teach gerontological nursing in other specialties because there was a significant decrease in the number of graduates choosing gerontological nursing as their specialty, which was of concern for the older population.

Mackin, Macera and Jennings (2006) described how a mentored graduate program in gerontological nursing could enthruse and provide support that allowed nurses currently working in a RACF to maintain full-time employment. The aim was to support nurses in board certification in gerontological advanced practice nursing. An ACNP would be an ideal practitioner to provide such mentoring services as they provide high level gerontology assessment tutoring. Rapp and Payton-Fay (2006) raised the question whether the gerontological nurse practitioner exam should be offered as a certificate of added qualifications. Kelley, Kopac and Rosselli (2007) found that nearly all institutions offered an advanced health assessment course to their clinical graduate students with a strong emphasis on physical examination. They also noted that the inclusion of a gerontological assessment component had increased in the past 5 years.

The role of an acute care NP was studied at University Hospitals of Cleveland in the US (Genet, Brennan, Ibbotson-Wolff, Phelps, Rosenthal, Landefeld & Daly, 1995) and also identified that NP implementation issues included a lack of understanding by other members of the health care team of the NP role. The authors found the teaching hospital system "was reluctant to accommodate the NP role" as it was oriented to medical resident training instead but acceptance of the model was obtained through ongoing education of the clinical and administration team (p.51).

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They found the utilisation of the NP was facilitated through education concerning the NP scope of practice, departmental policy changes and NP protocol development.

#### **Staff education reduces length of hospital stay**

In another article, three different examples of ACNP care models in a hospital environment demonstrated that ACNPs facilitated change, improved resource utilisation and created innovative strategies which optimised care for older persons in hospital. Smyth, Dubin, Restrepo, Nueva-Espana and Capezuti (2001) explained that ACNPs were required to practice as primary care providers, consultants, educators, researchers, and/or administrators. All models aimed at improving the quality of life of residents by reducing hospitalisation stays and negative complications associated with hospital visits.

In one model of their care, an ACNP created a Functional Recovery Pathway in collaboration with a multi-disciplinary team. The Pathway decreased admission length and improved resident functional ability post-hospitalisation. In their second model, the ACNP acted as an educator with the nurse manager. The ACNP educated staff regarding falls risks after which falls rates decreased by 5.8%. In their third model, the ACNP coordinated care for hospitalised nursing home residents with a case management program that reduced the length of stay for this group of residents from a median of 12 days to 9 days in the first year to 6.8 days in the third year.

#### **Success dependent on senior personnel and organisational goals**

Small (1994) also stated that the success of the ACNP role in a RACF depended on a mutual understanding of the NP role by the director of nursing, medical staff and management to understand its potential value as a resource for nursing staff. Small,

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an American nurse and the former President of the National Conference of Gerontological Nurse Practitioners, also stated the success of the ACNP role depended on the institution's goals, structure and planning and the ACNP's position description. She stated the role was worth pursuing as an ACNP identifies more with a nursing model of care, implementing goals and a holistic approach to care, being more responsive to both the residents' needs and the goals of the facility (p.49).

In the US, Small (1994) stated that the ACNP is also the DON at times, and that the role has required a Masters degree since 1992. She also cites the 1989 American College of Health Administrators report, "Efficacy of the Use of Physician Extenders in Nursing Homes", that identifies one of the benefits of the ACNP role in nursing homes includes increased health education and counseling for both residents / representatives and nursing staff. She considers that by instructing nursing and other support staff in current skills and knowledge, the ACNP can support nursing staff to be more effective care providers (p.49). The report also identified that the role increased quality of care, resident and family satisfaction through continuity of care via case management, cost containment and increased accessibility/ efficiency and availability to attend to minor problems in a timely manner (p.49).

Stolee et al. (2006) in Canada examined the ACNP role in long-term / nursing home care in Canada. Three RACFs in Ontario were studied to identify factors that facilitated or impeded the implementation of this role. Facility staff perceptions of the ACNP role were elicited via surveys and ACNPs were interviewed. The ACNP had a positive impact on practice activities and staff assessment skills and ratings of effectiveness and satisfaction of the ACNP role were high, although they varied by

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facility. It was found that the frequency of staff interaction with the ACNP impacted on the satisfaction level and the staff's understanding and utilisation of the role. It was concluded that those who called GPs instead of utilising the ACNP did not understand the NP role. A clear delineation emerged of the scope of practice, optimal NP to resident ratios, and organisational support being vital in the success of an ACNP implementation activity.

### **The importance of ACNP communication**

In 2001, Kane, Flood, Keckhafer and Rockwood describe how 17 residential ACNPs spent their time at the five RACF sites they worked in, over a 2-week period. In their organisation, these nurses were named "EverCare" nurses. The mean time spent with an individual resident was 42 minutes per day (median 30) and of this time, 20 minutes was spent providing direct care (median 15). It emerged that ACNP activities varied in that much time was spent communicating with necessary parties, which was described as an important function that supported a medical practitioner's primary care role and improved families' satisfaction with care. It was found that the ACNPs spent around 35% of their time on direct resident care, 26% in indirect care activities of which, 46% was spent interacting with nursing home staff, 26% with family, and 15% with the physicians.

In 2005, Abdallah studied EverCare nurse practitioner activities across five aged care facility sites in five US States - Georgia, Maryland, Massachusetts, Colorado, and Florida. A Background Data Sheet and a 99-item tool called the ENPRAS encompassed the following six role subscales:

- Collaborator
- Clinician

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- Care Manager/Coordinator
- Counselor
- Communicator/Cheerleader, and
- Coach/Educator.

These were completed by 127 EverCare ACNPs. Performance of ACNP activities was generally consistent across all sites but significant differences occurred in the amount of time spent on Collaborator and Coach/Educator type activities. The ACNPs spent more time on Clinician and Communicator/Cheerleader role activities than on others and were found to provide proactive primary care to nursing home residents. The report stated that the observed consistency of ACNP practices reflects a strong centrally directed practice model that bodes well for the ACNP specialty and the future of the role.

A lack of 'covering doctor's' patient communication / history taking was identified by most DONs in a non ACNP study by Buchanan, Murkofsky, O'Malley, Karon, Zimmerman, Caudry, and Marcantonio (2006) as the main cause of over-hospitalisation of residents of RACFs. This study examined the factors that influence decisions by medical directors and directors of nursing (DON) to hospitalise nursing home residents using a survey which considered resource availability, determinants of hospitalisation, causes of over-hospitalisation and nursing home practice. The US survey was provided to 448 nursing home Medical Directors and DONs across 25 States. At least one survey from 93% of the facilities were received with an overall survey response rate of 81%.

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Both the Medical Director and DON managers agreed resident preference was the most important determinant in the decision to hospitalise, followed by quality of life. Neither group ranked 'doctors not being quickly available' as an important cause of over-hospitalisation. Medical directors indicated that lack of information and support to residents and families around end-of-life care and a 'covering doctor's' lack of familiarity with residents were the most important causes of over-hospitalisation. DONs reversed the order of importance of the aforementioned factors ie. they considered that MDs lack of familiarity with a resident caused over-hospitalisation, followed by a lack of information from families and residents. The DONs were significantly more positive regarding provider and staff ability. These findings further demonstrate the importance of effective communication as a determinant of appropriate clinical decision making.

#### **Access to more timely care**

A study by Aigner, Drew and Phipps (2004) compared outcomes of care in eight RACFs / nursing homes in central Texas. Care was provided using two health professional models, one being a collaborative nurse practitioner/physician model and the other a physicians-only model. A retrospective resident care chart review from September 1, 1997 to August 31, 1998 was undertaken for 203 randomly selected residents. The number of visits for acute care issues conducted by the nurse practitioner/physician team was significantly higher. It was found that they treated significantly more eye, ear, nose, throat and dermatologic conditions than the physician-only group. There were no significant differences between the two groups in emergency department visits and associated costs, hospitalisations and associated costs, length of stay, performance of mandated progress visits, and annual history and assessment activities. The nurse practitioner/physician group patients though

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were seen more often by the ACNP hence it was identified that time and cost savings through less physician visits was achieved, and resident's had access to more timely care from the nurses, not the physicians.

### **Positive outcomes related to ACNP involvement**

A range of studies have found ACNP's to be a vital link to quality healthcare for elders and a necessary role for home care, long-term care, assisted living, and community care (Dorson, 2006; Fulmer, Flaherty & Medley, 2001; Massengill, 2006; Rosenfeld, 2003; Sharp, 1999). And others noted the need to further describe and develop the role of ACNPs in home and residential care, where nurse practitioners were replacing physicians (Quaglietti & Anderson, 2002; Resnick, 2005; Stefanacci, 2001).

Intrator, Feng, Mor, Gifford, Bourbonniere and Zinn (2005) described how throughout the 1990s the proportion of RACFs with ACNPs or Physician assistants (PAs) doubled, from less than 10% to over 20% and that RACFs in States in the upper quartile of Medicaid reimbursement rates were 10% more likely to employ them. They found that market competition and areas where there was a need for higher managed care positively impacted on the employment of ACNPs or PAs. It was noted that studies have shown that facilities with ACNPs or PAs provide better care to residents. Several market and state policy effects were tested during this study while facility and market characteristics were controlled for.

### **Physician survey identifies positive view of ACNP involvement**

The utilisation of ACNPs in RACFs was studied by Rosenfeld, Kobayashi, Barber and Mezey (2004). They identified the number and types of facilities using ACNPs for any part of resident care, actual ACNP activities and arrangements between ACNPs and

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employers, physicians, and the facilities. A survey was mailed to all physicians throughout the US who were members of the American Medical Directors Association in order to obtain information regarding the following:

- (1) number of RACFS with ACNPs involved in care provision;
- (2) number of ACNPs engaged in care at these RACFs;
- (3) types of employment/financial arrangements between ACNPs and RACFs;
- (4) service types provided by the ACNPs;
- (5) effectiveness of the ACNPs as perceived by the medical directors; and
- (6) perceived future demand for ACNPs in RACFs.

It was not possible to establish which physicians visited aged care facilities from the data base but the questions in the survey required the respondent to work in an aged care facility in order to provide answers.

A 19% response rate was achieved (870 respondents) by Rosenfeld et al (2004).

Over half, (63%, 546 respondents) reported that ACNPs were involved in the care of residents in their facilities. There was a median of two ACNPs per responding facility or in total, 1160 ACNPs identified. The main roles of the ACNPs included visiting sick residents urgently (96%), providing preventive care (88%), performing regulatory assessments (88%), providing palliative/hospice care (80%), and wound care (78%). Larger facilities (>100 beds) were more likely to employ ACNPs than smaller facilities, and the ACNPs employed by a RACF (19% of respondents) had significantly different practice patterns from those employed under other arrangements. Ninety percent of medical directors stated ACNPs were effective in maintaining physician satisfaction, resident satisfaction (87%), and family satisfaction (85%). Thirty-four percent of respondents indicated an increased need for ACNPs in RACFs in the future.



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### **Nurse Practitioners in the United Kingdom / Europe**

The fifteen students who graduated from the first NP programme conducted in the UK in 1992 led the way for thousands who are now working as NPs in various capacities. The ACNP role, however, is still a relatively new feature of the nursing landscape in the UK (Royal College of Nursing, 2005).

The title 'nurse practitioner' is not a protected legislated title in the UK as it is in the US and Australia yet the role of the NP is described by the Royal College of Nursing (RCN) in similar terms as in Australia. The RCN states that a NP acts as a primary care provider in their own right but is not a doctor substitute, but an augments of care, offering a 'complementary source of care to that offered by medical practitioners' (Royal College of Nursing, 2005, p.3). In the UK, NPs make professionally autonomous decisions, assess and plan complex clinical regimens, order diagnostics, prescribe medications, provide a counseling and supportive role, are leaders in their profession who educate others and provide consultancy services as required (p.2). NPs in the UK can range from self-employed individuals to working in nursing and other health professional teams. The Royal College of Nursing states no area of health care is considered to be closed to the NP role (p.5) with the College responsible for approval of educational initiatives including nurse practitioner programmes (p.14).

### **Differing professional – educational requirements**

Dragon (2008) in an opinion article however quotes Professor Sandra Dunn, NP researcher from the Charles Darwin University Graduate School for Health Practice in Australia, about the UK context: "[A] NP may have five years experience, a Masters, and ongoing education and another NP may have had a two week in-service to fast

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track them into the role." Australian Nurse Practitioners Association president Andrew Cashin is cited by Dragon (2008) as saying that comparing NPs in Australia to the UK is like comparing apples to oranges as their model is a doctor substitute role whereas the role in the US, Canada and Australia is a nursing based vision where the role works as a complementary service, not a medical alternative (p.22). Advanced practice nurses in various locations of the UK are supported to perform various 'NP' type roles such as ordering medications or diagnostics without necessarily completing a Masters level Nurse Practitioner body of study. The commentary states that the NP role is not as tightly regulated for public protection. However, other commentary (Agnew, 2004) and studies (Clegg, Bradley, Smith & Kirk, 2006) describe positive patient outcomes from nurses who are suitably trained and supported to assess, diagnose and deliver care to hospitalised older persons in the UK using a NP like model.

The model introduced at Wharfedale Hospital, Leeds for example employed nurses who did not fit the typical educational profile of a nurse practitioner however, they were called nurse practitioners (Clegg et al., 2006, p.27). In the discussion it was noted the title was fiercely debated at the hospital as the Nursing and Midwifery Council defined an advanced nurse practitioner as a registered nurse with clinical competence sufficient to make complex clinical decisions and an expert knowledge base. Others in the hospital argued it should remain only for those who had undertaken an "18-month MSc in advanced nursing practice" (p.27). The Hospital Trust however kept the title for nurses trained to degree level in advanced clinical assessment skills and collaborated with Leeds Metropolitan University to conduct a nine-month course for their staff in advanced clinical assessment of the older person, to a degree /masters level. The authors argued that the Wharfedale model developed

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maxi-nurses, not mini-doctors hence represented the NP type scenario. The model also received positive feedback from the Royal College of Physicians following a visit to the hospital legitimising the role in the view of the Trust

The educational level debate has continued in the UK. For example, in 1995, Hamilton, O'Byrne and Nicholai described the clinical nurse specialist (CNS) role at the Oxford Radcliffe Hospital in the UK, which included inserting central venous catheters for the administration of total parenteral nutrition, etc. and saw this as being similar to a NP. She did not, however, describe other characteristics of a NP.

In 1995 in the UK, a paper written by Pickersgill identified characteristics of a nurse practitioner. She stated the role of a NP included prescribing and diagnostic powers, referral authority, more personal attention and time during consultation, provision of choice for patients and an ability to provide counseling and health education (1995, p.24). Pickersgill (1995) described restrictions applied to primary care nurse practitioners which did not apply to nurse specialists because these patient – nurse relationships were governed by medical practitioners. The NP role was judged on their ability to acquire services which was often difficult when nurses did not work under a hierarchy of care (p.27). Pickersgill (1995) stated that the introduction of NPs emphasised the need to consider education and regulations to secure safe yet flexible practice and that a demonstration of technical competence was necessary before a NP role was countenanced.

### **UK NPs achieve positive clinical outcomes**

Despite these differences in titles and roles, some definitive NP studies were conducted in the early 1990s to demonstrate the value of the role. In 1995, a study

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by Hammond, Chase and Hogbin found that over a five month period the nurse practitioner provided patients more information than senior house officers at the Nigel Porter Breast Care Unit, Royal Sussex County Hospital. The project identified that the role achieved more positive clinical outcomes through proven nursing activities as opposed to medical. Patients were less anxious immediately following a consultation with the nurse practitioner where the possibility of breast cancer was present, than they were when they saw either of the two senior house officers (p.28).

The communication style of the NP in the Hammond et al (1995) study was attributed as the reason for the positive experiences of patients. They did however find that the female MDs asked more questions than male MDs. The nurses' decision making skills were found to be no worse or better than the senior house officers but patients who had already seen the NP often chose to see the NP "in preference to a junior doctor or a consultant" (p.29). Hammond et al (1995) also stated that a NP can "provide a unique combination of care and cure" (p.29) due to the 6 monthly rotation of senior house officers which involves patients seeing a different doctor every time. The nurse can often provide continuity of care due to their stable role in the unit. She further stated that NPs gain more practical experience, for example in breast palpation than a junior doctor could acquire, thus improving patients' experience of the NP.

Whitehouse (1994) described the NP role in supporting patients with Parkinson's disease and dystonia in a movement disorder clinic, but did not classify this role with a specialty such as gerontology despite the descriptors of the role matching such a classification. She found that the results of an independent assessment of 26 patients

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who received care from a NP showed 50 percent stated the usefulness of the NP contact was 10/10, whilst the mean rating of usefulness was 8.5/10. 88.5 % stated the home visits were the most useful intervention and 96.2% stated contact with the NP should be more widely available. The patients described their experience with the NP as caring, sympathetic, interested and knowledgeable, reassuring and empowering as the contact with the NP had increased their confidence in managing their illness. One patient described the ability to discuss the impact of the illness on their day to day life as very helpful, stating that afterwards they felt "secure and light-hearted", that they could cope better with their life and illness (p.451).

#### **Another European example**

The role of the NP in Europe was not studied by this researcher however an example of a NP project was identified in the literature for comparative purposes. Since October 1994 in Sweden, district nurses have been enabled to prescribe 230 products for 60 specific indications under sub headings including many gerontological nursing areas such as bowel and incontinence care, skin and oral care, nutrition, wound care and infection management (David and Brown, 1995). The paper states, when the initiative was first introduced by the government, severe opposition was received from the Swedish Society of General Medicine despite the list of medications being selected by the Swedish National Board of Health and Welfare and the Medical Products Agency (p.24). Both bodies prepared the list ensuring they addressed nursing situations with acceptable risk profiles. The initiative also required the nurses to complete an eight week training course regarding pharmacology and physical examination before prescribing any medicines to mitigate risk. Indemnity however was held by the individual and insurance protection obtained through membership of professional organisations (p.24).

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The role was described as similar to a NP although it was not described as having diagnostic ordering or referral powers. One example provided by David et al. (1995) was of a district nurse working at a health centre 250 km north of Stockholm with two GPs, three clinic based nurses, four district nurses, a physiotherapist, occupational therapist, chiropodist and pharmacist. The nurse described his workload as seeing 10-15 patients at the clinic and 7-8 at home each day. He wrote three to four prescriptions a week with the full support of the GPs he worked with, who also stated they wished the indications list was extended further. No mention of other expanded role descriptors appeared in the text, hence the extent to which the role was introduced was uncertain. Another practitioner worked in a rural community 300km from Stockholm mainly from her own small health clinic. She saw her own patients with chronic diseases, and treated and prescribed for these diagnosed conditions, with little diagnosis or treatment of new conditions. She worked with a visiting paediatrician four times a year but had little opportunity to work with the GP or other primary health care team members (p.23). Again, no description of other extended practices was provided.

David et al states in both the UK and Sweden, the district nurse prescribing initiative was introduced to improve services to clients and to reduce GPs workloads. She states though that in Sweden, the initiative was introduced as the government wished primary care to be provided by the lowest qualified person.

David et al state in England, nurses can make a diagnosis but can only prescribe from their limited list of medicines and have to try and find a medicine that addresses the identified clinical need. In Sweden however, nurses have a list of conditions and corresponding medications from which they can prescribe from, but the diagnosis is

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made first by the MD. David et al stated the Swedish nurses they met appeared both competent and confident for the tasks they performed, although the government at that time had not evaluated the prescribed items cost and had "scantily" evaluated the initiative for quality outcomes (1995, p.24).

### **Nurse Practitioners In New Zealand**

In New Zealand (NZ), NPs are accepted by the Ministry of Health as qualified health professionals with additional rights to RNs. Since 2001, 50 NPs have been registered with 30 prescribing medications. Patients in NZ seen by a NP can obtain the same medical benefits if they submit a prescription written by the NP as if it had come from a GP, because NPs have provider numbers. Professor of Nursing Practice Jenny Carryer (cited in Dragon's article, 2008) stated NZ NPs did not have the same issues regarding the lack of access to benefits like Australian NPs did, as their accepted status is based on their education, knowledge and judgement. It is only in 2010, that Australian NPs received these rights to access benefits. Professor Carryer stated nurses in NZ did not understand how a NP in Australia could practice within restrictive protocols that did not value the NP's education, knowledge and judgement.

## **3.4 RESPECTING STAFF EQUALS QUALITY CARE FOR RESIDENTS**

### **Nursing leadership and quality care**

Other studies in the literature explained how gerontological nursing, espousing to be a holism paradigm, must attend to overcoming ageism prejudices and myths in order to be successful in supporting older persons. Many studies described the fact that attitudes of staff towards ageing and the aged had a significant impact upon

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therapeutic outcomes (Bliesmer & Earle, 1993; Bowers & Becker, 1992; Cox, Kaeser, Montgomery & Marion, 1991; Drugay, 1992; Hunter, 1992; McCracken, 1994; Mitchell & Jonas-Simpson, 1995; Nystrom & Segesten, 1994; Taft, Delaney, Seman & Stansell, 1993). Quality care requires a nurse who understands an individual older person's response to ageing which cannot be presumed or treated in the same way as another person. People age differently and understanding the ageing body and these differences is vital in providing individualised, appropriate, supportive care. A non-ageist nurse conducts an advanced clinical assessment and plans care interventions using a consultative process, respecting the views and wishes of the older person.

As briefly mentioned previously, quality care delivery also requires effective administrative practices and nursing leadership to facilitate and reinforce work motivation and job performance. Nursing staff exhibiting dedication and compassion maintain high-quality care standards (Sheriden, White & Fairchild, 1992). Studies have found that to achieve a culture where residents are respected and empowered, organizations must provide staff training and implement staff empowerment practices, redesign job roles (Husted, Miller & Wilczynski, 1989; Smyer, Brannon & Cohn 1992) and employ the services of an ACNP who can facilitate and demonstrate effective, current practice (Brandriet, 1992; Stolee et al, 2006; Trella, 1989; Wright, 1988). For example, Stolee et al. (2006) found the majority (65.5%) of staff surveyed across three residential aged care sites stated the involvement of an ACNP at their aged care facility had improved their assessment skills, whilst 48% stated the informal bed-side type teaching provided by the ACNP had a positive impact on their skill level (p.32).



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Conversely, negative work attitudes, poor skills of care providers, ineffective supervision, or ineffective management practices have been found to be possible causes of poor care delivery in aged care settings (Bliesmer et al., 1993; Chappell & Novak, 1992; Cox et al., 1991; Drugay, 1992; Hunter, 1992; Kruzich, Clinton & Kelber, 1992; Taft et al., 1993). Sheridan et al. (1992) further state that “[I]neffective human resource management practices....foster cold and impersonal feelings and interactions among care providers and....elderly residents” (p.340), demonstrating that manager interventions can be detrimental to carer-resident interactions. Robinson et al. (2006) state that to infuse positive culture change, a vision for change must be shared and endorsed by all members of the team from the executive staff to the front-line staff. They state that the provision of staff education and a management commitment to empower front-line staff to make resident related decisions improves the quality of life for residents (p.23).

Sheridan et al (1992) described how an organisation’s core culture values influence how administrators implement and communicate a human resource management strategy in a nursing home in particular, and how this can impact upon quality care outcomes (p.335). An ACNP will need to work closely with staff and guide effective gerontic nursing processes but the future reinforcement of these principles will be shaped by the management practices that support them. Morale can be significantly affected by low cohesion among co-workers and little psychological commitment to the workplace. In aged care, there are high stressors which can contribute to poor morale. These experiences impact on individual staff members’ job performance.

Davies, Slack, Laker and Philp (1999) show a positive correlation between staff education preparation and participation in continuing professional education, and the

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experience of resident autonomy. Other studies also show that resident autonomy and independence can be achieved if staff undertake nurse education grounded in research, if they practice excellence and recognise the tacit knowledge which provokes further development of theory in a supportive learning environment (Baker, Boyd, Stasiowski & Simons, 1989a; Baker, Boyd, Stasiowski & Simons, 1989b, Cowan, Roberts, Fitzpatrick, While & Baldwin, 2004).

Adams-Wendling and Lee (2005) examined the educational level of DONs and Assistant DONs (ADONs) in 51 aged care facilities in Kansas, with a mean number of 81 beds. Forty-eight of the respondents were DONs, three were ADONs. Of the respondents, 3.8% (two) had a master's degree, 15.4% had a Bachelor's degree, 73.1% had an associate's degree, 5.8% had a nursing diploma and 1.9% had a high school diploma. They stated this was consistent with findings of other state and national survey results that have reported that the majority of nursing home leaders have less than a bachelor's degree (p.38). They also reported that 54.9% (28) of the respondents had held their current position for a year or less and 41.5% had been in the position for two or less years. Again, this supports other studies which demonstrate the high turn-over of nursing home leaders (p.38) in an industry where residents require support from staff who 'know them' to reduce relocation stress and mortality rates.

To achieve positive gerontological nursing practice outcomes, we must be aware of forces impacting upon our practices and shape these powers so they are useful commodities. Nurses must also use research to define practices and to support staff to value that which they know. However, if nursing home leaders are leaving these positions in the industry as previously reported, there is little time for them to value

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their knowledge and implement empowering staff and resident practices from a powerful position, based in research or tacit knowledge. The Adams-Wendling et al (2005) study showed that the education level of the senior leaders in aged care are often less than that of an ACNP. Hence the role of an ACNP must be thoughtfully implemented to prevent the exodus of such expertise through poor organisational support and understanding. The introduction of the ACNP role also supports the increased professional image of the aged care industry.

Sikma (2006) describes the importance of providing nursing home staff a caring environment that minimises their stress, optimises positive connections and maintains their commitment. The study showed when management demonstrated respect for staff members' values and worth as individuals, staff showed the same respect and humanity to residents. Other studies have demonstrated how attending to the human needs of staff promotes the well-being of residents (Foner, 1994; Tellis-Nayak and Tellis-Nayak, 1989). In the study by Sikma (2006), staff stated residents and families were more satisfied if they saw happy, consistent staff and that this was a result of staff being cared for. Staff stated that when they felt frustrated, exhausted and at burn-out risk, there was a greater potential for 'shabby' care and harsh treatment of residents. A cited example related to a staff member who was 'very, very upset at a resident'. She was so angry, she went to talk to an RN about the situation who identified step by step actions that could be undertaken. The staff member stated she felt cared for and hence returned to the resident refreshed and able to manage the situation (p.27).

The inherent lessons eg. the need to maintain a stable workforce through the provision of mentoring and support, in the above noted papers and studies need to

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be thoughtfully considered when introducing the ACNP role as it is these factors which will influence the sustainability of the role and the ability of the ACNP to have a positive impact. The above papers show, if the ACNP does not consider staff and organisational needs along with resident needs, and demonstrate leadership in clinical and professional practice, their power base will be diminished regardless of their advanced educational preparation.

### **3.5 GERONTOLOGICAL NURSE PRACTITIONERS AND QUALITY OUTCOMES**

#### **Aged Care Nurses must be experts**

In the Australian residential aged care context, RNs work in close collaboration with GPs chosen by individual residents, and with other health care practitioners who attend the aged care service, only accessing hospital services as necessary. The RNs therefore often make autonomous decisions in the absence of immediate medical support and hence, as previously described (this thesis p.21 and 22), they need to be expert in many areas. These present challenges for inexperienced aged care staff.

Part of the role of an ACNP is to establish care plans which effectively manage difficult behaviours. The increasing number of residents in residential aged care who live with dementia has resulted in the government supporting services that intend to provide dementia services by providing them additional residential care licenses/ places without charge, thereby increasing the value of their business (Commonwealth of Australia 2007, p.8). It states in the 2007 guide for the annual Australian 'approval round' applications that all applicants can expect to have care recipients with dementia. It further states that in order to be successful, all RACF applicants must

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sufficiently describe in their submission, how they will address the specific care needs of persons living with dementia and as a minimum, they should include information about:

- how they will provide care for people with dementia
- their organisation's expertise and experience in providing care for people living with dementia, and
- how they will provide for the safety and security of both staff and care recipients in such a behaviour challenging environment.

Aged care nursing staff must understand that a confused person's 'reaction' to internal and external precipitating factors may manifest as 'behaviours' and these factors could include reacting to a sense of fear or threat, feelings of loss of control of their previous life structure, frustration with tasks that exceed their ability, fatigue, illness, impaired perception, pain, or medication effects. External factors which may exacerbate negative behaviours also include the physical environment, interpersonal approaches of staff or other persons, the nature and degree of environmental stimulation or the use of mechanical or chemical restraints (Algase, 1992; Feldt et al, 1992; Hall & Buckater, 1991; Kuhlman, DeBoer & Wilson, 1992; Magee, Hyatt, Hardin, Stratmann, Ninson & Owen, 1993; Strumpf, Evans, Wagner & Patterson, 1992; Ugarriza & Gray, 1993). Therefore, monitoring medication regimens of confused residents and modifying doses is a regular extended practice requirement of an ACNP in a RACF.

ACNPs who have expertise in advanced clinical gerontological assessment can support aged care services in establishing appropriate behaviour management strategies. They are one of the accepted health professionals under the ACFI to

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assess and define care needs as previously described. They can also treat persons living with dementia by undertaking medication review activities, if their assessment demonstrated the need for such, given that the effects of medications can contribute significantly to a person's confusion.

### **Medication management and ACNPs**

It was common for the older person to take as many as 20-30 tablets a day which can interact and which requires monitoring (Drake & Romano, 1995). Appropriate medication management includes minimising the number of medications administered to an older person, i.e. reducing polypharmacy, whilst managing multiple complex medical conditions. The older person also may experience idiosyncratic responses that require regular medication changes. Additionally, many medications interact and reach toxic levels more easily in older persons (Abrams, Beers, Berkow, 1995, p.255; Cameron & Richardson, 2001; Matteson, McConnell & Linton, 1997, p.742 ). Effective management requires the expertise of a gerontological clinical practitioner who can assess an individual's needs while understanding the impact of the ageing body on pharmacokinetics.

As pharmacodynamics within the body change with ageing, specialist knowledge is required to determine the effectiveness of multiple drug regimens. The Australian Commonwealth introduced an accredited pharmacist review initiative to all persons over the age of 65 years. This initiative involves the government paying accredited aged care specialist pharmacists to review older persons' medication regimens taking into consideration all medical diagnoses and clinical needs with the intention of reducing unnecessary medications (Australian Government Department of Health and Ageing, 2007c). A nurse's daily assessment of a resident during medication rounds

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and caring practices also increases the likelihood that side effects or drug interactions can be promptly identified.

As an ACNP can review and prescribe medications, they can potentially improve a resident's medication management through their specialist knowledge of ageing and chronic disease processes. They can also potentially act promptly in circumstances in which acute delirium or illness presents, taking immediate action, which may not be achievable if a medical practitioner takes hours or even days to attend a resident of a residential aged care facility. The ACNP could also potentially order pathology tests to determine the effectiveness, toxicity levels or side effects of medications. These findings were demonstrated in the research study which is reported in this thesis.

### **Psychosocial needs and ACNPs**

Prior to any acquisition of patient information, a relationship of trust must be developed and ACNPs are ideally situated to achieve this. Studies have shown that ACNPs listen more than medical practitioners as it is acknowledged that it is an essential component of professional nursing practice (Avorn et al, 1991; Jonas-Simpson, Mitchell, Fisher, Jines & Linscott, 2006; Martin & Roberto, 2006). Older people state that they feel they are genuinely regarded and cared for if staff are willing to talk, listen and be helpful (Koch, Webb & Williams, 1995).

Through listening, a person's quality of life and care is enhanced as demonstrated by participants of a study cited in Jonas-Simpson et al. (2006, p.47). Participants stated that they felt good when others listened to them and involved them in decisions about daily living. Inattention to residents is considered by numerous health professionals to be a serious impediment to quality care (Avis, Bond & Arthur, 1995;

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Bush, 2001; Coe, 1997; Hirst & Raffin, 2001; Jonas Simpson et al., 2006; Miller & Gregory, 2002; Reid, Ryan & Enderby, 2001). ACNPs have been shown in a number of studies to report a greater degree of familiarity with family and resident wishes than physicians and provide greater empathy (Barton, Baramée, Sowers & Robertson, 2003; Cohen-Mansfield, Lipson & Horton, 2006; Hojat, Fields & Gonnella, 2003; Munding, Kane, Lenz et al, 2000, Torrisi & McDanel, 2003). An ACNP working in a leadership role can ensure the planning of professional, considered goals of care and interventions, based on resident preferences and current nursing knowledge, following relationship building activities. They are in an ideal senior clinical position to achieve this as findings of many studies have shown NPs teach more and provide more counseling services than physicians (Barton et al., 2003; Hooker & McCaig, 2001; Moody, Smith & Glenn, 1999; Munding et al, 2000).

In a study by Cohen-Mansfield et al (2006) comparing medical and nurse decision making in a nursing home, 75% of nurses reported being familiar with family wishes compared to 46% of physicians. Residents' wishes were reported as being very well known by 36% of nurses but only 7% of physicians - representing a significant difference. Other findings of the study reflected a division of roles and perspectives of nurses versus physicians in the medical decision making process; for example, nurses expressed less faith in a treatment's potential to improve resident conditions (p.20). The study highlighted the need for better communication strategies between nurses and physicians in the nursing home setting to prevent advanced directives being misinterpreted as identified previously in the study by Buchanan et al (2006) (p. 88 of this thesis).



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Including practices on a care plan that address the psychosocial needs of a resident and promote self caring activities and empowerment, so the resident takes responsibility for health maintenance, requires the expanded knowledge of a health professional who is educated in aspects of caring without taking over. A nurse is ideal for this role (Clarke et al., 1992; Hoff & Lowenstein, 1994; Pascucci, 1992; Wagner et al., 1991). ACNPs understand the needs of older people to remain autonomous, empowered and independent for as long as possible (Ebersole & Hess, 1994, p. 807).

Promotion of therapeutic, safe and expeditious caring practices can prevent emotional and physical suffering. Studies have shown that the ACNP role requires courage and power to initiate, assist, encourage and facilitate skilful, creative and caring knowledge (Barton et al., 2003; Smith Higuchi, Hagen, Brown, and Zieber, 2006; Stolee et al., 2006; Swartz, Grey, Allan, Ridenour, Kovner, Walker, and Marion, 2003; Sweet, 2005). If an ACNP is available each or most days, they can provide prompt responses to changing care needs and educate staff about these to ensure care provision does not dis-empower the older person. The studies show that an experienced ACNP can also assess and plan clinical care around emotional, cultural, spiritual, psychosocial and lifestyle requirements providing a unique combination of both medical and holistic nursing care.

#### **A Nursing model vs a Medical model**

It had been stated that the medical model of care, in which the MD dictates care, only provides individuals with low level responsibility for their own health maintenance because under the medical model people are considered unable to help themselves (Taylor, 1992). Other medical management concepts included more empowering strategies (Spiro, McCrea Curren, Peschel & St. James, 1993) but people

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are often still encouraged under the medical model to seek help from medical experts to solve their problems without taking responsibility for preventing them. The medical model still relies upon the helper being in control and the individual being essentially passive, which brings with it a risk of fostering dependency (Taylor, 1992). This is in direct contrast to the NP role. A quote demonstrating the medical model is shown in Niemira's (1993) observations as a medical physician 'looking after' and providing treatment to those "who exist in a state [she] consider[s] not worth living", i.e. those living in a nursing home. In her article, Niemira (1993, p.15) states:

... it becomes the responsibility of primary care physicians to determine how they should be treated [patients], or if they should be treated at all. Guided by our compassion, common sense, and comfort level, we must choose for these sick elderly when they cannot choose for themselves. Institutional policy, family desires, and legal guidelines may modify our behaviour, but ultimately we bear the burden of the decision making. We are the trained professionals with the knowledge and ability to intervene.

It was around this period of time that more NP research began appearing in the literature.

Hojat et al. (2003) outlined the concept of empathy in which understanding the experiences and perspectives of a patient is a cognitive attribute, essential for successful patient-clinician relationships. Empathy also assists primary health care providers' decision making to occur in line with patients' needs and to play a positive role in achieving quality patient outcomes. Familiarity with a resident's wishes in an aged care facility is vital in preparing and achieving a respectful, relevant care plan that supports an individual to continue living as per their preferred lifestyle.

### **3.6 FACTORS IMPACTING ON THE SUCCESS OF AN ACNP ROLE**

#### **History of Physician opposition to the NP role in Australia and other countries**

There is a strong historical opposition to the NP role by the medical profession, evident for example, in the past 19 years of annual legislative updates extensively documented in the US-published journal, *Nurse Practitioner*, where details of the opposition to the role has been documented each year. Even in 2006, as reported in Phillips' 2007 legislative update, two US States reduced NP powers by increasing the NP monitoring role medical practitioners now had in those States, a direct result of medical opposition to the increasingly independent role of NPs.

In an Australian ABC radio interview as early as 1995 where the 'new' role of the nurse practitioner was being discussed, Professor Kathleen Drake (Drake, 1995) from the University of California, stated the American Medical Association had submitted a 'White Paper' which it distributed throughout the US, to 'warn' doctors of the dangers of allowing nurse practitioners to practice in the US. It indicated that they were compromising patient care by allowing nurses to be responsible as independent practitioners.

There are also other reports from the US of different physician professional bodies and health insurers opposing the NP role (Edmunds, 2003; Edmunds, 2004; McCloskey, Grey, Deshefy-Longhi & Grey, 2003). Edmunds (2003) describes how the American Academy of Pediatrics issued a policy paper stating it opposed independent practitioners' practice, prescriptive authority and reimbursement parity. Edmunds (2004) reports how some pharmaceutical companies ceased supplying NPs with

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printed prescription pads which only included the NP's name. This was a result of physician influence on the pharmaceutical companies to reduce the legitimacy of the independent NP role in the eyes of patients.

McCloskey et al (2003) in the US reported on NPs requiring their patient encounters to be documented and billed under a physician's name so the medical organisations they worked for could receive the maximum reimbursement rates as insurers did not recognise them as 'providers'.

Sweet (2005) in Australia reports the trauma a newly commenced NP experienced when medical staff refused to work with her at Concord Hospital and went on strike in protest of the NP role. Additionally, Sweet (2005, p.22) reports that when the NP commenced she "had to put up with doctors making derogatory comments in front of patients", and withstand "headlines warning of 'third world health care' " because of the NP role.

Professor Carryer (cited in an Australian article by Dragon, 2008) states frontline GPs and doctors however are respectful of the interventions of NPs as they are critically aware of unmet patient needs and the positive impact of NP practices. This is in stark contrast to their hospital based colleagues.

A literature review by Siroto (2007, pp.53-54) in the US of studies that evaluate nurse / physician relationships revealed that "persistent problems" still existed and they were predominantly :

- inappropriate, disruptive, or abusive behaviour by physicians
- dismissive attitudes about nurses

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- power/gender issues and
- communication / collaboration issues

Siroto (pp.54-55) outlined strategies required for change that included :

- empowering nurses to feel secure in their knowledge and clinical expertise
- improving communication with physicians through empowering nurses to approach physicians as equal professional colleagues
- providing administrative support to nurses to establish zero tolerance for disruptive behaviours
- increasing collaboration between nurses and physicians
- approach problems directly and initiate strategies to improve matters instead of complaining about them

These studies relate to nurse-physician issues rather than NP-physician issues however, they demonstrate the challenges which NPs must be prepared to overcome and withstand if they wish to succeed in their role.

The Australian Medical Association refuses to support a role for the independent nurse practitioner, supporting only a model where the general practitioner is pivotal in the primary care team, regardless of the independent nature of the setting, including residential aged care which GPs attend very infrequently (Australian Medical Association, 2005). It could be argued that junior doctors in health care settings would receive great benefits from practicing alongside advanced practice nurses such as NPs.

A NP will require courage and tenacity to withstand the inevitable opposition they will experience in the role. The NP in Sweet's (2005) article was quoted as saying these

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experiences were uncomfortable, however, that through the process, she “grew a lot” and “learnt a lot about the politics of health care”. As a consequence of her experiences, she subsequently became the founding member of the Australian Nurse Practitioner Association which was set up in 2003 to provide support and a voice to members.

If the role of an ACNP is not adequately promoted and supported by management practices, and the core culture does not respect advanced knowledge or the expertise inherent in the ACNP role, the consequent leadership potential of the role will not be realised. As indicated previously through this thesis, high-quality care delivery requires ongoing effective and supportive administrative practices and nursing leadership to facilitate and reinforce work motivation and job performance, hence these factors can affect the success of an ACNP implementation activity.

#### **Prescribing and ordering diagnostic tests**

NPs also needed a provider number to enable timely and cost effective treatments to reach patients. Dragon (2008) described how a NP’s lack of a provider number delayed patient treatments and halted NPs from working to their full capacity. If a NP is attached to a State-run hospital which does not use the PBS or MBS system, NPs can work around the system but this does not work for NPs in private, community and rural settings who need to access medication from local PBS pharmacies. Again, as Gardner et al (2009) demonstrated, greater than 70% Australian NP respondents stated that lack of Medicare provider numbers and lack of authority to prescribe through the PBS was “extremely limiting to their practice”. Dragon also described how research conducted by ACT Health, of four NPs, demonstrated that patients faced delays to treatment as a direct result of the lack of access of NPs prescribing.

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They found that more than 60% of patients experienced delays of 2-13 days after recommended treatments were identified by an ACNP or emergency department NP. ACNP Tamara McCleod (cited in Dragon, 2008, p.23) stated that identified treatments need to be implemented immediately to prevent falls, exacerbating infections and hospital admissions. She stated “[h]aving determined a treatment recommendation, it is an adverse event not to treat which leads to adverse outcomes. Even those opposed to NPs prescribing could not argue that a delay to treatment is acceptable” (p.23). Dragon cited the ACT study that identified that a GP disagreed with the NPs recommendations in only five of 79 situations. In four of the five cases, another medical officer such as a palliative care consultant commenced the treatment. It was also stated in the article that elderly persons should not have to wait until the next GP visit for an affordable prescription when an ACNP knows the issue and solution and has the prescribing power but not the ability to obtain medicines in a costly manner.

It was only after much lobbying and the issuing of the results of a national primary care strategy review that the Australian Government announced in their 2009 Federal Budget speech that NPs’ and other health professionals’ would have access to the PBS and MBS in 2010.

#### **The role of an ACNP and evidence based practice**

Scudder stated in 2006 that the “buzzword” in health care is “Evidence Based” practice. In 1972, Dr. Archie Cochrane criticised the medical profession for its lack of use of evidence in practice hence, the Cochrane Collaboration was founded in England in 1993, to coordinate evidence from around the world to assist informed decision making. Information is made accessible to health professionals by the

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Collaboration through its data development and maintenance activities which continuously update the Cochrane database with the findings of systematic reviews (Melnyck & Fineout-Overholt, 2005).

The Cochrane Collaboration defines evidence based health care as that which conscientiously and judiciously uses current best evidence from clinical care research to guide health care decisions (Scudder, 2006). In evidence based medicine the gold standard of evidence is considered to be related to quantitative research, based on randomised controlled trials, including meta- analysis of related independent trials to give the most reliable evidence by synthesising all available evidence. To be relevant for nursing practice, the adaptation of evidence based medicine has meant the expansion of acceptable research to include not only quantitative methods of research, but also qualitative research as nursing practice is largely involved with the human response to treatment/s (Scudder, 2006). Such responses are often best analysed and researched using qualitative methods. The synthesis of qualitative research uses meta – synthesis of the information as opposed to meta- analysis (Scudder, 2006).

Evidence based practice must not only consider the best available evidence but also take into consideration the clinical expertise of the practitioner and the wishes of the person the practice will impact on (Brazil, Royle, Montemuro, Blythe & Church, 2004; Draper, 2004a; Draper, 2004b; Hertz et. al, 2005). The aim is to align clinical and caring practices with the best available knowledge (Draper, 2004a; Draper, 2004b; Hertz et. al, 2005; Nay, 2003; Tolson, McCloon, Hotchkiss, & Schofield, 2005) hence a systematic review and critical analysis of evidence, and or literature, is vital to ensure that the evidence is valid. Clinicians must also ensure the information they are



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basing practice on is reliable (Scudder, 2006) and have the skill to introduce evidence based practice in a manner that effects positive change in staff behaviour (McCluskey & Cusick, 2002; Winch, Henderson & Creedy, 2005). Basing practice on evidence is beneficial to recipients of care and staff (Pearson, 1997; Phillips, Kelly & Best, 1999) and using an ACNP as identified in previously noted studies in this thesis can assist that goal.

To establish the role of an ACNP, numerous studies need to be conducted to enable a systematic review of the findings in order to implement such a role using evidence based practice. The relevance of such a role and the outcomes such a role is likely to engender also requires numerous studies to establish.

Laurant, Reeves, Hermens, Braspenning, Grol, and Sibbald (2006) conducted a Cochrane review regarding the substitution of doctors by nurses in primary care and found 4253 articles of which 25 articles, relating to 16 studies, met the inclusion criteria. As the outcomes varied between the studies, this limited the opportunity for data synthesis but in general they identified no appreciable differences between “doctors and nurses in health outcomes for patients, process of care, resource utilisation or cost” (p.1). However, patient satisfaction was higher with the nurse-led care and NPs tended to provide longer consultations, provided more information and recalled patients more frequently than doctors. The review identified that appropriately trained nurses could produce as high quality care and achieve as good health outcomes. They indicated though that the findings “should be viewed with caution given that only one study was powered to assess equivalence of care” with others having methodological limitations and demonstrating less than 12 month patient follow-up. They indicated that NPs had the potential to reduce doctor

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workload and direct healthcare costs but it depended on the particular context of care ie. the nurse may be meeting previously unmet patient needs or generate demand for care where previously there was none. Cost savings also depended on the salary differential between doctors and nurses and a consideration of potential lower nurse productivity compared to doctors.

An example of a recent systematic review involving NPs in primary care was conducted in 2002 in the UK by Horrocks, Anderson and Salisbury. They conducted a systematic review of randomised controlled trials and prospective observational studies to determine whether nurse practitioners working in primary care could provide equivalent care to doctors. The inclusion criteria were met by 11 trials and 23 observational studies. Across all the studies, their review found patients were more satisfied with care by a nurse practitioner but no differences in health status were found (standardised mean difference 0.27, 95% confidence interval 0.07 to 0.47). NPs had longer consultations (weighted mean difference 3.67 minutes, 2.05 to 5.29) and made more investigations (odds ratio 1.22, 1.02 to 1.46) than doctors and quality of care was in some ways better for NP consultations. No differences were found in prescriptions, return consultations, or referrals. In primary care they identified the increasing availability of NPs is likely to lead to high levels of patient satisfaction and high quality care.

An ACNP as per any registered nurse must ensure evidence based practices are defined in the procedures they refer to (Clinical Practice Guideline's for ACNPs) so that both clinical decision making and daily practices remain relevant. Hence the role of a NP is more than just practitioner, they must regularly review available clinical

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practice information, using a critical eye and identify the findings of systematic reviews.

### **3.7 AN AUSTRALIAN ACNP STUDY – SUBSEQUENT TO THIS PROJECT**

#### **The National Aged Care Nurse Practitioner trial**

Prior to this project commencing, there had been no Australian studies which evaluated the outcomes of an ACNP intervention. Since this research project, another major study conducted from 2005- 2007 and a minor project from 2004 – 2005 were conducted over seven aged care facility sites using similar evaluation and data collection methods as used in this project. The sites were in NSW (one), WA (two), SA (two) and the ACT (two). The evaluation of the 2005-2007 National Aged Care Nurse Practitioner Trial (NACNPT) was completed by researchers of the Joanna Briggs Institute (JBI), South Australia. ACT Health conducted an Aged Care Nurse Practitioner Pilot Project (Beutel, 2005) over the 2004-05 period and this was extended to be included in the national trial. The NACNPT was considered a 'nested' project for ACT Health who conducted the subsequent project named 'Implementing the Nurse Practitioner Role in Aged Care (INPRAC)' (ACT Health, 2007) and provided data and information to JBI for the final National Report. Through both quantitative and qualitative means, the broad experience of older persons living in residential aged care exposed to the ACNPs was identified. All three projects ie. the 2002-2003 project which is the basis of this thesis, the subsequent 2004 Professor Gardner led ACT project and the subsequent 2005 national Joanna Briggs project, therefore need to be considered collectively and critically if we are to define an evidence based model of ACNP practice in Australia.

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### **The INPRAC project results**

The 2004 – 2005 ACT, INPRAC project (ACT Health, 2007) resulted in the NPs establishing their roles and scope of practice. Their activities, plans and strategies resulted in achievements for the NPs and residents of the RACFs they worked in.

The successful initiatives quoted in the final report (p.12) include:

- reduction in hospital admissions from residential aged care facilities and the community
- reduction in re-admission rates following discharge from acute care hospitals
- reduction in presentations to emergency departments from aged care facilities
- improvement in the management of end of life care
- reduction in falls in the residential aged care
- decreased incidence of pressure areas
- successful introduction of a clinic for rapid assessment of the aged at risk of hospital admission
- early identification of 'at risk' patients discharged from the acute care setting to the community

The project found the nurses established successful collaborative working relationships with medical practitioners and health teams, providing clinical and professional leadership to nursing staff, which constructively impacted on the recruitment and retention of the nursing staff. The authors found that there was increased recognition of the specialist nurse role which would aid the development of this new important ACNP role for aged care (ACT Health, 2007).

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### **The National trial evaluation activities**

The Final Report of the 2005 – 2007 national trial identified the outcomes of ACNP services over an almost two year period ie. August 2005 to June 2007 (Joanna Briggs Institute, 2007). Various qualitative and quantitative evaluation activities were completed as it was determined that the experiences of all stakeholders required examination as well as ACNP activity data. The project developed a minimum data set used by each of the seven sites to apply a common methodology for collection and analysis of ACNP activity across the locations. Five discrete Sub Projects were also conducted including a Resident/Consumer Focus Group, Stakeholder Focus Group, Comparative Survey (General Satisfaction Questionnaire and Short Form Health Survey), Collaborator Questionnaire (regarding the collaborators perception re the role and activities of the ACNP) and an Economic Evaluation.

The qualitative research components of the study included the thematic analysis of the Focus groups' verbatim transcripts and the Collaborator Questionnaire, a commonly used approach to data analysis in qualitative research.

Quantitative evaluation included collection of a demographic profile for each resident from both the ACNP trial sites and the control sites and administration of a General Satisfaction Questionnaire (GSQ) to each of the trial and control sites to elicit resident health and satisfaction with the ACNP services. Questions were modified to reflect those relevant to the residential aged care population. The qualitative component was removed and a numeric value applicable to the result of all answers obtained, to determine client satisfaction. Overall resident physical and mental health outcomes were identified through the use of a previously tested 12 Item Short Form Health Survey (SF12). A basic cost-benefit analysis of the ACNP model using budget

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information from the individual Projects and data extracted from an Economic Evaluation questionnaire was undertaken. And lastly, a structured postal questionnaire elicited answers from the various nursing, medical and allied health care professionals who worked collaboratively with the ACNPs aimed at establishing the level of collaboration experienced by those who worked with the individual ACNPs.

### **The results of the national trial**

As the 2005 trial had to address jurisdictional variations in practice patterns and regulations, the authors state "the findings are tentative and equivocal and should be treated with caution". The overall finding of the study though was that the role was viewed positively by residents, families and key stake holders (page x).

### **The National Trial Collaborator survey results**

The Collaborator survey required respondents to assess their agreement with fourteen quantitative statements regarding the ACNP activities, the role in general and their knowledge of the role (p.34). Most respondents agreed completely with all the statements, with complete support for the concept increasing from 65% (ie 40/62) pre the project to 82% (51/62) post. Only one of the sixty two respondents disagreed with the concept of the role and only two (3%) would not recommend their patients see an ACNP. In these cases, the respondent was a GP, yet none of the respondents stated they had not developed a good working relationship with the ACNP, all stating they experienced positive (either medium or high) collaboration levels with the practitioner (p.35). More than three quarters of the respondents who either partially agreed or disagreed with the concept of nurse practitioners were GPs (7 of 9). The two remaining respondents, who stated they partially agreed with the

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concept were an RN and an allied health practitioner. Also, 7 of 10 respondents who either only partially agreed or disagreed that nurse practitioner candidates would enhance health care service provision were GPs. In this case, the remaining three were two RN's and one allied health practitioner (p.37).

The respondents were also asked for their opinion regarding the strengths of the ACNP model with responses following four recurrent points. Strengths included the "timeliness and immediacy of care provision (availability, accessibility), when NPCs are on site", the "knowledge and abilities [of the ACNP], and their role in improving resident outcomes", the "[I]mproved communication between care providers and ...residents/family and the RACF", and the role the ACNP played in advising "other nurses, personal care assistants and allied health" (p.38). Almost half of the respondents answered the question regarding their perception of weaknesses of the role. The recurrent themes revolved around the "lack of prescribing rights", "the need for expansion of the pharmacological role", the potential "for resistance to the role by other nursing, allied and medical staff" and the "lack of availability" when the ACNP is visiting other sites (p.40). The suggested ACNP role improvements addressed these perceived weaknesses ie. the need for prescribing rights, more ACNPs and better integration of the role with other nursing, medical and allied health staff (p.42). All the above results mirror the results of numerous international studies of the role as previously outlined.

### **The National Trial resident health and satisfaction results**

The specific details of further quantitative research activities are outlined below. The three part questionnaire consisted of i) demographic data including details of the service used (ACNP or GP), the number of times the service was used in the previous

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six months, a self assessed quality of life question and estimates of expenses paid in the previous six months; ii) the 27 question GSQ included twenty-six 4-point Likert-scales and one visual analog scale split into four equal sections for a maximum total score of 108 and iii) the SF12 assessed the resident's health over the previous month using a 5-point Likert scale, a 3-point Likert scale and four yes/no answers with the highest possible score being 44, the lowest being 12. The researchers stated the Likert-scale data was ordinal with a clear progression of the options presented. They identified that the requirements of interval scale data and parametric analysis are not considered met with Likert-scale data but in this circumstance using parametric approaches was tolerable as the dependent variable being examined (the total SF12 and GSQ score) are total scores allowing for far greater variation, the sample size was relatively large and the other assumptions for parametric statistics use (eg normality, homogeneity of variances) were met (p. 46).

The SF12 included questions ranging from whether the resident felt their physical activity was limited, if they felt pain with normal activity, if they felt calm and peaceful and how much time interfered with their social life to whether they had enough energy. The overall SF12 data analysis demonstrated there was no significant difference between the health of residents receiving treatment at a control site or ACNP site (p.52). Residents' general health was 'good' in all sites with all the mode responses being at least in the middle of the Likert-scale, many in the upper scores. The overall ANOVA showed differences between the ACNP sites but no differences between the ACNP and their corresponding control sites (p.50). Not surprisingly, further analysis of the data found the quality of life score was positively related to the health score and the general satisfaction score was positively correlated with the health of the individuals.



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A total of 187 General Satisfaction Questionnaires were collected from both the ACNP and control sites (only one control site was involved in WA and the ACT). At both control and ACNP sites, the mode response to all questions was either 'mostly satisfied' or 'very satisfied'. The total general satisfaction score (out of a maximum of 108) of residents at control sites was 90.3 +/- 1.9 and 95.3 +/- 0.9 at the ACNP sites showing a higher general satisfaction with the ACNP sites. There were statistical differences between the satisfaction at different RACF sites using an ACNP, and one ACNP site had less satisfaction levels than the control site however, as the individual sites used different personnel to administer the questionnaires, this factor may have violated the results. Residents with longer lengths of stay were generally more satisfied (p.59). The overall finding though was that those residents receiving nurse-practitioner-like services had higher general satisfaction scores associated with higher health scores, and higher quality of life scores were associated with higher health scores (p.76).

The resident focus groups were recorded and conducted by project staff from the RACF to ensure residents felt comfortable in familiar surroundings and to promote openness. The conclusions of all resident / relatives focus group interviews was that the nurse practitioner candidates were "seen mostly to be readily available, and to be able to deal with issues sooner" (p.62), avoiding unnecessary resource use. There were initial mixed perceptions of the role but residents grew to accept the role as they became more familiar with it (p.62), seeing 'the nurse practitioner candidate as a positive addition to the aged care environment" (p.68). They felt more secure with the candidate present stating the health care of residents was considered improved, recognising the candidates had a higher level of education and practical skill. As per the findings of other international studies, residents considered the availability of the

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ACNP enabled more immediate access to actions which addressed GP unavailability issues with the ACNP preventing admission to hospital.

The Stakeholder focus group findings were similar to the resident / relatives findings. The ACNP was seen as a staff resource, educator and a conduit between other staff and the GP, allied health professionals and pharmacists increasing understanding through the provision of information couched in more medical terms. One GP noted they enjoyed the collaboration and bouncing possibilities around, obtaining background information that assisted in decision making instead of receiving "just a message from [other staff]" (p.70). Stakeholders saw the role as providing an "enhanced level of holistic care", concerned though that the role was unsustainable with the ACNP spread very thin on the ground and that GPs that had not come on board were those who most needed to.

#### **The National Trial's ACNP work-time breakdown**

Average time spent on resident consultation at the start of the trial was 62 minutes compared with 38.8 minutes at the end but regardless of these times, the services by the ACNP were found to be more costly as only 17% of their time related to direct resident service delivery. Various explanations were provided to describe why this was the outcome including the need to communicate with the GP regarding decisions, documentation requirements of aged care in Australia, newness of the role, attendance at education and conducting staff education and mentoring services, developing clinical guidelines and other organisational activities (p.78-79).

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### **Other National Trial findings**

The demographic data showed similar resident gender, service frequency, self assessed quality of life scores and length of stay in weeks characteristics across both the ACNP and control sites (p.46). The data regarding amounts residents had paid for ie. medications in the previous six months showed a majority had spent more than \$150 but due to the large proportion of residents unable to respond to these questions, this detail was excluded from the more detailed examination of the entire health and questionnaire data (p.47).

### **The National Trial ACNP core interventions**

The Report indicated that it was insufficient to conduct a project where the practitioner could not function as an endorsed practitioner with prescribing rights and the ability to order tests. However, the study was at least able to describe an effective role and demonstrate the leadership possibilities which would promote positive health outcomes for older persons. The final listed data related to identified descriptions of core required ACNP interventions such as, the coordination of flu prevention activities, identification and treatment of infections, pain and complex wound management, medication and diagnostic ordering for acute and other conditions and adjustment of regimens as required, specialist referral and restraint management approvals (p.75). No difference was found between the ACNP and medical practitioner decisions re the 67 valid cases of ACNP medication prescribing activities included in the analysis. Significantly more prescriptions though were ordered by the GPs during the period (86/100 visits compared with the ACNP rate of 29.5/100) however, this was attributed to the fact that the GP was often called in specifically by service users to prescribe medication. Similar findings were identified regarding the ordering of diagnostic tests ie. GPs ordered significantly more

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diagnostic tests (at least one pathology test per 16.4% of consultations and at least one imaging test for 7.8% of consultations) than the ACNP who ordered one diagnostic test per 6.7% of consultations. The findings suggested that the ACNP was unlikely to increase community costs due to diagnostic test ordering.

### **The National Trial's identified limitations and role barriers**

Limitations of and barriers re the introduction of the role included, the lack of National CPGs or a national formulary or curriculum for ACNPs, no consistent State regulations, the need to define the role as a generic not person-specific role, the requirement to have "best practice" resources and ongoing professional development activities available for ACNPs. Various other needs were identified including the need to recognise and promote the role in the sector and across the population under a national policy, to conduct a further national trial with licensed ACNPs, to attribute Medicare Provider status to NPs, to enable NPs to prescribe under the PBS and to identify a preferred model of service delivery (Joanna Briggs Institute, 2007).

### **In Summary**

The literature has shown that the introduction of and respect for the role of a NP in other English speaking countries is far more advanced than Australia. In relation to the aims of the literature review ie. to answer the following questions:

- first, what are the outcomes of an ACNP practicing in a residential aged care setting;
- secondly, what factors have impacted upon the introduction of such a role in a RACF or other aged care environment; and
- third, would the introduction of such a role be beneficial to older persons in Australia,

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this review found that the role of a nurse practitioner around the world and specifically an ACNP, involved positive clinical and other outcome/s for the persons they cared for. The barriers that impacted on their practice included a lack of physician support in some jurisdictions, and poor management practices which did not promote the role adequately.

The review showed that the definitions of extended practices of NPs in other countries are the same or similar to that in Australia and the regulatory battles recently experienced by Australian NPs reflect those experienced in the past by NPs in other countries. Given that the NPs in these countries have advanced along their professional journey regardless of the opposition, there is hope for the expansion of the role in Australia. Also, numerous studies demonstrated favourable comparisons between the practices of and outcomes of treatments initiated by NPs and medical practitioners, in numerous health care settings, further supporting the introduction of the role in Australia.

Achieving recognition for the ACNP is also assisted by the numerous studies which demonstrated the benefits to older persons of the ACNP role. The studies showed ACNPs were well established in acute, residential and community health care settings and that the role included not only advanced clinical assessment and treatment but clinical and nursing leadership for care staff. Older persons experienced positive outcomes regardless of the varying residential aged care settings if the ACNP understood and undertook staff culture changing activities to overcome ageist attitudes and medical opposition. However, medical and government opposition to the expansion of the role continues to exist around the world at varying levels. The experiences of NPs in Australia, particularly in the acute setting, show that an ACNP

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will require courage and tenacity if they are to overcome the existent hurdles to benefit the older population of Australia.

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## **4 METHODS USED TO EVALUATE THE ROLE OF AN AGED CARE NURSE PRACTITIONER IN VICTORIA AUSTRALIA – THE RESEARCH PROJECT**

### **4.1 AN INTRODUCTION TO THIS RESEARCH PROJECT**

The previous chapters have outlined the role of a NP and an ACNP in various countries, the forces that impacted on the role and the scope of and outcomes of implementing such a role. Prior to this study, no others in Australia had examined the role of an ACNP. Subsequent to this 2003 study, two projects were commenced in 2004 and 2005 by other organizations. Some of the findings of this first ACNP research project were validated by the findings of the subsequent two projects and this chapter outlines these original findings.

### **4.2 THE SITE - AN OVERVIEW**

A RACF in Melbourne - Greensborough Private Nursing Home (GPNH) - was successful in their submission to participate in the Victorian residential care Aged Care Nurse Practitioner Trial Project (the Project) which this researcher subsequently conducted. GPNH is a mature provider of clinical, medical, social, and emotional support to 60 residents. In 2003, the average age of residents was 82 years old. It is one of approximately 825 RACFs in Victoria. In 2003 the average size of a RACF in Victoria was 45 places and GPNH at that time was one of the 355 RACFs with 45 places or more, the other 470 homes in the State ranged in size from 2-44, with 70 of those being rural based homes with less than 20 places. GPNH employs Registered Nurses Division 1 and Division 2 along with trained personal care attendant staff.



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Over the past 10 years, minimal turnover of RNs has resulted in an experienced RN base. The following chapter outlines the methods used to examine the outcomes related to the interventions of the ACNP at this site, from which a definition of the role of the ACNP has been elicited.

### **4.2 SELECTING PROJECT PARTICIPANTS**

#### **Sample Size Determination**

To conduct this project, the project sample size was determined by the number of residents present at GPNH at the beginning and subsequently admitted to GPNH during the study. Only residents who received care from a medical practitioner who had agreed to participate in and support the study were invited to participate.

#### **Recruitment to the Study**

At the start of the project, information regarding the role of an ACNP, the candidate's role in the facility, the types of activities they would be performing and actions they would undertake were described to all residents and/or their representatives both verbally and/or via an information set. Statements addressing the requirements of the National Privacy Act Principles and the Health Records Act Privacy Principles were included. Data was only collected from residents once their consent forms were returned. Residents who were admitted to the facility during the study and whose GPs were willing to participate in the activities of the study, were also invited to participate.

### **Demographics of Participants**

The average age of residents of GPNH in the Project year was 86. To establish whether the residents were representative of a typical residential aged care facility, the RCS (clinical and functional care provision) scores were compared between this facility and three others.

## **4.3 WORKING WITH THE OTHER AGED CARE TRIAL PROJECTS**

### **Aged Care Nurse Practitioner projects in Victoria**

In late 2002, the Victorian Department of Human Services decided upon three organisations to examine the quality and benefits of care provided to patients and residents in three health care settings: community care, residential care and sub-acute care. Greensborough Private Nursing Home (GPNH), the Royal District Nursing Service (RDNS) and Broadmeadows Health Service (BHS) were chosen.

As the ACNP role needed to be defined so future applicants for nurse practitioner registration could practice in each of these aged care settings, collaboration between the three chosen aged care projects was vital. Regular meetings with the aged care project team members from Broadmeadows Health Service and the Royal District Nursing Service commenced in October 2002. During these consultations, it became apparent that the scope of the ACNP role in each setting was different; however, collaboratively the projects could establish:

- the list of medications that would be suitable across each aged care setting
- the extensions to practice concerning each setting including the relevant diagnostics an ACNP may need to order

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- the Clinical Practice Guidelines (CPGs) required to inform the aged care nurse practitioner's decision-making whilst practicing as an ACNP, and which would need to be submitted with an ACNP Nurses Board registration application.

The "Gerontological Protocols for Nurse Practitioners" resource developed by Brown, Bedford and White, (1999) was used extensively by this project team to develop its CPGs due to the extensive nature of the data included. To further support the inclusion of relevant diagnostics, US references by Holmes (2000) and Khan, Fauzia, Sachs, Howard, Pechet, Libderto and Snyder (2002) were also referred to extensively.

### **Ongoing consultation and development of the role**

During this project, each of the three aged care project teams met regularly to discuss both operational and clinical issues, common concerns related to medicines and diagnostics and the differences between each project type. The 'three aged care projects' meetings continued also to discuss issues and solutions as the projects shared common types of issues. Initially, monthly project meetings were held at La Trobe University to establish the evaluation activities that would be included in the final evaluation and report for the Department of Human Services. In the last six months of each of these the project, these meetings were held every three months as the group wished to maintain a collegiate collaborative relationship.

### **Data Collection across Projects**

The three project teams needed to establish a common set of medications suitable for an ACNP to prescribe, as the list of medications that would ultimately be

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submitted to the nurses board for future ACNP applicants had to be common to each of the three environments. This also required regular discussions regarding the types of events each practitioner would be referred to, so that relevant common CPG's, which defined the use of the medications could also be established. Subsequently, a common list of extensions to practice and the associated clinical practice guidelines each project needed to effectively document was created.

A common set of data elements was originally decided upon to capture this information and an Information Technology consultant was contracted to develop a common Access Data Base to use throughout the study to record interventions and surrounding circumstances of each event. Only GPNH and BHS eventually used the database program. A hardcopy 'form' (Appendix 15) was also developed to record event details so the ACNP did not need to access the computer each time he undertook an intervention or needed to add information regarding the event. All aspects of the event were documented on the form. This researcher or a project team member entered the details of events into the database once each 'event' was closed out.

### **Common List of Medications across Projects**

Initially, the projects also attempted to determine a common list of medicines likely to be used by an ACNP. A list was developed following various project meetings. A Pharmacist educator was contracted to write a Medication Manual for the group as a component of the ACNP's education. The manual detailed ageing body issues related to each medicine and what should be considered if prescribing the chosen ACNP medicines (Appendix 13 - Index of Medication Manual).

#### **4.4 SELECTING THE RIGHT METHODOLOGY**

##### **Research methodology rationale**

Various research designs were considered and the methods utilised in this research were chosen because they documented both quantitative and qualitative data. The collection of quantitative data was determined necessary to demonstrate empirical evidence regarding the impact of the individual nurse practitioner's activities. Qualitative data was obtained to establish the impressions of the role from staff, health professionals, residents and their representatives so that a future definition of the role could be determined.

Hence, to establish the physical, social and organizational related outcomes of the ACNP's interventions, it was decided that both quantitative and qualitative research activities were required. The research related to ACNPs conducted in other countries concentrated generally on one methodology per project. as this was to be the first study in Australia, an ambitious approach was adopted to evaluate as many outcomes as possible so that a thorough description of what the ACNP role in Australia would entail could be obtained. this could then lead to future research questions and directions – which is subsequently what occurred following this project.

The functional status of a resident can be quantified using validated score based tools, hence a quantitative analysis of the functional status of the resident pre and post the interventions of the ACNP was determined appropriate using Barthels

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functional status assessment. The results were then statistically analysed for changes pre and post the ACNP interventions.

To establish whether there were any changes in the resident's social status, again, a previously validated scored, social assessment was utilised and the results statistically analysed for changes pre and post the ACNP interventions.

A simple comparison of hospital admissions data pre and post the project was conducted to determine if there were any statistically significant changes.

The satisfaction of residents or their representatives pre and post the ACNP interventions was statistically analysed from the data collected from detailed questionnaires issued to both parties.

The practice activities of the ACNP were statistically analysed pre and post the interventions to establish if the ACNPs role significantly changed from the previous Charge Nurse role the ACNP candidate was employed as. The documentation regarding residents, completed by the ACNP pre and post the project was analysed using a records audit tool, to establish if there were any significant differences.

To determine the attitudes and experiences of the staff and residents during the project, focus group meetings were conducted and transcribed with a cursory thematic qualitative analysis undertaken.

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And finally, it was determined by this researcher that to complete the story of some of the outcomes of the ACNPs interventions in the organisation, some case studies would be presented as examples of resident experiences.

### **4.5 PREPARATION**

#### **Ethics Approval**

Prior to Ethics approval, various tools needed to be developed by this researcher to evaluate the ACNP activities, focus group types needed to be determined and the study methodology established. Ethics Approval for the project was initially obtained from the Latrobe University Human Ethics Committee with final approval from the Royal Adelaide Hospital Research Ethics Committee on 9 January 2006. The study proceeded with no changes to its submitted design. The granted RAH Protocol No. was 060103.

#### **Determining the necessary phases of the Project**

Meetings between this researcher, the ACNP candidate and the management of the aged care service established the study's regulatory framework. In developing the project's framework, all stakeholders needed to be identified and all necessary regulatory and professional responsibilities had to be addressed.

Essentially the phases of the study can be defined under the following headings:

- Determining the Model of care (and identifying professional and regulatory requirements)

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- Development of communication strategies and focus groups and their framework
- Development of an Education Program for staff and residents and/or their representatives
- Defining the scope of extended practices and commencement of the development of draft clinical practice guidelines
- Refinement of the Evaluation method and development of evaluation tools
- Implementation of the model within regulatory boundaries
- Ongoing consultation and development of the role with other aged care projects
- Analysis of the results of the various research activities undertaken during the project.

Members of the focus groups needed to then be determined, sought, invited and organised and consent was required from residents or their representatives prior to the NP acting in such a role in their care.

#### **Determining the Model of Care**

Prior to the commencement of the project, following numerous discussions, management and the researcher determined that the NP role would be incorporated into the Charge Nurse role. By choosing this model, it was thought the ACNP / charge nurse would be able to use their intimate knowledge of residents' needs and act on these needs more completely than they were able to in the past. Hence, one of the



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organisation's charge nurses undertook to perform the ACNP role and complete the further study required to register as an ACNP during and following the study. GPNH also chose not to replace the Charge Nurse role for financial and practical reasons as an ACNP would have to obtain assessment information regarding the resident which a Charge Nurse already collected and documented. On occasions GPNH commenced the 'following ACNP shift' nurse two hours earlier so that the ACNP could be relieved two hours before his shift ended so he could conduct his assessment and other activities without interruption. The difference was that the ACNP could conduct a more comprehensive assessment than he would have as a charge nurse (effectively due to time constraints) and be able to act on this information using arranged Standing Order type systems, rather than spend considerable time attempting to contact GPs to act. As mentioned previously, standing order systems were introduced to address the inability to prescribe medications during the project independently, as the legislative changes to support the ACNP project role had not yet been enacted.

Support was obtained from five of the residents' local general practitioners who then further supported the chosen ACNP candidate acting in the role, following a meeting with this researcher at which the role was defined and further explained. In total, these GPs cared for about three-quarters of the residents in the home during the project.

#### **NP responsibilities**

Prior to the project's commencement, staff were provided both one to one and group education regarding the ACNP role, both formally and informally. In this way staff could ask questions of the ACNP as and when they arose to ensure full collaboration

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could occur. This took the ACNP away from his assessment activities at times. A resource manual which included a NP Policy and Procedure and NP medication management Policy and Procedure was distributed to each of the two sections of the home. The documents defined when staff should refer residents to the ACNP however, as the ACNP was the Charge Nurse (CN), staff practices did not change significantly as it was their usual role to inform a CN of any resident concerns and it was usual CN practice to investigate matters. Again, the significant difference between the previous CN role and the ACNP / CN role related to the interventions the ACNP was able to initiate post an assessment and the extent of the assessment.

When an issue was referred to the ACNP, he would conduct a comprehensive health assessment, discuss the issue and his findings with other Registered Nurses. He then organised appropriate health referrals or contacted individual residents' GPs and recommended a diagnostic or medication change if he considered this was appropriate. The arranged systems and procedures then enabled these recommendations to be immediately acted upon as opposed to the previous system where the CN would have to wait for the GPs visit. Through this ACNP consultation method, each resident's care plan was able to be immediately reviewed and outcomes evaluated with respect to the planned interventions. Hence, the comprehensive aged care health assessment influenced ongoing care provision and addressed any clinical matters in an expert and timely manner.

#### **Working without NP authority**

Victorian Drugs / Poisons and Nurses legislation already supported the role of the nurse practitioner, but to be a NP in any category in Victoria, a demonstration project

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needed to be conducted first as it was through these projects that the role and relevant drug formulary were established. Hence, NP candidates involved in any of the NP projects funded by the Department of Human Services were not yet endorsed by the Nurses Board because the specific nurse practitioner role and formulary for that nurse practitioner category had not yet been approved by the Poisons advisory committee and endorsed through the various regulatory bodies. Therefore, the ACNP candidates were unable to use the nurse practitioner prescribing powers within the legislation. Rights to order diagnostics without medical practitioner involvement were also unavailable to nurse practitioner candidates and funding to support medicines or diagnostics ordered by a NP via Medicare was not established. Systems therefore needed to be developed to work around these limitations to support the full scope of the ACNP role being investigated.

The main initial consideration of the project was: how to develop a model of NP care within the regulatory constraints presented to the project team. After discussions with the project's (pro-bono) solicitor, it was decided that medicines that were Schedule 2 and 3 and considered by the Nurse Practitioner to be appropriate for the needs of the resident could be provided by the ACNP, as they could by all RNs. This was in accordance with "nurse initiated" approval forms established with the individual resident's medical practitioner (Appendix 6). Each resident was issued with a form (Appendix 6) that listed all nurse initiated medicines considered appropriate for use at GPNH. GPs were then asked to sign next to the nurse-initiated medicines listed if they considered the medicines were appropriate for the person to have under certain circumstances. They were also asked to document if they thought there were

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issues that needed to be considered regarding these medicines. These forms and the details recorded by the GPs were then referred to by the ACNP as necessary.

As a Standing Order environment could not be established in a Victorian residential aged care setting, all Schedule 4, 8 and 9 medications needed to be prescribed by the medical practitioner. When a resident clinical issue arose, the nurse practitioner would make a medication or diagnostic related decision, based upon his assessment, contact the medical practitioner and discuss the issue of concern (whether it was a diagnosis, need to order a diagnostic or order / change a medication). If the medical practitioner concurred with his decision, the GP would complete the required prescription or diagnostic order form and send it to the appropriate location whether it was the pharmacy or the home. In this way, the legislative barrier, which prevented the nurse practitioner from these activities, was addressed. Later in the project, a system where the NP could independently order mid-stream urine tests and wound / other swabs was established with the GPs (Appendix 8).

The difference between the practice of the ANP compared to the RN role was the decisions made by the ACNP. The ACNP made recommendations for care interventions similarly to how the medical practitioners would normally have made decisions ie. following a more detailed assessment than would normally be undertaken by registered nurses. The ACNPs reasons for decisions regarding a proposed intervention were recorded prior to contacting the GP. A comparison of what the GP recommended was undertaken to determine if the decisions were congruent with what a GP would have made. The results of these decisions are presented later in this chapter. By recording these events in detail, it was determined

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that the ACNP role could still be defined despite the inability of the candidate to actually write the orders or prescriptions.

### **Communication Strategies and Focus Groups**

A medical practitioner focus group was established and two formal meetings convened, one before and after the project. The lists of topics discussed at each meeting are recorded in Appendices 18 and 19. The ACNP, however, discussed resident and ACNP management issues with the general practitioners each week and systems were reviewed in response to these discussions. Issues related to the practical implementation of pathology test ordering in a non registered ACNP role resulting in Standing Order type systems being arranged as the GPs acknowledged the ACNPs level of expertise.

Another key stakeholder focus group consisting of residents and/or their representative was established. The initial meeting's purpose in October 2002 was to discuss the ACNP role to assist in residents' understanding of the activities the ACNP would undertake and to determine if they had any reservations regarding the model of care. Each person was supportive and optimistic regarding the role's activities.

A staff focus group was convened however due to the few staff who could attend the post project meeting, views of staff were recorded on sheets which were provided to staff who worked with the ACNP, listing the same questions as were asked of the staff who attended the focus meeting.

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Other meetings included:

- weekly management, NP and Researcher meetings to discuss any implementation, organisational or policy issues that needed addressing
- meeting a Health Economist with the other two project representatives, Professor Pearson and academic assistant Cathy Ward to establish a method of evaluating the economic implications of the role as Professor Pearson's role and that of Latrobe was initially to prepare the application to conduct the project and submit it to DHS, subsequent to this, he became this researcher's supervisor
- a phone meeting with ACT Professor Glen Gardiner to discuss the ACT nurse practitioner trials' model for reference despite the fact that they had not conducted an ACNP project previously, but had been involved in NP based research (and this was the only contact made with Professor Gardiner throughout the project)
- a phone meeting with the Commonwealth's Federal Nurse Advisor to determine what tools they could release for use in the project and
- staff meetings, where updates were provided to staff regarding the project by either the ACNP or Researcher.

Communication with stakeholders was also achieved in a variety of other methods including:

- provision of a Nurse Practitioner Information Folder to staff (Appendix 14 - Index of folder) with various relevant articles for staff reference prepared by this researcher

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- provision of a copy of the ACNP Medication Folder to staff following its completion by the contracted pharmacist author
- letters sent to general practitioners regarding the ACNP role and project purpose prepared by this researcher
- letters sent to residents and / or their representatives explaining the role purpose prepared by this researcher.

## **4.6 EVALUATION METHODS**

### **Evaluation components**

The project evaluation addressed the following evaluation components and each research activity was designed to provide evidence for each of these components:

- Component 1: Determining the NPs scope of practice pre and at the end of the project
- Component 2 : The quality of the service provided by the Nurse Practitioner candidate (up to date with evidence based practice, consumer experience, consumer choice, consumer values)
- Component 3 : The appropriateness of the Nurse Practitioner service provided including consumer experience, consumer satisfaction, safety, continuity of care; satisfaction re the level of access to the Nurse Practitioner service including availability, acceptability, convenience, timeliness, choice and equity issues

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- Component 4: The feasibility of the Nurse Practitioner role including ongoing employer and management support of role implementation, effectiveness, efficiency, cost-benefit, sustainability; the role of collaborative practice including identification of professional roles and boundaries, participation in case conferencing, referrals to and from other health care workers, initiation of care plans, Nurse Practitioner candidate experience, health professional experience
- Component 5: Client outcomes including consumer experience, symptom relief, complications, consumer satisfaction, physical, psychological and social function, impact on other services, educational value, unexpected outcomes
- Component 6: Cost, including changes in resource use, production effects, costs to the consumer and community, costs to the health system, professionals' time, supplies, capital, overheads, costs of other services, cost-effectiveness, indirect costs and
- the restrictions/limitations to current practice and the scope for improving and broadening practice of the Nurse Practitioner service.

The following paragraphs describe each evaluation component, the research tool(s) used to evaluate the relevant component and how they were utilised during the project by this researcher.

#### **Component 1      Scope of Practice Pre- and Post-Implementation**

The Nurse Practitioner candidate's scope of practice was evaluated using a 'Scope Of Practice Data Collection Tool' developed by the researcher through slight modification of a tool developed by Hegney, Pearson and McCarthy (1997). This tool was used to



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observe and record the candidate's practice for two shifts prior to and at the end of the project. Two shifts, morning and evening, were chosen as these shift types addressed different RN responsibilities and resident presentations ie. when residents awoke, their physical and mental capabilities were different than when they were ready to retire at the end of the day. Resident needs differed and the ACNP practices therefore needed to differ. The observation tool is documented in Appendix 16. The tool required the researcher or ACNP candidate to record exactly what activities were performed by the candidate during the shifts. The tool encompassed 22 types of activity, divided into a total of some 155 individual tasks. For example activity 2, 'Resident hygiene', is divided into 13 individual tasks including: sponging, bathing, showering, perineal care, eye care, ear care, mouth care, foot and nail care, hearing aid care, hair care, ear syringing, caring for body after death and making beds. Other tasks include specific assessment activities, ordering of medication or diagnostics, consultation with MDs or family or residents. Only consenting residents were included in the observations.

The results from the two sessions of observation were analysed and compared. The time taken to conduct each activity type pre the ACNP intervention was collated and compared with the time taken post the intervention thereby determining if the scope of practice of the candidate during a working shift had been extended as a result of the implementation of the new model of practice and what the practices actually were. The specific practices which were considered to be 'extended' included any practice which a general RN would not perform eg. ordering a diagnostic or conducting an advanced clinical assessment.

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Another tool (Appendix 15) developed by this researcher was used throughout the project to document each activity undertaken by the ACNP. These details were then entered into a Microsoft Access Data Base specifically designed to record and sort 'ACNP intervention events' for eventual collation and subsequent analysis. This information was used to identify those medications and diagnostics most commonly recommended, which medical conditions and intervention types were addressed by the ACNP and who referred the resident to the ACNP.

### **Component 2      Quality of Service Evaluation Pre- and Post- Implementation**

A randomly selected sample of residents referred to the nurse practitioner candidate were subjected to a validated clinical record audit using the developed "Chart Review – Record Audit", and a quality rating attributed to the findings. Following a review of relevant audit tools, the audit was based on Phaneuf's audit tool (Pearson & Baker, 1992) as adapted by Pearson, Wiles, Goldstone, Bradshaw and Wainwright (1987), (Appendix 17) . It was undertaken by the researcher on residents' records within the sample, prior to and following the implementation of ACNP interventions to measure changes following the implementation of extended practices. It measured compliance with 50 different criteria, grouped into seven categories (Appendix 17). A score was given for each criterion and the resulting total compared against the maximum possible total to determine how well the clinical records were maintained. The sample was chosen to be 30% of the residents who had agreed to participate in the model of practice so that sufficient records of participants would be available to audit post the intervention given a probable attrition of approximately 20% of participants due to death in a 9 month period.

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Although the researcher was not blinded to the 'pre-post' nature of the resident records due to resource constraints, the use of this previously validated tool allowed objectivity to be maintained. Analysis, using descriptive and inferential statistics was undertaken by this researcher to determine any differences between the two time points.

### **Component 3      Consumer Evaluation Pre- and Post-Implementation**

Before and after the project, *General Satisfaction Questionnaire 1a* (GS1a) and *1b* (GS1b) was administered to each participating resident (Appendices 24 and 25) and the *General Satisfaction Questionnaire 2a* (GS2a) and *2b* (GS2b) was mailed or hand delivered to their representative / legal guardian. The difference between GS1a and GS1b and GS2a and GS2b was the tense used in the questions relevant to administering the questionnaires pre and post the project. The questionnaires should have taken no longer than 15 minutes to complete. Analysis of the collected consumer evaluation data, using descriptive and inferential statistics was conducted to determine any differences between the two time points. The post-project questionnaire differed by one question from the pre questionnaire as the steering committee decided to remove the question asking whether the resident was satisfied with the way their medications helped manage their needs given this question did not directly relate to ACNP actions.

Residents' or their representatives' views on the services of the organisation prior to the implementation were determined by undertaking a focus group meeting. A list of the steering committees pre-determined topics discussed at the focus group

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meetings is provided in Appendix 18. The focus group meeting, facilitated by the researcher, lasted 90 minutes and was audiotaped and transcribed for eventual thematic analysis although only a cursory analysis was undertaken in the end. The focus group meeting was not able to be organised with the original residents post the intervention due to the participating resident's frailty, hence the results of the resident and representative's questionnaire had to be relied upon for their final views and not a comparative analysis of the views between the two events.

### **Component 4      Key Stakeholder Evaluation Post-Implementation**

Key stakeholder views on the nurse practitioner model of practice were elicited by undertaking a focus group meeting following the implementation of the model. One group meeting was conducted with the residents' GPs, the DON, DDON, ACNP and the researcher and the list of topics discussed at this meeting is provided in Appendix 19. The focus group meeting lasted 90 minutes and was audio-taped and transcribed, again for future possible thematic analysis which was not undertaken as part of this project. Views however were determined to contribute to the establishment of a suggested ACNP role model.

Another focus group consisted of nursing staff who provided their views on the implementation of the ACNP role post the project and the perceived effects this had had on resident care outcomes. Nursing staff time was limited hence only two participants attended the post project meeting. Staff indicated that they would prefer to answer a questionnaire, consequently, one was developed utilising the questions that would have been asked at a meeting, to issue to staff who did not attend the

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focus meeting and who actually worked on the shifts the ACNP worked (Appendix 20).

### **Component 5      Evaluative Study of Health Outcomes Pre- and Post- Implementation**

All residents who chose to be a part of the model of practice were assessed before and after the implementation of the nurse practitioner model of practice to obtain data on their health status and level of satisfaction. Health and social satisfaction status were assessed using the following tools: *Barthels Index* (Appendix 19) and *Social Function Assessments - parts I and II* (Appendices 20 and 21). The ACNP undertook the Barthels Index and Social Function Assessments utilising his assessment and knowledge of the residents' abilities / physical-social presentations. This data collection took place prior to and following the implementation of the model of practice. Comparison of results (for both assessments) between the two time points was conducted. A randomly selected control group within the nursing home was used to compare social function ratings with the participating residents.

A more detailed explanation of each tool and their purpose in this study is provided below :

- Barthel's Index (Appendix 21). Barthel's index is based on staff observations of the capabilities of residents in two principle areas: self care and mobility. Nine facets of self care (eg. drinking from a cup, washing and bathing), and six facets of mobility (eg. getting in and out of a chair, walking 50 metres) were examined. Each facet was ranked and scored according to three abilities: (i) cannot do at all, (ii) can do with help, and (iii) can do unaided.

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The maximum scores were 53 and 47 for the self care and mobility indices, respectively.

- OARS Social Resource Scale (Appendix 22). The OARS (Older American Resource and Services) social function assessment was the first of two social function tests that were conducted. The test rates the quality of residents' social relationships according to eight different questions posed to them about their relationships with family and friends. The results are then used to rank the resident social function on a scale of 1-6, with 'excellent social resources' and 'total social impairment' at either end of the scale. The lower the scale the better the social function.
- Social Dysfunction Rating Scale (Appendix 23). The social dysfunction rating scale of Linn, Sculthorpe, Evje, Slater and Goodman (1969) was the second social function test undertaken. Nursing staff that had extensive knowledge of the resident and their life within the nursing home ranked 21 different aspects of the resident's social health on a five point Likert scale, ranging from 'very mild' (a score of one) through to 'very severe' (a score of five). Low self concept, goallessness, anxiety and lack of friends are some examples of the types of topics that are covered in this test. In some cases, questions were not applicable to the resident because he/she had no understanding about the issue and/or how it affected their life. The social dysfunction rating scale was measured in a randomly selected 'control' group of 14 residents of the nursing home not exposed to the nurse practitioner, and a larger group of 26 residents who were exposed to the ACNP. Both groups were measured on

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two occasions (October-November 2002 and October-November 2003) to evaluate any changes in social dysfunction.

- General satisfaction questionnaire. The final tool used to examine the health status of residents before and after the implementation of extended practice was the general satisfaction survey. The comparative results of this survey were considered a good indicator of consumer views and are fully explained in Component 3.

### **Component 6      Economic Evaluation Post-Implementation**

A health economist was consulted at the beginning of the project by the three project teams. It was determined that evaluating the cost savings or otherwise of the project was difficult to elicit from such a short project. The only indicator of cost benefits determined as being useful was that related to hospitalisations. These are presented as a comparison in the pre- post-project phases. A small summary of the costs involved is also included.

## **4.7 FURTHER TOOLS AND DATA COLLECTION METHODS**

The documents used to capture the data required to inform the eventual evaluation, were devised through slight modification of a number of existing tools but further management and supportive tools were required to aid the success of the project and these included:

- ACNP position description (Appendix 1)

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- Consent documents with accompanying information regarding the purpose and extent of the project (Appendix 8)
- ACNP activity recording sheets to aid input of the data into the data base program (Appendix 13)
- GP "Medical Report" sheets which provided an opportunity for GPs to provide information to the NP re what he was to take into consideration when making clinical decisions if the GP wished to do so (Appendix 10)
- An ACNP Policy and modified Medication Management policy and procedure (Appendix 2 and 7)
- A Medications resource manual (Appendix 11)
- Draft protocols and clinical practice guidelines to define the medical knowledge underpinning the practices recommended by the ACNP candidate (Appendix 3 - Index).

The Nurse Practitioner Position description (Appendix 1) and Medication Management Policy and Procedure were developed to ensure that professional responsibilities were well defined and considered in the context of the model of practice. Although medications were ordered by the general practitioners if they were non Schedule 2 and 3 medications, the ACNP initiated the ordering of such following his health assessment, with the GPs deciding upon the ultimate method of treatment following discussion with the ACNP. Various diagnostic order forms were made available to the ACNP by the GPs to use as necessary in pre-determined urgent circumstances with additional forms completed by the GP as required.



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## **5 RESULTS**

### **5.1 INTRODUCTION**

The following results describe an ACNP conducting 'NP-like' practices involving a medical practitioner ordering ACNP-recommended medications (if they were Schedule 4 and 8 medications) and diagnostics. However, not all interventions required such actions; hence, there were other ACNP extensions to practice that distinguished the role from that of a GP or an RN. One example is where the ACNP considered a holistic approach to care by determining the psychosocial needs of the resident based upon the results of a depression assessment conducted when treating a respiratory tract infection. The extension to practice was the subsequent referral to an appropriate health professional and the psychosocial support provided to the resident by the ACNP.

#### **Model of Care**

The majority of the issues that the ACNP addressed were referred to the ACNP during the shifts he worked, either by nursing staff or a member of the management team. The ACNP worked five days a week and on different shifts and was able to address most concerns in a timely manner. If the ACNP was not available, staff contacted the residents' GP using the system described in the ACNP position description (Appendix 1) and the Nurse Practitioner policy (Appendix 2).

Following a detailed health assessment, the ACNP initiated the ordering of medications and diagnostics. Other details relevant to each evaluation activity are

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described below. Statistical or qualitative analysis was conducted where appropriate. Details of the number and types of all resident presentations which the ACNP was involved are presented in Table 4d. Four typical case studies have also been presented at the end of this chapter to demonstrate how the ACNP commonly influenced positive resident outcomes, as a conclusion to the story of the ACNP role.

To establish whether the residents in this cohort were typical of those in other aged care facilities, the Resident Classification Scale (RCS) scores of GPNH residents were compared with those of three other facilities and found to be similar in each of the eight RCS care categories across each site.

### **5.2 COMPONENT 1 – SCOPE OF PRACTICE**

The results of the Scope of Practice observational tool comparison pre- and post the ACNP interventions are described below. The activities were conducted over two shifts in October 2002 (Appendix 16) and two post-implementation shifts in August 2003. The data from both morning and afternoon shifts were combined and are presented in Table 4a, Figures 1 and 2.

Before the intervention, records showed that the ACNP performed a total of 186 actions amounting to 874 minutes, an average duration of 4.7 minutes. As shown in Table 4a, almost half (48%, 422 minutes) of the candidate's time was spent dealing with non-resident contact tasks (item 19 of the tool). The breakdown of these 422 minutes is not shown in the table however, the results showed, most of this time was spent on administrative tasks, mainly on documentation (173 minutes on for example

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resident notes, resident transfers, completing incident reports and modifying nursing care plans) and dissemination of resident matters (116 minutes spent on organising pathology results, nursing reports). Meal breaks were another significant component of this total (96 minutes). Pharmacy work (20%, 175 minutes) was the second most time intensive activity after non-resident contact. The most frequently undertaken activity was prevention of infection, with handwashing (50 of the 54 incidents) being the most conducted infection control activity. Again, the minutiae of these categories is not represented in the table.

Following the implementation of extended practice, less time (352 mins 36% less) was spent in non-resident contact. The main components of the non-resident contact (documentation and dissemination – not detailed in the table) both decreased compared to pre-implementation values, to 140 (compared with 173 pre) and 79 minutes (compared with 116 pre) respectively. However, the time spent in meal breaks remained the same. The amount of time spent in pharmacy work increased slightly to 28%, but the most notable increase was the increase in Category/Item 1, the assessment of residents, from 1% of time before implementation to 14% post. The total number of activities following implementation (186 pre vs 120 post) was 35% less and the average duration of each activity (4.7 minutes pre vs 8.2 minutes post) was 45% greater.

Not surprisingly, the other areas which the ACNP spent more time on were medically related activities as per Table 4b. For example, more time was spent discussing issues with medical practitioners (0.4% pre the project compared with 1% of the total ACNP time post the project), ordering investigations (0% pre, 1.5% post) and

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pharmacy related work (20% pre and 28% post). More time was also spent providing resident and family education (2% pre and 3.3% post). These audit activities were not statistically compared, the results are presented as part of the many evaluation activities undertaken to demonstrate a broader perspective of the role.

**Table 4a -Summary of the scope of practice audit using the data collection tool of Hegney, Pearson and McCarthy (1997). The time taken by the ACNP for a range of actions under each scope of activity was recorded. The data presented are from two shifts (one am, one pm) before and after the introduction of the nurse practitioner.**

Scope of activity	Pre-nurse practitioner (October 2002)			Post-nurse practitioner (August 2003)			% change in time from Pre to Post
	No. of actions	Total time (mins)	PRE - % of time spent on this activity	No. of actions	Total time (mins)	POST - % of time spent on this activity	
1. Assessment of resident	7	12.8	1.46%	23	134	13.60%	12.13
2. Resident hygiene	9	24.1	2.76%	1	6.5	0.66%	-2.10
3. Resident mobility	12	33.3	3.81%	0	0	0.00%	-3.81
4. Providing a safe environment	0	0	0.00%	0	0	0.00%	0.00
5. Preventing infection	54	39.8	4.55%	33	24.8	2.52%	-2.04
6. Medical officers	2	3.3	0.38%	1	9.5	0.96%	0.59
7. Pharmacy work	8	175.3	20.06%	12	277.7	28.18%	8.12
8. Resident / family education	6	17	1.95%	4	33	3.35%	1.40
9. Nutrition	7	51	5.84%	3	40	4.06%	-1.78
10. Fluids and electrolytes	0	0	0.00%	0	0	0.00%	0.00
11. Oxygenation	0	0	0.00%	0	0	0.00%	0.00
12. Faecal elimination	1	6	0.69%	1	9	0.91%	0.23
13. Urinary elimination	0	0	0.00%	0	0	0.00%	0.00
14. Medications	26	12.4	1.42%	5	11	1.12%	-0.30
15. Wound/skin care	11	20.1	2.30%	3	15.5	1.57%	-0.73
16. Perioperative / periprocedure care	0	0	0.00%	0	0	0.00%	0.00
17. Diagnostic procedures	3	6	0.69%	4	8.5	0.86%	0.18
18. Collection of pathology specimens	1	5	0.57%	0	0	0.00%	-0.57
19. Non-resident contact tasks	28	421.9	48.28%	18	352	35.72%	-12.56
20. Liaison with other health care professionals	2	12.5	1.43%	1	5	0.51%	-0.92
21. Ordering of investigations	0	0	0.00%	7	15	1.52%	1.52
22. Other activities	9	33.5	3.83%	4	44	4.47%	0.63
<b>Total</b>	<b>186</b>	<b>873.9</b>	<b>100%</b>	<b>120</b>	<b>985.4</b>	<b>100%</b>	

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Less time was spent by the ACNP on non-resident contact activities (48% pre, 36% post) but also on providing physical assistance to residents for hygiene (2.8% pre, 0.7% post), nutrition (5.8% pre, 4.1% post - assisting residents to eat) and mobility (3.8% pre, 0% post) needs as per Table 4c, again demonstrating the focus of the ACNP on more clinically related interventions.

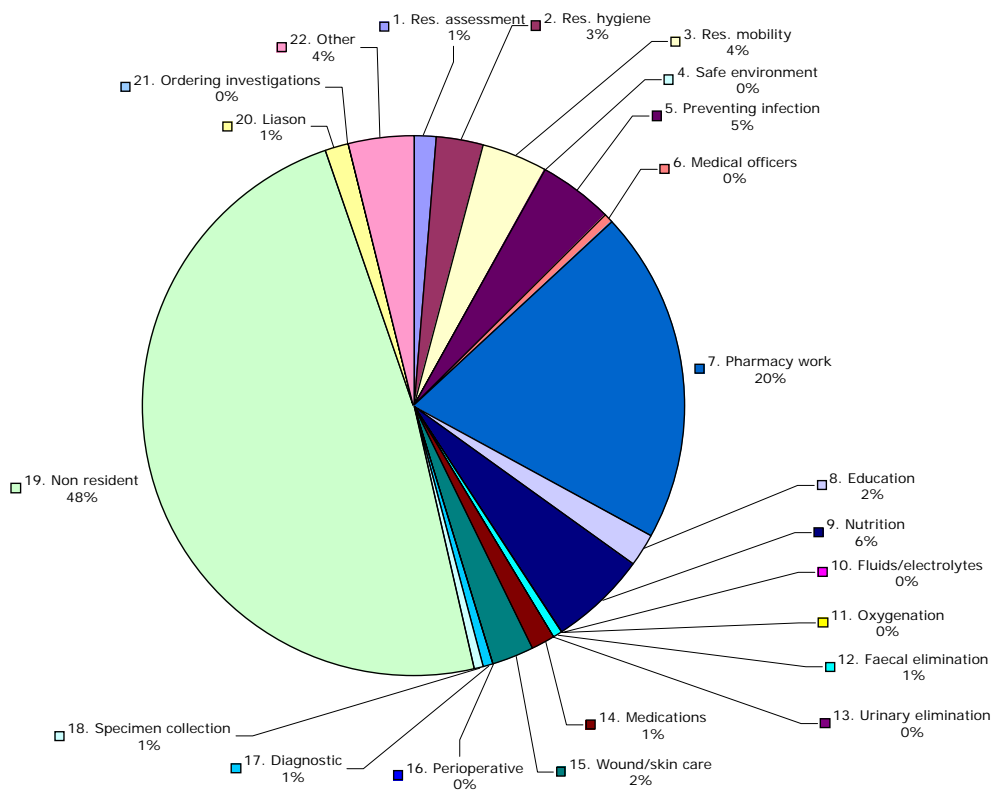
**Table 4b - Activities which the ACNP spent more time on after the introduction of the NP role shown as a % of total time spent.**

Scope of activity	Pre-nurse practitioner (October 2002)		Post-nurse practitioner (August 2003)		% change in time from Pre to Post
	Total time (mins)	% of total time spent on activity	Total time (mins)	% of total time spent on activity	
1. Assessment of resident	12.8	1.4%	134.0	14%	12.13
6. Medical officers	3.3	0.4%	9.5	1%	0.59
7. Pharmacy work	175.3	20%	277.7	28%	8.12
8. Resident / family education	17.0	2%	33.0	3.3%	1.40
12. Faecal elimination	6	0.69%	9	0.91%	0.23
17. Diagnostic procedures	6.0	0.7%	8.5	0.9%	0.18
21. Ordering of investigations	0.0	0%	15.0	1.5%	1.52
22. Other activities	33.5	3.8%	44.0	4.5%	0.63

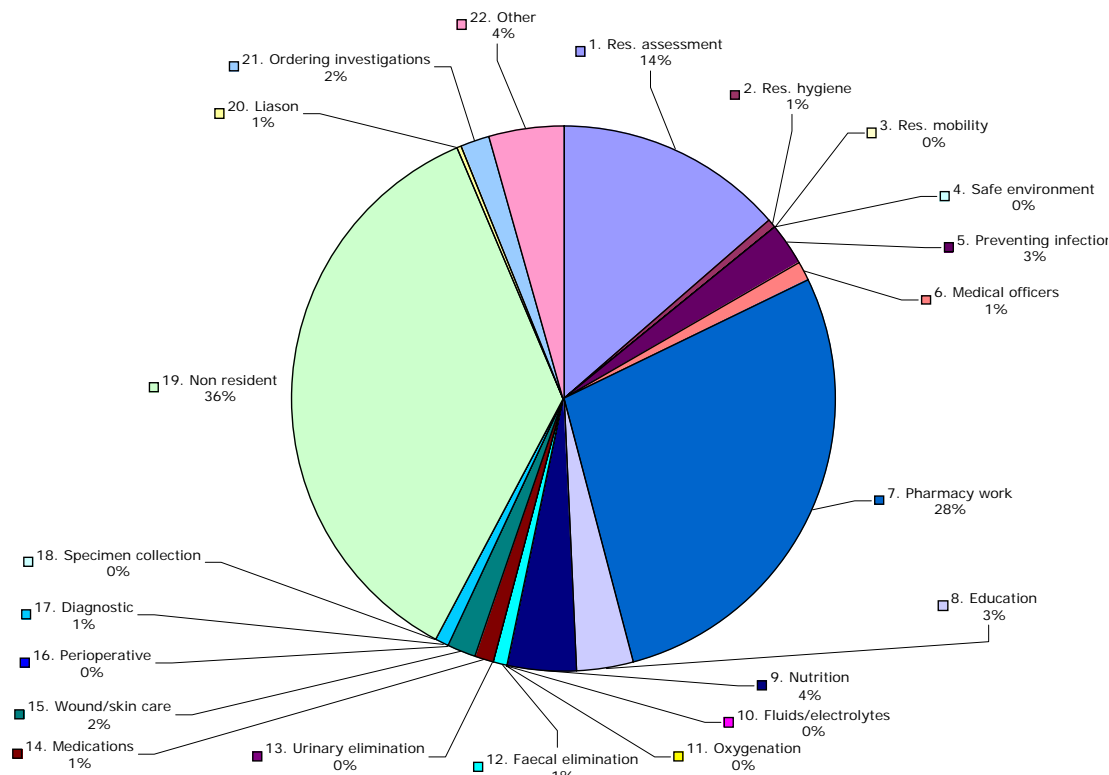
**Table 4c - Activities which the ACNP spent less time on after the introduction of the NP role shown as a % of total time spent.**

Scope of activity	Pre-nurse practitioner (October 2002)		Post-nurse practitioner (August 2003)		% change in time from Pre to Post
	Total time (mins)	% of total time spent on activity	Total time (mins)	% of total time spent on activity	
2. Resident hygiene	24.1	2.76%	6.5	0.66%	-2.10
3. Resident mobility	33.3	3.81%	0	0.00%	-3.81
5. Preventing infection	39.8	4.55%	24.8	2.52%	-2.04
9. Nutrition	51	5.84%	40	4.06%	-1.78
14. Medications	12.4	1.42%	11	1.12%	-0.30
15. Wound/skin care	20.1	2.30%	15.5	1.57%	-0.73
18. Collection of pathology specimens	5	0.57%	0	0.00%	-0.57
19. Non-resident contact tasks	421.9	48.28%	352	35.72%	-12.56
20. Liaison with other health care professionals	12.5	1.43%	5	0.51%	-0.92

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**Figure 1. The proportionate amount of time spent in various activities by the nurse practitioner candidate over two shifts *BEFORE* the implementation of extended practice. Data collection tool modified from Hegney, Pearson and McCarthy (1997).**



**Figure 2. The proportionate amount of time spent in various activities by the nurse practitioner candidate over two shifts *AFTER* the implementation of extended practice. Data collection tool modified from Hegney, Pearson and McCarthy (1997).**

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The analysis of the decisions made by the ACNP regarding either a medication change, the ordering of a diagnostic test or the prescribing of a new medication showed that GPs concurred with the ACNPs recommendations for changes in care or required interventions 175 out of 179 times.

**Table 4d - Summary of the presenting problems that required ACNP attention. The data is presented as both the number of referrals received by the ACNP in relation to each presenting problem and that figure as a percentage of the ACNP's time from 2/1/03 – 1/8/03.**

<b>Presenting Problem addressed by NP</b>	<b>No. Referrals</b>	<b>Percentage of total events</b>
Vaccination - flu/pneumovax	33	18.44
Respiratory tract - URTI / LRTI / chronic conditions	20	11.17
Bowel management	16	8.94
Pain - management of	15	8.38
Behaviour / confusion	14	7.82
Skin/integumentary – itching / impairment / rashes / discharge / Decubitus Ulcers	10	5.59
Urinary – tract infection	10	5.59
Eye - condition/infection	9	5.03
Diabetes - BSL's	7	3.91
Medications - review of profile	7	3.91
Other	6	3.35
Nutrition - anorexia /malnutrition/dehydration	5	2.79
Urinary - Genitourinary/incontinence/renal impairment	5	2.79
Cardiac related issue / insufficiency	3	1.68
Hearing - diminished /excessive wax	3	1.68
Falls	2	1.12
Mobility - loss of	2	1.12
Nausea and vomiting	2	1.12
Palliative symptom management	2	1.12
Sleep - insomnia/lethargy	2	1.12
Burn	1	0.56
Health assessment - complex	1	0.56
Neurological dysfunction	1	0.56
Nosocomial infection	1	0.56
Prevention	1	0.56
Referral	1	0.56
<b>Total</b>	<b>179</b>	<b>100%</b>

The presenting problems that were referred to the ACNP to act on are outlined in above Table 4 d and Figures 1 and 2. When conducting the resident assessment tasks as noted above, the second most frequent activity conducted by the ACNP involved assessing and intervening in chest related issues such as upper respiratory



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and lower respiratory tract infections (11.2% of total ACNP time). The administration of fluvax and pneumovax preventative vaccinations as initiated by the ACNP were also chest related activities and which took up most of the ACNP's time (18.4% of total ACNP time).

The next major issues addressed by the NP related to bowel management (8.9%), pain management (8.4%), behaviour / confusion management (7.8%), urinary tract infections (5.6%), skin integrity concerns (5.6%) and the management of eye conditions and infections (5%) in descending order of intervention. Management of Diabetes (3.9%) and reviewing medication regimens (3.9%) constituted less time. These and the other listed issues in the Table became the focus of the CPGs developed during this project and subsequent to it.

### **5.3 COMPONENT 2 – QUALITY OF SERVICE**

A clinical records audit of the types of details present in resident's written records was undertaken to determine if the concentration of staff and the ACNP on care matters changed. Only nine residents subjected to a clinical records audit pre the ACNP interventions (October 2002) were alive for the post ACNP interventions audit (August 2003). This data pre and post the project was subject to statistical analysis. The results of the clinical records audit showed a significant increase from a pre-intervention total score of 157.9 to 196.0 after the intervention ( $P=0.007$ , Wilcoxon signed rank test) for the same residents. As shown in Table 5, the overall increase was reflected in a significant increase in six of the seven categories measured.

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**Table 5 - Results from the clinical records audit using Phaneuf's clinical documentation audit tool, adapted by Pearson et al (1987). Nine residents' records were examined before and after the intervention of extended practice, and the mean, standard errors, and maximum possible total scores for each category are presented here. Probability (P) of a significant difference between the samples (Wilcoxon signed rank) is also presented.**

Record audit category	max possible score	Pre-intervention mean	SE	Post-intervention mean	SE	P	* = statistical significance
I. Application and execution of legal medical prescriptions	42	38.0 ±	0.0	42.0 ±	0.0	0.003	*
II. Observation of symptoms and reactions	42	29.7 ±	0.3	42.0 ±	0.0	0.004	*
III. Supervision of the resident	28	23.2 ±	0.7	28.0 ±	0.0	0.006	*
IV. Supervision of those participating in care	20	11.0 ±	0.0	14.0 ±	0.0	0.003	*
V. Reporting and recording	20	9.6 ±	0.4	20.0 ±	0.0	0.004	*
VI. Application and execution of nursing procedures and techniques	32	31.8 ±	0.2	32.0 ±	0.0	0.320	NS
VII. Promotion of physical and emotional health by direction and teaching	18	14.7 ±	0.3	18.0 ±	0.0	0.004	*
Total	202	157.9 ±	1.4	196.0 ±	0.0	0.007	*

Category VI - 'Application and execution of nursing procedures and techniques' - was the only category that did not significantly increase in the documentation; however, before the ACNPs interventions, this category (at 31.8) was already virtually at the maximum score of 32.0. Post-intervention, it is apparent that all of the documentation categories except category IV 'Supervision of those participating in care', were reported at the maximum possible level. It should be noted, however, that the pre-intervention records audit was influenced by a nursing staff documentation strike where ongoing care evaluations were infrequently recorded as part of the strike activities over a two month period pre this project. Recording of individual clinical events however was not restricted through the documentation strike, only continence and behavior assessments usually conducted over 3 and 7 days respectively. The results demonstrate that staff and ACNP documentation practices significantly changed following the intense involvement of the ACNP in staff mentoring and education activities over the seven months of the project. No one

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staff education or mentoring activity can be attributed to the improvement in clinical details recorded re resident's care needs however this information in conjunction with the staff post project focus group comments suggest that staff learnt positive assessment skills from the ACNPs clinical assessment and evaluation activities.

### **5.4 COMPONENT 3 - CONSUMER EVALUATION**

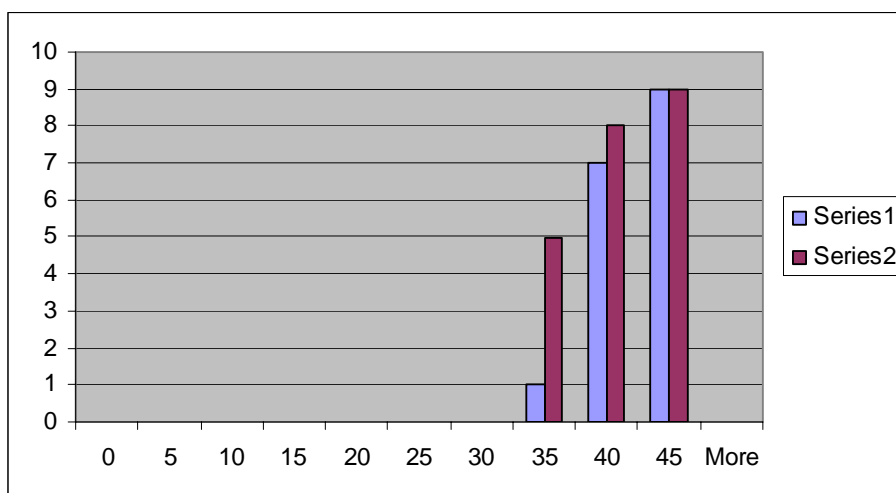
The results of the consumer evaluation are presented in two parts: a quantitative analysis of the results of General Satisfaction Questionnaires issued pre and post the implementation of the ACNP role and a qualitative analysis of the views of both residents and residents' representatives regarding the services provided during focus group meetings.

The Mann-Whitney U-test (SPSS v10) was used to test for differences pre and post the ACNP interventions for both the residents' (GSQ1a and 1b) and the representatives' questionnaires (GSQ 2), as the data were non-normally distributed (Figures 3 and 4). The Mann-Whitney U-test is often viewed as a 'nonparametric equivalent of Student's t-test' where normal distribution of data is not necessary (MacFarland, 1998) and is also appropriate given that the Likert scale data is ordinal. Significance was set at  $P < 0.05$ .

The results of the 12 question *General Satisfaction Questionnaire 1a* provided to each participating resident before the project are included in Table 6. Twenty two ACNP recipient participants (sample size (n)) answered the GSQ1a. Where possible, residents were surveyed; however, if the resident was unable to communicate effectively regarding the question 'to assist us improve and evaluate the services we

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provide, please answer the following questions about the help you have received', the results demonstrate the answer provided by a friend or family member on behalf of the resident. Table 7 shows the results of answers from 18 ACNP recipient participants (n=18) to the 11 question *General Satisfaction Questionnaire 1b* tool used post the project. Pre-project question 8 was removed as it was identified that residents were unable to answer the question "How satisfied are you with the way your medications help you manage your needs" due to their increasing dementia. Hence, all presented results do not consider answers to question 8 of the GSQ 1a. Figure 3 identifies the Histogram relevant to the results of GSQ's 1a and 1b with an interval of 5.



**Figure 3 – Distribution of GSQ's 1a and 1b, where Series 1 results represent the post intervention questionnaire GSQ1b results and Series 2 represents the pre intervention GSQ1a results.**

The Likert Scale responses were scored as: 'very dissatisfied' - 1, 'indifferent or mildly dissatisfied' - 2, 'mostly satisfied'- 3 and 'very satisfied' – 4. A score of 44 per GSQ indicated the highest level of satisfaction across all questions.

The average score across all questions of the pre GSQ 1a was 38.97 whilst the average total post intervention score of the GSQ 1b was 40.29. This did not

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represent a significant difference but a slight increase in overall resident satisfaction. Answers before and after the intervention fell between 3 and 4, with an answer of 'mildly dissatisfied' recorded on two occasions both pre and post the interventions. 'Very dissatisfied' was not recorded against any questions (Tables 6 and 7, Figure 3).

In general there was no significant change between GSQ 1a and GSQ 1b answers, with the exception of question 11 (equivalent to question 10 in the post survey) which showed significant post ACNP involvement improvement ( $P=0.006$ , Mann-Whitney U-test). Question 11 (10) asked residents: 'Are you satisfied that staff (pre-questionnaire) / the nurse practitioner (post questionnaire) who helped you, listened to and understood your needs?'. It is pertinent to note that before the ACNPs involvement and extended practice implementation, this question was rated lowest by residents, and following the implementation it was one of the most highly rated.

The results of the *General Satisfaction Questionnaire 2* tool issued to each participating friend or relative before the project are included in Table 8. Fourteen statements relating to their satisfaction are presented with four potential answers ranging from 'disagree completely' to 'disagree somewhat' to 'agree somewhat' and 'agree completely', with scores attributed to each answer as per GSQ's 1a and 1b.

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**Table 6 - Results from GSQ1a 12 question satisfaction survey of residents (or their representatives, as required) in the Greensborough Private Nursing Home, conducted PRE the nurse practitioner project. There were a total of 22 participants. The two most common answers are highlighted in bold. NB: the difference in satisfaction ordering represents the respondents experience.**

QUESTION	RATING / RESULT (NR = no result /not answered)									
	N/R		Very Dissatisfied		Indifferent or mildly dissatisfied		Mostly satisfied		Satisfied	
	n	%	n	%	n	%	n	%	n	%
1. In an overall, general sense, how satisfied are you with the service you have received?	0	<b>0</b>	0	0	0	0	6	<b>27</b>	16	<b>73</b>
	N/R		Excellent		Good		Fair		Poor	
2. How would you rate the quality of the service you have received?	0	<b>0</b>	9	<b>41</b>	13	<b>59</b>	0	0	0	<b>0</b>
	N/R		Could not be better		Satisfied		Dissatisfied		Could not be worse	
3. How do you feel about the way staff received you when you first met them?	0	<b>0</b>	10	<b>45</b>	12	<b>55</b>	0	0	0	<b>0</b>
	N/R		Very Dissatisfied		Indifferent or mildly dissatisfied		Mostly satisfied		Satisfied	
4. How do you feel about the way staff speak to you?	0	<b>0</b>	0	0	0	0	4	<b>18</b>	18	<b>82</b>
	N/R		No definitely not		No not really		Yes generally		Yes definitely	
5. Do you get the kind of service you want?	0	<b>0</b>	0	0	0	0	12	<b>55</b>	10	<b>45</b>
	N/R		Very satisfied		Satisfied		Dissatisfied		Very Dissatisfied	
6. How do you feel about the effectiveness of your care in keeping you as healthy as possible?	0	<b>0</b>	13	<b>59</b>	8	<b>36</b>	1	5	0	<b>0</b>
	N/R		Very satisfied		Satisfied		Dissatisfied		Very Dissatisfied	
7. How do you feel about the effectiveness of your care in helping you with any other problems?	0	<b>0</b>	9	<b>41</b>	13	<b>59</b>	0	0	0	<b>0</b>
	N/R		Quite Dissatisfied		Indifferent or mildly dissatisfied		Mostly satisfied		Very satisfied	
8. How satisfied are you with the way your medications help you manage your needs?	0	<b>0</b>	1	5	0	0	10	<b>45</b>	11	<b>50</b>
	N/R		No definitely not		No not really		Yes generally		Yes definitely	
9. If a friend needed to live in a nursing home would you recommend this home to him/ her?	1	5	0	0	0	0	8	<b>36</b>	13	<b>59</b>
	N/R		Dissatisfied		Mostly dissatisfied		Mostly satisfied		Satisfied	
10. How satisfied are you that staff who help you are competent and knowledgeable?	0	<b>0</b>	0	0	0	0	7	<b>32</b>	15	<b>68</b>
	N/R		No definitely not		No, I don't think so		Yes I think so		Yes definitely	
11. Are you satisfied that staff listen to and understood your needs?	1	5	0	0	1	5	11	<b>50</b>	9	<b>40</b>
	N/R		Quite Dissatisfied		Indifferent or mildly dissatisfied		Mostly satisfied		Very satisfied	
12. How satisfied are you with the amount of help you receive?	0	<b>0</b>	0	0	0	0	11	<b>50</b>	11	<b>50</b>

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**Table 7 - Results from GSQ1b 11 question satisfaction survey of residents, conducted *POST* the extended practice of the nurse practitioner. There were a total of 18 participants. The two most common answers are highlighted. NB: the difference in satisfaction ordering represents the respondents experience.**

QUESTION	RATING / RESULT									
	NR = no result / not answered									
	N/R		Very dissatisfied		Indifferent, or mildly dissatisfied		Mostly satisfied		Satisfied	
	n	%	n	%	n	%	n	%	n	%
1. In an overall, general sense, how satisfied are you with the service you have received	1	6	0	0	0	0	2	<b>11</b>	15	<b>83</b>
	N/R		Excellent		Good		Fair		Poor	
2. How would you rate the quality of service you have received	1	6	6	<b>33</b>	11	<b>61</b>	0	0	0	0
	N/R		Could not be better		Satisfied		Dissatisfied		Could not be worse	
3. How do you feel about the way staff receive you when you first met them	1	6	10	<b>56</b>	6	<b>33</b>	1	6	0	0
	N/R		Very dissatisfied		Indifferent, or mildly dissatisfied		Mostly satisfied		Satisfied	
4. How do you feel about the way staff speak to you	0	0	0	0	1	6	3	<b>17</b>	14	<b>78</b>
	N/R		No definitely not		No not really		Yes generally		Yes definitely	
5. Do you get the kind of service you want	1	6	0	0	0	0	10	<b>56</b>	7	<b>39</b>
	N/R		Very satisfied		Satisfied		Dissatisfied		Very dissatisfied	
6. How do you feel about the effectiveness of the care in relieving your symptoms	2	11	8	<b>44</b>	8	<b>44</b>	0	0	0	0
	N/R		Very satisfied		Satisfied		Dissatisfied		Very dissatisfied	
7. How do you feel about the effectiveness of the care in helping with your other problems	1	6	7	<b>39</b>	10	<b>56</b>	0	0	0	0
	N/R		No definitely not		No not really		Yes generally		Yes definitely	
8 (9equiv). If a friend needed similar help, would you recommend the home to him or her	0	0	0	0	0	0	4	<b>22</b>	14	<b>78</b>
	N/R		Dissatisfied		Mostly dissatisfied		Mostly satisfied		Satisfied	
9 (10equiv). How satisfied are you that the Nurse Practitioner who helped you was competent and knowledgeable	2	<b>11</b>	0	0	0	0	1	6	15	<b>83</b>
	N/R		No definitely not		No, I don't think so		Yes, I think so		Yes definitely	
10 (11equiv). Are you satisfied that the Nurse Practitioner who helped you listened to and understood your problem	2	11	0	0	0	0	2	<b>11</b>	14	<b>78</b>
	N/R		Quite dissatisfied		Indifferent, or mildly dissatisfied		Mostly satisfied		Very satisfied	
11 (12equiv). How satisfied are you with the amount of help you have received	0	0	0	0	0	0	4	<b>22</b>	14	<b>78</b>

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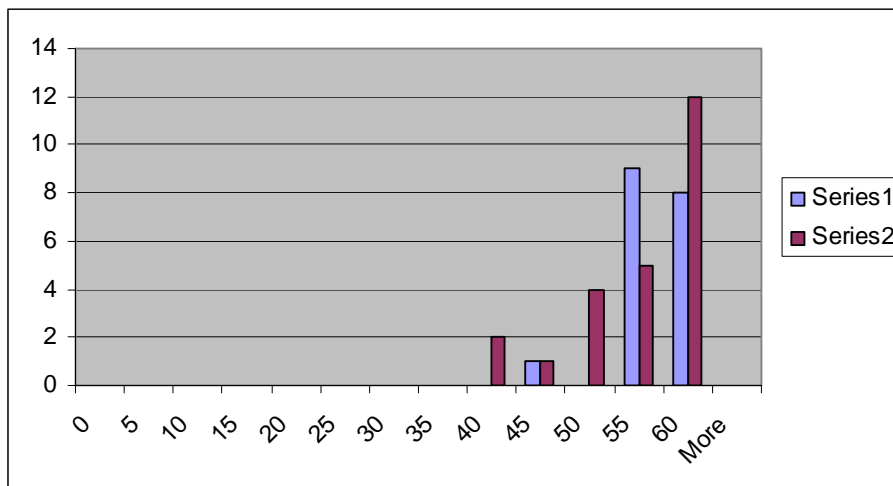
**Table 8 - Results from the general satisfaction survey of residents' representatives (friends or relatives) conducted *PRE* the nurse practitioner project. There were a total of 24 participants. The two most common answers are highlighted.**

Score – rating	N/A (N/A= no result /not answered)		Agree completely		Agree somewhat		Disagree somewhat		Disagree completely	
	5	%	4	%	3	%	2	%	1	%
1. The home is attentive to resident needs	0	0	18	<b>75</b>	6	<b>25</b>	0	0	0	0
2. The home responds rapidly and appropriately to new or exacerbated symptoms or resident requests	1	4	16	<b>67</b>	7	<b>29</b>	0	0	0	0
3. If am satisfied with the level of service being received for the resident	0	0	19	<b>79</b>	5	<b>21</b>	0	0	0	0
4. The service is attentive to my needs	2	8	15	<b>63</b>	7	<b>29</b>	0	0	0	0
5. The service is working well with the GP	1	4	17	<b>71</b>	6	<b>25</b>	0	0	0	0
6. The resident's condition is more or less stable	2	8	17	<b>71</b>	5	<b>21</b>	0	0	0	0
7. The home appears to work well with other health services / professionals	2	8	15	<b>63</b>	7	<b>29</b>	0	0	0	0
8. We are provided with appropriate information regarding the resident's condition	1	4	21	<b>88</b>	1	<b>4</b>	1	4	0	0
9. Pain and other medical conditions or symptoms are being adequately controlled	3	13	17	<b>71</b>	3	<b>13</b>	1	4	0	0
10. Other health care needs are managed well with the help provided	2	8	17	<b>71</b>	4	<b>17</b>	0	0	1	<b>4</b>
11. The home and I agree about the best place to care for the resident when health needs increase	1	4	19	<b>79</b>	4	<b>17</b>	0	0	0	0
12. I have had disagreements about admitting the resident to hospital	14	<b>58</b>	0	0	1	4	1	4	8	<b>33</b>
13. I feel there is good communication between the service and other health providers involved in the resident's care	3	13	16	<b>67</b>	5	<b>21</b>	0	0	0	0
14. I feel the home has made good decisions about what tests to conduct or what treatments to provide	1	4	19	<b>79</b>	4	<b>17</b>	0	0	0	0

Figure 4 represents the Histogram relevant to the GSQ 2 results pre and post the project with an interval of 5.



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**Figure 4 – Distribution of GSQ's 2a and 2b, where Series 1 results represent the post intervention questionnaire GSQ2b results and Series 2 represents the pre intervention GSQ2a results.**

Table 9 shows the results of the *GSQ 2* supplied to each participating friend or relative post the project. Responses were unable to be paired 'before' and 'after' intervention as completion of the questionnaires was voluntary and anonymous to encourage frankness when answering. Not all pre-project participants were available to complete the post project GSQ as their friend or relative had deceased during that period. The sample sizes (n) between the two groups differed with 24 answering the pre-project survey and 18 post the project.

The results of the relatives' and friend's questionnaires also indicated a high level of satisfaction with the level of care provided by the aged care facility (nursing home). Again, all of the average scores were between 3 and 4, which corresponded to between 'mostly satisfied' and 'highly satisfied'. There were no statistically significant changes in any of the questions examined following the implementation of extended practice. It is notable, however, that 100% of the 18 respondents were highly satisfied that pain and other medical conditions or symptoms were being adequately controlled when questioned following the advent of the nurse practitioner (Table 9,

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question 9) compared with a 71% highly satisfied response pre the project

( $P=0.054$ ), a near significant difference.

**Table 9 - Results from the general satisfaction survey of residents' representatives (friends or relatives) conducted *POST* the nurse practitioner project. There were a total of 18 participants. The two most common answers are highlighted.**

Score – rating	N/A (N/A= no result /not answered)		Agree completely		Agree somewhat		Disagree somewhat		Disagree completely	
	n	%	n	%	n	%	n	%	n	%
1. The home is attentive to resident needs	0	0	16	<b>89</b>	2	<b>11</b>	0	0	0	<b>0</b>
2. The home responds rapidly and appropriately to new or exacerbated symptoms or resident requests	0	0	14	<b>78</b>	4	<b>22</b>	0	0	0	<b>0</b>
3. If am satisfied with the level of service being received for the resident	0	0	15	<b>83</b>	3	<b>17</b>	0	0	0	<b>0</b>
4. The service is attentive to my needs	1	6	14	<b>78</b>	3	<b>17</b>	0	0	0	<b>0</b>
5. The service is working well with the GP	0	0	15	<b>83</b>	3	<b>17</b>	0	0	0	<b>0</b>
6. The resident's condition is more or less stable	1	6	15	<b>83</b>	2	<b>11</b>	0	0	0	<b>0</b>
7. The home appears to work well with other health services / professionals	3	17	12	<b>67</b>	3	<b>17</b>	0	0	0	<b>0</b>
8. We are provided with appropriate information regarding the resident's condition	1	6	12	<b>67</b>	5	<b>28</b>	0	0	0	<b>0</b>
9. Pain and other medical conditions or symptoms are being adequately controlled	0	0	18	<b>100</b>	0	<b>0</b>	0	0	0	<b>0</b>
10. Other health care needs are managed well with the help provided	1	6	16	<b>89</b>	1	<b>6</b>	0	0	0	<b>0</b>
11. The home and I agree about the best place to care for the resident when health needs increase	2	11	14	<b>78</b>	2	<b>11</b>	0	0	0	<b>0</b>
12. I have had disagreements about admitting the resident to hospital	9	<b>50</b>	0	0	0	0	0	0	9	<b>50</b>
13. I feel there is good communication between the service and other health providers involved in the resident's care	0	0	16	<b>89</b>	2	<b>11</b>	0	0	0	<b>0</b>
14. I feel the home has made good decisions about what tests to conduct or what treatments to provide	2	11	14	<b>78</b>	2	<b>11</b>	0	0	0	<b>0</b>

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All relative and friend respondents post the project agreed with the positive outcome statements in the questionnaire but respondents indicated 'somewhat' disagreement with three questions and disagreed completely with one question in the pre-project questionnaire, question 10 which stated "[o]ther health care needs are managed well with the help provided" (Table 8). Question 12 in both the pre and post survey completed by relatives or friends, as outlined in Tables 8 and 9, which stated 'I have had disagreements about admitting the resident to the hospital', had a low response rate with half of the respondents stating that the question was not applicable. Table 10 shows the results of the Mann-Whitney U-test where Sample size (n), mean and standard errors are presented. Probability (P) of a significant difference between the samples (Mann-Whitney U-test) is also presented for the resident GSQ's before ('pre-NP') and after ('post-NP') the ACNP's involvement.

**Table 10 - An 11 question survey investigating *RESIDENTS'* general satisfaction before ('pre-NP') and after ('post-NP') the nurse practitioner. A 4 point Likert scale was used: 1 'very dissatisfied', 2 'indifferent or mildly dissatisfied', 3 'mostly satisfied' and 4 'very satisfied'. Sample size (n), mean and standard errors are presented. Probability (P) of a significant difference between the samples (Mann-Whitney U-test) is also presented. See Appendices 24 and 25 for the full questionnaire.**

Question	Pre-NP			Post-NP			P	Significance
	n	mean ±	SE	n	mean ±	SE		
1	22	3.73 ±	0.10	17	3.88 ±	0.08	0.24	NS
2	22	3.41 ±	0.11	17	3.35 ±	0.12	0.724	NS
3	22	3.45 ±	0.11	17	3.53 ±	0.15	0.539	NS
4	22	3.82 ±	0.08	18	3.72 ±	0.14	0.696	NS
5	22	3.45 ±	0.11	17	3.41 ±	0.12	0.792	NS
6	22	3.55 ±	0.13	16	3.50 ±	0.13	0.683	NS
7	22	3.41 ±	0.11	17	3.41 ±	0.12	0.987	NS
9	21	3.62 ±	0.11	18	3.78 ±	0.10	0.291	NS
10	22	3.68 ±	0.10	16	3.94 ±	0.06	0.60	NS
11	21	3.38 ±	0.13	16	3.88 ±	0.09	0.006	*
12	22	3.50 ±	0.11	18	3.78 ±	0.10	0.075	NS

Question 8 results have been removed

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Table 11 shows the results of the Mann-Whitney U-test where Sample size (n), mean and standard errors are presented for the 14 question relatives and friends GSQ 2 before ('pre-NP') and after ('post-NP') the ACNPs involvement. Probability (P) of a significant difference between the samples (Mann-Whitney U-test) is also presented.

**Table 11 - A 14 question survey investigating *RELATIVE and FRIENDS'* general satisfaction before ('pre-NP') and after ('post-NP') the nurse practitioner. A 4 point Likert scale was used: 1 'disagree completely, 2 'disagree somewhat, 3 'agree somewhat' and 4 'agree completely'. Sample size (n), mean and standard errors are presented. Probability (P) of a significant difference between the samples (Mann-Whitney U-test) is also presented. See appendices 24 and 25 for the full questionnaire.**

question	Pre-NP			Post-NP			P	significance
	n	mean ±	SE	n	mean ±	SE		
1	23	3.78 ±	0.09	18	3.89 ±	0.08	0.262	NS
2	22	3.73 ±	0.10	18	3.78 ±	0.10	0.561	NS
3	23	3.83 ±	0.08	18	3.83 ±	0.09	0.737	NS
4	21	3.71 ±	0.10	17	3.82 ±	0.10	0.321	NS
5	22	3.77 ±	0.09	18	3.83 ±	0.09	0.475	NS
6	21	3.81 ±	0.09	17	3.88 ±	0.08	0.383	NS
7	21	3.71 ±	0.10	15	3.80 ±	0.11	0.433	NS
8	23	3.87 ±	0.10	17	3.71 ±	0.11	0.115	NS
9	21	3.76 ±	0.12	18	4.00 ±	0.00	0.054	NS
10	21	3.81 ±	0.09	17	3.94 ±	0.06	0.148	NS
11	22	3.86 ±	0.07	16	3.88 ±	0.09	0.681	NS
12	10	3.70 ±	0.21	9	4.00 ±	0.00	0.168	NS
13	21	3.76 ±	0.10	18	3.89 ±	0.08	0.309	NS
14	22	3.86 ±	0.07	16	3.88 ±	0.09	0.681	NS

### **5.5 COMPONENT 4 - KEY STAKEHOLDER EVALUATION POST-IMPLEMENTATION**

Following the implementation, the views of key stakeholders were elicited via focus group research. Only three of the four GPs participating in the project were able to attend the post implementation focus group. In summary, the views of GPs were positive regarding the role of the ACNP. This is in contrast to two of the reasons

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given by the GPs who did not wish to be involved ie. a lack of respect for the role of a NP and unwillingness to spend time to liaise with a NP.

General practitioners reported higher satisfaction with the services provided to their patients, citing improved health outcomes and appropriate preventative strategies being adopted. Statements from the GPs' post-implementation focus group indicated that the GPs considered the ACNP provided a high level of quality care in collaboration (referral, case conferences, care planning) with themselves and other allied health professionals. In particular, they stated the ACNP wielded most influence on outcomes for residents concerning:

- resident comfort and pain control
- bowel management
- infection management through rapid referral of samples to pathology
- terminal care consensus
- other issues requiring family liaison

The participating GPs commented on the value of the ACNP's role in conducting comprehensive health assessments upon which they could rely. This was assisted by the fact that they had contributed to the ACNP's health assessment education. The need for the services of an ACNP who was available for as many shifts as possible was identified by the GPs as being a significant driver of expeditious intervention. They identified a number of extensions to practice that they felt supported them in their role of providing quality medical intervention. These included, amongst others, the immediate ordering of relevant diagnostics to facilitate the quicker diagnosis and treatment of issues. They also stated that the ability to prescribe analgesia in a more timely manner when the resident experienced increased or different pain prevented

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further physical and mental decline from the experience of chronic and acute pain.

When the general practitioners were asked, '[i]n an ideal world, what responsibilities and powers do you think nurses could have to improve the care and the timeliness of the care provided to residents', answers included:

- "By initiating some treatments prior to a doctor attending to improve the timeliness of services, so their crises could be addressed more expediently, which also may prevent hospital admission, a person being taken out of their environment and any other issues that arise from a crisis."
- "Suturing may be an area which they could be empowered to undertake, having staff intervene at the home means you're not disturbing them and taking them out of their environment, and providing timely intervention without the associated dramas."

GP answers to the question '[w]hat are your thoughts on the suitability of having a nurse practitioner work in a nursing home' included:

- "Yes, I think there certainly is a place for a NP in aged care, for the following reasons, timely intervention, quicker recovery because of that intervention."
- "If you have a nurse with extended practice, they can implement the intervention prior and in consultation with a medical practitioner which makes a quicker recovery for the resident."
- "The NP's extended practices would be more valuable because they would be able to initiate diagnostic tests, X-rays and order medication prior to a medical examination by an MP."

When asked '[w]hat Nurse Practitioner services were residents able to access', they stated:

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- “By having Richard present 5 days a week who could undertake a more thorough and holistic assessment, he was able to use his more extensive assessment skill hence was able to act quicker and initiate treatments quicker for example.”

The GPs praised the skill of the ACNP stating the following regarding the ACNP's assessment skill when asked, '[d]id the Nurse Practitioner see residents or contact residents when you felt he needed to':

- “Staff referred (residents) to Richard for more detailed assessment needs, he learnt to listen to chest sounds and could pick up URTI's etc. quicker than others”

In relation to the service of an ACNP, the following questions were asked which elicited the following responses:

- ‘In what areas do you think the nurse practitioner could have improved in, to make the services more relevant to what client's needed’ ; “It's as relevant as you can get, people are already conducting assessments etc.”
- ‘What limits to accessing the nurse practitioner did you experience?’; “Limits are related to after hours, he wasn't on call 24 hrs a day.”
- ‘How could access to the nurse practitioner be improved’; “Via a paging or on-call system as well as being present on a full time basis”

A more general discussion was then held regarding collaborative practice issues, participation, roles/boundaries, referrals and the experiences of the GPs with the following answers:

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- “Collaborative practice must be present, there must be cooperation with the MP’s to initiate everything until the NP is endorsed as they can’t yet.”
- “Once the NP can initiate, that will improve the service significantly, once they [obtain the] right to extend their practice they will be able to do this more independently.”

In order to establish whether the ACNP contacted other practitioners as often as the GPs thought was necessary and on what occasions did this occur appropriately and under what circumstances the ACNP did not meet their expectations, the GPs stated, “I don’t think the NP fell down at all, he did well given the limitations and restraints present in the project as he couldn’t do the normal practices a nurse practitioner would be able to do.”

Regarding the ACNP referral practices and whether there were any improvements required to ensure referrals were appropriately made, one GP answered, “[n]o, they were appropriate”. When asked if the GPs considered if the protocol documentation assisted them and the ACNP in identifying clear responsibilities and actions to take, they stated “yes” and when asked what improvements they would suggest to make to these protocols, they stated “none at present”.

Their thoughts regarding the areas on which more work could be undertaken to improve understanding of the roles and boundaries elicited the following:

- “More education of other staff of what the role of the NP is, there’s not a clear understanding there with some staff.”
- “They don’t quite see the clear distinction between the extended practices as the RNs already do much of the type of work Richard did, it’s the extended



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practices which makes the difference and as Richard couldn't do all those, there was very little difference."

The GPs thoughts regarding the scope for improving and broadening the current practice of the ACNP and the further education they felt was essential to making the ACNP as effective as possible in improving resident-client outcomes, obtained the following answers:

- "Pharmacology, knowledge of the drugs they are going to be prescribing is essential."
- "Education re advanced assessment skills and relevant diagnostic tests, they need to be updated on the latest, having a broad knowledge / updating their knowledge on gerontology is essential as well as the Masters being required as a qualification, there should be at least a Grad Dip in Gerontology as part of their education."
- "Other NP's from other areas wouldn't be able to function in an aged care environment without that specialist gerontology knowledge."

The GPs were then asked for details regarding the outcomes and impact on other services the role engendered and what experience in terms of the nurse practitioner's involvement in client- practitioner relationships they had, with the following answer supplied :

- "At this stage it's very hard to assess, you need a more detailed review of the impact, we are looking at lesser use of hospital admissions, use of ambulance services, so it could have a monetary impact but it could also increase some areas as a new practitioner may be more likely to use diagnostic services."

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The future of the role was then discussed with the GPs identifying where they saw the role of the ACNP in the future and what they thought could improve this or hamper this process :

- "I see it as a necessary part of the future whether to be working in a clinical setting or in a consultative role, it could be developed into a consultative role where it is shared across a number of facilities like a physio, dietician etc."
- "You could have the NP come in, but there is a big role in the clinical role because if they're on site, they can manage issues quicker."

The sustainability and cost-effectiveness of the model of practice was questioned with the GPs being asked what impact this role had upon their budget, where they thought financial savings were made and what did they consider was required to make the ACNP position a viable or appropriately paid position. They stated that "it needs to be funded somehow and the only way this was to happen would be through the Federal government, they need to make some [money] available for it, for the level you have to pay". Hence the financial impact on them personally was not answered specifically however, they could see a need for the role and for the government to make it a financially viable proposition.

Overall the participating GPs were positive regarding the position and its potential, stating they considered ACNPs required extensions to their practice to be of most benefit. They were considered in their answers, identifying collaboration as a key element in achieving positive resident outcomes and saw the improved timeliness of interventions whether they were diagnostic or medication related as a support. They had supported the ACNP through education activities through the project and their comfort with the candidate's knowledge appears in the answers they provided,

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contributing to their satisfaction. They were clear regarding their thoughts that the ACNP position required a specialist gerontological nurse, citing a lack of experience would not achieve the same outcomes.

Another focus group of nursing home staff sought their views on the implementation of the ACNP role over the previous 7 months and their perspectives on the effects on resident care outcomes. Only two staff were able to attend the post project meeting. When other staff were asked what method should be used to ensure complete collection of information, staff stated they preferred to answer questions via a questionnaire. One was developed asking the same questions used at the original meeting. The main views elicited from staff from both the meeting and the questionnaire are presented below (n=7).

A summary of staff comments documented on the questionnaires concerning the role of the ACNP are as follows:

- “RNs Div 1 are more aware of the residents’ needs as they deal with them holistically every day. They are more in tune with changes occurring and this would enable prompt response with a far better outcome. It also provides a positive challenge to the nursing profession.”
- “It is good because certain residents who may need treatment are able to get it sooner than waiting for a doctor to come in and assess them.”
- “It keeps the residents up to date with their health if their doctor can’t attend to the resident at the time of their illness.”
- “I think it’s a role that should be available in aged care as RN Div 1’s provide that level of support and care already. Doctors rely on the nurses in nursing homes to have good decision making capacity and clinical knowledge as they

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can't be present as often as they or we would like. The nurses are running the show anyway as this is a nursing home, not a medical hospital run by doctors."

Staff appreciated the role's use of an RN's specific skills in a professionally recognised manner that brought about positive resident outcomes through the provision of timely services. They considered RNs in aged care already worked to this level of practice and that such a role was vital to challenge others to work in aged care.

When asked what responsibilities and powers they thought ACNPs could have to improve the care and the timeliness of the care provided to residents, their answers included:

- "Provide analgesia, order diagnostic tests including blood tests and antibiotics."
- "To order medications."
- "They need to be able to order some medications and send path slips to prevent delays and support residents' needs."

When asked what activities the nurse practitioner did which seemed relevant and helpful to residents, answers included:

- "Ordering diagnostic tests, increasing strength of analgesia."
- "He attended to a resident who seemed to have gone down hill. He kept an eye on the residents BP, Pulse, etc."
- "He was able to pick up on medical needs straight away without having to wait for the GP to attend."

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Staff stated that the impact they thought a nurse practitioner in a nursing home would have on other services included:

- "If not limited, they could initiate access and improve quality of life for residents."
- "I think it would be a huge impact."
- "It will improve the ability of resident's to access other services in a timely manner "

These answers concurred with staff's previous assertions that the timeliness of interventions improved care. Answers about the interventions the nurse practitioner actually conducted to achieve these outcomes included, "he assessed residents more thoroughly and provided quick action to some of the issues residents presented with, I thought the care was then better as issues were able to be acted upon immediately."

Staff members were also asked what they experienced in terms of the nurse practitioner relationship:

- "The nurse practitioner listens to all staff regarding the resident's care."
- "I was able to discuss issues easily with him."

This reinforces the previously identified need for NPs to educate staff and to involve them in case management and respect their views.

Staff views on the education needs of those wishing to be a nurse practitioner included:

- "They must work in an environment that they are to practice in."
- "They have to know their specialty well and shouldn't be allowed to do a course if they haven't years of experience in that field."

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- “Make the courses easy to access by working staff and ensure they recognise experience and current knowledge in their consideration of who can enroll at which level.”

This demonstrates staff’s wish to be involved in such a role but the need for education institutions to make education accessible to nurses working in the specialty area. This also elicited a pride regarding the expertise of the aged care nurse and the expectation that there should be recognition of the experience of nurses practicing in aged care.

This was further reinforced by their responses when asked for their views on the future of the aged care nurse practitioner role :

- “I see this being an integral part of ACF in the future. It is often difficult to contact LMOs and Locums often hesitate in their decisions at times. Nurse Practitioners will be able to be a good first option for prescribing care.”
- “In all nursing homes & hostels, home care.”
- “The role should be made available to aged care but unless the courses are made readily available, it will make it hard for nurses to obtain the necessary qualifications, and then the role will have no future.”

Staff comments were positive and supported the implementation of the ACNP role into the future. As mentioned previously, the focus group transcripts’ generally positive comments about the ACNP role and staff’s improved documentation skill identified on the post intervention records audit demonstrates a possible positive staff outcome related to the skill demonstrated by the ACNP.

## 5.6 COMPONENT 5 - EVALUATIVE STUDY OF HEALTH OUTCOMES – PRE- AND POST-IMPLEMENTATION

The results of the three tools used to assess the health status of a randomly selected group of residents both before and after the implementation of the nurse practitioner model are presented below. All statistical analysis was conducted using SPSS v10.

The results from the tools will be considered separately.

### **Barthel's Index**

Initially, Barthel's Index was measured on 50 residents before the implementation of extended practice. However, 15 of these residents died during this project (between September 2002 and November 2003). The residents who were still alive to be re-sampled after the implementation (a total of 35 residents) did not differ significantly from the residents who were deceased at the time of the re-sample in terms of their initial Barthel's Index or their ages when compared by Mann Whitney U-test (Table 12). The gender ratio was similar between the two groups (Chi-square = 0.271, P = 1.0) with an overall ratio approaching one male per 4 females.

**Table 12 Examination of the initial group of 50 residents whose Barthel's Index was measured in mid-2002. Of this initial group, only 35 were alive and could be re-sampled some 14 months later. There was no difference between the group that survived and the group that died in terms of the initial Barthel's Index (P=0.08) and age (P=0.64). The gender ratio was similar between the two groups. \*Means and standard errors are presented.**

<b>Group Variable</b>	<b>Survived to be re-sampled</b>	<b>Deceased at time of re-sample</b>	<b>P</b>	<b>significance</b>
N	35	15		
Initial Barthel's Index*	36.1±5.3	29.0±4.6	0.079	NS
Age*	84.1±1.4	83.4±3.5	0.641	NS
M:F ratio	7:28	4:11	1.0	NS

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The finding that mortality was the only difference between the two groups is important, because it indicates that the cohort that was re-sampled is very likely to be representative of the nursing home population as a whole.

The results of measurements of Barthel's Index in the randomly selected control group of residents and the group exposed to the nurse practitioner are presented in Tables 13 and 14 respectively. The control group was first measured in October-November 2002 and then re-measured one year later. The Barthel's Index decreased significantly (Wilcoxon signed rank test,  $P < 0.001$ ) over this time, from an average of 44.9 in 2002 to 25.8 in 2003, representing a decline of approximately 1.5 points per month. When the Barthel's Index is broken down into its constituent parts, 'self care' and 'mobility', these show a similar significant decrease over time (Wilcoxon signed rank test,  $P < 0.001$ ), decreasing by 44.6% and 40.3% respectively.

**Table 13 Paired measurements of Barthel's Index (as a total, and its constituent parts – self care and mobility indices) measured in a 'control' group of residents in late 2002, and repeated in late 2003. Sample size (n), mean and standard errors are presented. Probability (P) of a significant difference between the samples (Wilcoxon signed rank) is also presented; significant probabilities are in bold. Note, a decrease in the Barthel's Index represents a decrease in ability.**

		Oct-Nov 2002		Oct-Nov 2003		P	significance
		mean ±	SE	mean ±	SE		
Barthel's	Index	18	44.9 ± 7.2	25.8 ± 6.0		<b>&lt; 0.001</b>	*
total							
Barthel's	(self care)	18	21.3 ± 3.1	11.8 ± 3.0		<b>&lt; 0.001</b>	*
Barthel's	(mobility)	18	23.6 ± 4.5	14.1 ± 3.8		<b>&lt; 0.001</b>	*

In the group of residents exposed to the nurse practitioner, the average total Barthel's Index decreased from 36.1 to 29.0 over the duration of the project (Table 14). This was a significant decrease ( $P = 0.018$ , Wilcoxon signed rank test), that equated to a decrease of about 0.5 points per month over one year. If the Barthel's Index is broken down into its constituent parts, it is apparent that mobility decreased



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to a greater degree than did self care (Table 14). Mobility decreased by 27%, a significant decrease (P=0.003); whereas self care only decreased by 12%, which was not significant (P=0.109).

The analysis of the changes in the Barthel's Index over time is complicated because in both the control and nurse practitioner groups, some residents had initial Barthel's Index scores of zero. Eight of the 35 residents in the nurse practitioner group and four of the 18 residents in the control group scored zero on their initial Barthel's Index. A zero initial score means that there can be no decline in Barthel's Index, and presumably if the initial score is very low, then there is a limit to the amount of decline that can be measured. This has the potential to bias results if the initial Barthel's Index scores differ between the control and nurse practitioner groups.

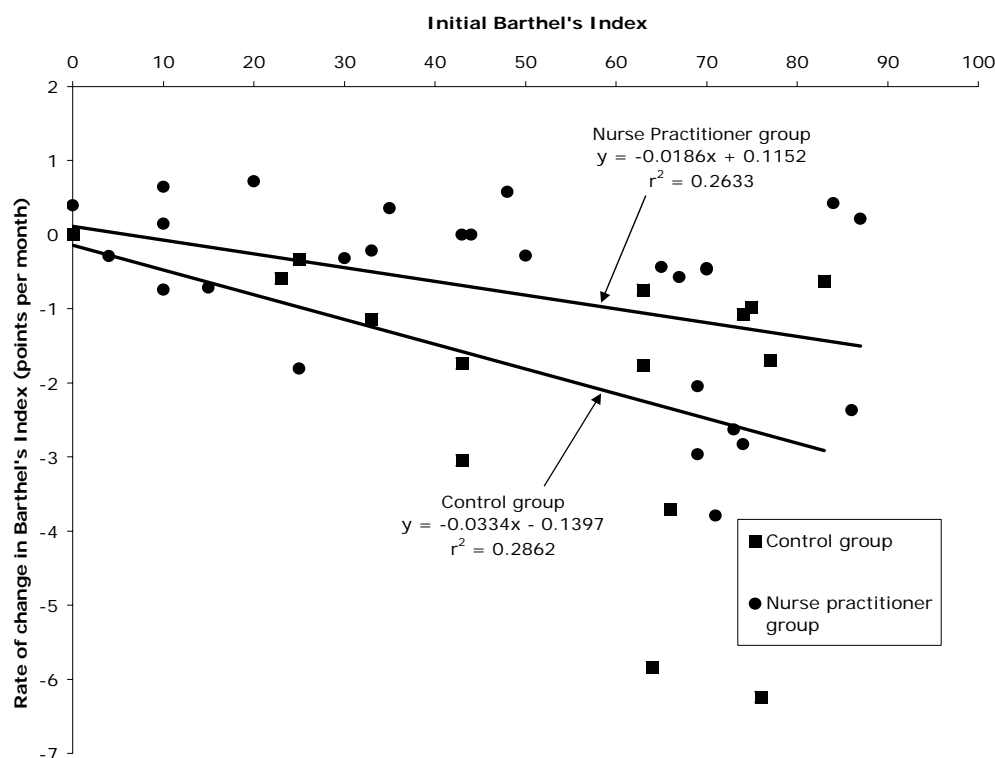
**Table 14 Paired measurements of Barthel's Index (as a total, and its constituent parts – self care and mobility indices) before ('pre-ACNP') and after ('post-ACNP') the implementation of extended practice. Sample size (n), mean and standard errors are presented. Note, a decrease in the Barthel's Index represents a decrease in ability. Probability (P) of a significant difference between the samples (Wilcoxon signed rank) is also presented; significant probabilities are in bold.**

	N	Pre-ACNP		Post-ACNP		P	significance
		mean ±	SE	mean ±	SE		
Barthel's index total	35	36.1 ±	5.3	29.0 ±	4.6	<b>0.018</b>	*
Barthel's (self care)	35	17.7 ±	2.6	15.5 ±	2.5	0.109	NS
Barthel's (mobility)	35	18.3 ±	3.1	13.4 ±	2.7	<b>0.003</b>	*

To investigate this potential bias, the initial Barthel's Index and the change in the Barthel's Index over time (in this case, per month) were plotted against each other (Figure 5). Regression analysis showed that for both control and nurse practitioner groups there was a significant relationship between the initial Barthel's Index and the rate of change in the Barthel's Index over time (regression analysis, control group:

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$n=18$ ,  $r^2=0.263$ ,  $F=11.79$ ,  $P=0.002$ ; nurse practitioner group:  $n=35$ ,  $r^2=0.286$ ,  $F=6.41$ ,  $P=0.022$ ). Figure 5 shows that as the initial Barthel's Index is low, the change in the Barthel's Index over time is also low. The appropriate analysis to compare differences between the two groups is an analysis of covariance, with the initial Barthel's Index as the covariate. Essentially, this test compares the two regression lines in Figure 5 to determine if they have the same slope (i.e. whether the covariate acts similarly on both groups). If the slopes are the same, the next step is to compare the y-intercepts, to determine if the lines share the same y-intercept. The analysis of covariance revealed that the two slopes were not different from each other (homogeneity of slopes interaction was not significant,  $F_{1,51}=1.51$ ,  $P=0.226$ ).



**Figure 5** Initial Barthel's Index and the change in the Barthel's Index over time (per month) plotted against each other.

Comparison of the y-intercepts revealed that the nurse practitioner group was significantly greater than the control group ( $F_{1,52}=5.70$ ,  $P=0.021$ ). As shown in Table 15, this means that the nurse practitioner group actually had a lesser rate of decline

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in the Barthel's Index (-0.63 points per month), compared to the control group (-1.50 points per month), suggesting that physical decline over the year that measurements took place was significantly arrested in the ACNP group.

**Table 15 - Summary table for the analysis of covariance showing the adjusted means (i.e. averages) and standard errors for the control and nurse practitioner groups.**

Group	n	Adjusted mean rate of change (points per month)	SE
Control	18	-1.50	0.30
Nurse practitioner	35	-0.63	0.21

### **Social function I**

The results from the OARS Social Function I test (Appendix 22) are summarised in Table 16. On the OARS scale, a lower score indicates a better social function and a higher score indicates poorer social function. The slight increase from a pre ACNP average of  $2.63 \pm 0.53$  to  $2.75 \pm 0.45$  post ACNP was not significant ( $p=0.665$ , Wilcoxon signed rank test). No control data was collected hence it was not possible to determine if the same rate of change was present for that period in a control group.

**Table 16 - Paired measurements of the OARS social function test before ('pre-ACNP') and after ('post-ACNP') the nurse practitioner. Sample size (n), mean and standard errors are presented. Note, the smaller the value of social functions I, the better the social function. Probability (P) of a significant difference between the samples (Wilcoxon signed rank) is also presented. Refer to Appendix 20 for the complete questionnaire.**

	n	Pre-ACNP		Post-ACNP		P	significance
		mean $\pm$	SE	mean $\pm$	SE		
Social function I – OARS	8	$2.63 \pm$	0.53	$2.75 \pm$	0.45	0.665	NS

### **Social function II**

The results from each of the 21 questions of the social dysfunction test (Appendix 23) were compared pre and post ACNP, in a control group and in a group exposed to

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the nurse practitioner (Tables 17 and 18). In both tables the '# n/a' column corresponds to the number of residents to whom the question was not applicable (i.e. those residents who had no awareness/understanding about the issue), and the '# responses' column corresponds to the number of residents to whom the question was applicable. The average score and standard errors were calculated for each question, and the differences between the two sampling periods (the second sample subtracted from the first) are presented. The scores for the two sampling periods were statistically compared using a Wilcoxon signed rank test for each question, and the probability (P) values are presented in Tables 17 and 18. Four questions were considered to be not applicable, i.e. the residents had no awareness/understanding about the issue and the majority of respondents did not answer this question. These were consistent between the two groups:

- Q7. Manipulation (exploiting of environment, controlling at other people's expense)
- Q13. Expressed need for friends, social contacts
- Q17. Expressed need for more leisure, self-enhancing and satisfying activities
- Q20. Financial security.

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**Table 17** Results from a 21 question survey measuring social function II in a control group of residents, measured in October-November 2002 and repeated in October-November 2003. A 5 point Likert scale ranged from: 1 'very mild', 2 'mild', 3 'moderate', 4 'severe' and 5 'very severe'. Sample size (n), mean and standard errors are presented. Probability (P) of a significant difference between the samples (Wilcoxon signed rank) is also presented. Significant differences (P<0.05) in bold. See Appendix 23 for a full questionnaire.

Social Function A'ment Question	Control Group Pre Project Oct-Nov 2002				Control Group Post Project Oct-Nov 2003				Difference between 2002 (pre) and 2003 (post)		
	# 'n/a'	# responses	Average score	SE	# 'n/a'	# responses	Average score	SE	# 'n/a'	Average score	P
1	1	13	4.69	0.24	1	13	4.69	0.24	0	0.00	1.000
2	0	14	4.36	0.31	0	14	4.43	0.34	0	0.07	0.655
3	0	14	4.57	0.25	0	14	4.71	0.22	0	0.14	0.317
4	8	6	2.67	0.42	8	6	3.00	0.45	0	0.33	0.157
5	0	14	3.93	0.29	0	14	4.43	0.23	0	0.50	0.102
6	5	9	2.44	0.34	5	9	2.67	0.33	0	0.22	0.317
7	12	2	1.50	0.50	12	2	1.50	0.50	0	0.00	1.000
8	7	7	2.14	0.34	7	7	2.29	0.42	0	0.14	0.317
9	0	14	2.71	0.30	1	13	3.15	0.34	-1	0.31	0.339
10	2	12	2.92	0.31	2	12	3.33	0.28	0	0.42	0.102
11	3	11	3.27	0.38	2	12	3.25	0.41	+1	0.18	0.414
12	2	12	2.92	0.42	2	12	3.08	0.40	0	0.17	0.317
13	8	6	2.17	0.31	10	4	2.25	0.25	-2	0.00	1.000
14	0	14	5.00	0.00	0	14	5.00	0.00	0	0.00	1.000
15	0	14	5.00	0.00	0	14	4.93	0.07	0	-0.07	0.317
16	1	13	4.62	0.27	1	13	4.69	0.17	0	0.08	0.564
17	11	3	1.67	0.33	11	3	1.67	0.33	0	0.00	1.000
18	0	14	3.93	0.32	0	14	4.50	0.25	0	0.57	<b>0.039</b>
19	0	14	4.57	0.25	0	14	4.71	0.19	0	0.14	0.157
20	11	3	2.67	0.33	12	2	3.00	0.00	-1	0.00	1.000
21	0	14	3.07	0.34	0	14	3.50	0.25	0	0.43	0.058

Examination of both tables reveals that social dysfunction was prominent in both groups. If the mid-point on the Likert scale of 2.5 is considered as a 'neutral' score of social dysfunction, and a higher score relates to a higher level of social dysfunction, then in the first sampling period (2002), where the average score was greater than 2.5 for 16 questions in the control group, and 19 questions in the nurse practitioner group, this suggested social dysfunction existed in most aspects of the residents' lives. Similar findings from both groups emerge one year later, with average scores exceeding 2.5 in 17 questions for the control group, and 16 questions in the nurse

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practitioner group. It is also interesting to note that average scores of 5.0 were recorded in three cases in both control and nurse practitioner groups. This indicates that all residents scored 'very severe' social dysfunction for these aspects, which were Q14 (a lack of work) and Q15 (a lack of leisure time activities) for both groups and Q2 (goallessness) in the ACNP group.

**Table 18** Results from a 21 question survey measuring social function II in the group of residents exposed to the nurse practitioner, measured before and after exposure in October-November 2002 and October-November 2003. A 5 point Likert scale ranged from: 1 'very mild', 2 'mild', 3 'moderate', 4 'severe' and 5 'very severe'. Sample size (n), mean and standard errors are presented. Probability (P) of a significant difference between the samples (Wilcoxon signed rank) is also presented. Significant differences (P<0.05) in bold. See Appendix 23 for a full questionnaire.

Social Function Question	NP residents Pre-Nurse practitioner				NP residents Post-Nurse practitioner				Difference between 2002 (pre) and 2003 (post)		
	# 'n/a'	# responses	Average score	SE	# 'n/a'	# responses	Average score	SE	# 'n/a'	Average score	P
1	0	26	4.77	0.65	0	26	4.81	0.69	0	0.04	0.655
2	1	25	4.92	0.40	0	26	5.00	0.00	+1	0.08	0.317
3	0	26	4.81	0.69	0	26	4.92	0.39	0	0.11	0.414
4	14	12	3.17	1.53	16	10	2.90	1.20	-2	-0.40	0.357
5	0	26	4.38	0.90	0	26	4.38	0.85	0	0.00	0.854
6	6	20	3.50	1.24	9	17	2.35	1.00	-3	-1.22	<b>0.001</b>
7	20	6	3.00	1.67	23	3	2.33	1.15	-3	-0.75	0.180
8	11	15	3.07	1.39	16	10	2.80	1.23	-5	0.00	1.000
9	5	21	3.71	1.27	3	23	2.74	1.10	+2	-0.91	<b>0.011</b>
10	6	20	2.95	1.05	8	18	2.28	0.89	-2	-0.79	<b>0.001</b>
11	2	24	3.58	1.50	0	26	3.35	1.47	+2	-0.08	1.000
12	0	26	3.77	1.37	0	26	4.15	0.97	0	0.37	<b>0.040</b>
13	15	11	2.36	1.21	21	5	1.80	0.84	-6	-0.50	0.083
14	0	26	4.92	0.39	0	26	5.00	0.00	0	0.07	0.317
15	0	26	4.96	0.20	0	26	5.00	0.00	0	0.04	0.317
16	0	26	4.81	0.80	0	26	4.92	0.39	0	0.11	0.593
17	24	2	2.00	1.41	22	4	2.25	1.89	+2	-0.50	
18	0	26	4.54	1.03	0	26	4.38	1.10	0	-0.15	0.629
19	0	26	4.65	0.89	0	26	4.88	0.43	0	0.22	0.194
20	16	10	3.80	1.03	18	8	3.63	1.60	-2	-0.14	0.564
21	2	24	3.38	1.50	3	23	3.00	0.74	-1	-0.42	0.089

In terms of changes over time, in the control group, only one question (Q18: Lack of participation in community activities) changed significantly with time, increasing from an average of 3.93 to 4.50 over the year that separated the measures. This positive

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increase indicates an increase in social dysfunction. Except for one question (Q15), all other changes over time were either zero (six cases) or positive (14 cases), indicating that the general trend was an increase in social dysfunction over time.

In the ACNP group, four questions changed significantly over time. Questions 6, 9 and 10 all decreased significantly over the year that separated the measures, indicating an improvement in these measures of social dysfunction, which relate to hostility, anxiety and suspiciousness. In contrast, one question (Q 12, which relates to a lack of friends and social contacts) increased post ACNP interventions. In looking at general trends in the average scores, approximately half (11) of the average scores decreased from pre- to post-measures, eight increased and 2 did not change at all. Therefore in the ACNP group, the general trend was much more evenly balanced than the control group, with increases and decreases in the social dysfunction score fairly similarly distributed.

A two factor analysis of variance was used to compare the control and nurse practitioner groups, and to determine if there were any differences between the two sampling times. This test showed no significant differences between the control group and the nurse practitioner group ( $F=1.565$ ,  $P=0.215$ ) and no differences between the two time periods ( $F=0.000$ ,  $P=0.982$ ). There was no interaction between the two factors ( $F=0.683$ ,  $P=0.411$ ).

The conclusion from this analysis is that the ACNP did not significantly affect the overall social function of the residents in the group despite the significant improvement in four measures of social dysfunction, which related to hostility, anxiety and suspiciousness.

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In the majority of cases in both control and ACNP groups the tendency was for no change in the number of residents to whom the question was not applicable ('# n/a') over time. However, in those questions that did change, more of them tended to increase. For example, in the control group the '# n/a' increased over time in three of the questions, whereas only one decreased, and the remainder remained unchanged. Similarly, in the ACNP group the '# n/a' increased in eight of the questions, decreased in four and remained unchanged in nine cases. The greater number of increases compared to decreases over time in the ACNP group suggests that the ageing process may have diminished these residents' awareness of their surroundings. A reason for the greater number of changes over time in the ACNP group is likely to be related to the greater sample size in the ACNP group.

### **5.7 COMPONENT 6 – ECONOMIC EVALUATION POST IMPLEMENTATION**

A health economist was consulted at the beginning of the project but it was determined that evaluation of the cost savings or otherwise of the project was extremely difficult hence this evaluation did not continue. An indicator of cost benefits determined to be useful was that concerning hospitalisations and these are described below. The conclusion arose that staff costs and infrastructure costs did not substantially change due to the involvement of the ACNP in the home's activities as a Charge Nurse. The only differential was an increase in the ACNP's wage to a higher RN grading paid to the ACNP during the project, similar to an Assistant DON wage. Box 1 outlines the calculations used to determine the increase in wage attributed to the ACNP from a Federal Residential Aged Care Nursing Home Award



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Grade 4A wage to a Grade 5 rate amounting to an increase of \$4,833.24 per annum (or 7%). The ACNP worked 3 weekend shifts per fortnight. Remaining shifts were week day evening and morning shifts. Wage differences are dependent on shifts and shift allowances.

### **Box 1 – Wage comparison between the ACNPs Charge Nurse wage and an identified equivalent ACNP wage**

#### **NP wage increase component:**

The difference between the candidate's present Residential Aged Care Nursing Home Award Grade 4A Year 2 hourly rate (\$25.28) and the Residential Aged Care Grade 5 rate (\$27.02) is \$1.74 per hour.

The ACNP worked 76 hours per fortnight, 23.5 hrs were worked on weekends hence 52.5 hours were ordinary time, 23.5 hours were paid at a time and a half rate. The regulated necessary 'add-ons' have been calculated as a further 21.75% of the wage (superannuation – 9%, payroll tax – 5.75%, workcover – 7%).

#### **Extra Hourly rate calculation**

52.5 hrs ordinary hours per fortnight :  $52.5 \times \$1.74 \times 26 \text{ f'nghts} = \$2,375.10$  (A)

23.5 hrs time and a half per fortnight :  $23.5 \times \$2.61 \times 26 \text{ f'nghts} = \$1,594.71$  (B)

**Sub total : A + B = \$3,969.81**

Add ons – 21.75 % = \$863.43

**Total = \$4,833.24 per annum**

The above rate is applicable across Australia as the Federal Award. Shift allowances have not been included in the calculations as these would be similar regardless of RN grading under this Award. However, Box 2 outlines the calculations used to determine a possible further increase in wage that could be attributed to the ACNP if paid at the higher Victorian Nurse Public Sector Award (if working as an ACNP in a State health funded setting), as opposed to the Federal Residential Aged Care Grade 5 rate attributed to his current position. Assuming the ACNP worked the same shifts as previously noted, Box 2 identifies an additional potential increase in wage of \$11,654.98 per annum (or 16%). The wage difference included a difference in shift allowance and hourly rate. Also, evening shifts are often shorter in the aged care sector compared to acute care nurses, requiring the RN to work 6.5 hours only. The ACNP worked 11 shifts per fortnight, 3 morning and 8 evening shifts or 76 hours per

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fortnight. There are similar wage disparities between the other Australian States, State based aged care Awards and the Federal aged care award. Therefore the maximum increase in wages of an ACNP moving from a Grade 4A (2) federal rate to a Grade 5 Victorian State rate working these amounts of evening and weekend shifts could be \$16,488.22 (Box 1 + Box 2) per annum or \$634.16 per fortnight.

### **Box 2 – Wage comparison between the ACNPs Victorian Award identified equivalent ACNP wage and a Federal Award rate**

#### **NP wage increase component from Victorian Award to Federal Award:**

The difference between the Victorian Nurse Public Sector Award 's Grade 5 hourly rate (\$31.07) and the Residential Aged Care Grade 5 rate (\$27.02) is \$4.05 per hour.

The ACNP works 76 hours per fortnight as the Unit Manager / Nurse Practitioner candidate, including 23.5 hours worked on weekends (time and a half). This equates to 52.5 hours ordinary time and 23.5 hours as time and a half.

The PM shift allowance difference between Awards is \$1.60 per shift.

The regulated necessary 'add-ons' have been calculated as a further 21.75% of the wage (superannuation – 9%, payroll tax – 5.75%, workcover – 7%). The difference therefore between each Award's Grade 5 rates for 12 months amounts to \$11,756.28.

#### **Extra Hourly rate**

52.5 hrs ordinary hours per fortnight :  $52.5 \times \$4.05 \times 26 \text{ f'nights} = \$5,528.25$  (A)

23.5 hrs ordinary hours per fortnight :  $23.5 \times \$6.075 \times 26 \text{ f'nights} = \$3,711.83$  (B)

**Sub total : \$5,528.25 + \$3,711.83 = \$9,240.08**

#### **Extra shift allowance increase component**

\$1.60 / shift extra in Public Award – 8 shifts / 26 f'nights = \$332.80 per annum

**Sub total = \$9,572.88**

Add ons – 21.75 % = \$2,082.10

**Total = \$11,654.98 per annum**

There were no determinable savings to the home other than potential savings related to staff turn-over costs, as the ACNP stated he would have left if ongoing support of this position had not been available, in search for other senior roles in other RACFs. A slight increase in resident and family satisfaction may have contributed to less RN time spent managing disgruntled recipients of care.

As analysed through other projects listed in the Literature review, costs related to prescriptions and diagnostic tests could not be established because the regulatory

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framework did not enable the prescribing of these by the ACNP. However, as the medical practitioners' concurred with 175 of the 179 recommendations made by the ACNP, it therefore appears there would have been little appreciable difference between costs to the PBS or MBS associated with what the ACNP prescribed or ordered compared with what the general practitioners may have prescribed or ordered.

The significant potential savings to the Commonwealth relate to the savings of claims under the MBS for a GP visit to a resident of an aged care facility. The above notation indicates the ACNP intervened in relation to medical care needs 179 times over 8 months (17.5 fortnights) over 11 shifts a fortnight. This equates to an intervention almost every shift worked (192 shifts) or 0.93 interventions per shift. The issues the ACNP addressed include those listed in Table 4d but the medications prescribed and their category are listed in Table 19.

**Table 19 Number of drugs recommended by the ACNP for the GP to prescribe, not including recommended medication dose changes ie. review of analgesia amount.**

Total number of medications recommended of this drug group / type	DrugGroup
33	Vaccination
19	Analgesics
16	Antibiotics
15	Aperients
7	Eye ointment
5	Topical
4	Antiemetic
4	Eardrops
2	Bronchial related
2	Glucagon
2	Insulin
2	Sedative
1	Anticoagulant
1	Neocytamin
1	Burn cream
1	Other
1	Calcium supplement
<b>Total : 116</b>	

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In 2003, if a medical practitioner was required to attend the home each shift the ACNP worked to address the issues addressed by the ACNP, this would have equated to a MBS cost of \$57.35 per resident plus \$21.10 divided by the number of patients seen, up to a maximum of 6 patients ie. a maximum cost of \$78.45 per resident ( $\$57.35 + \$21.10$ ) or a minimum cost of \$60.87 ( $\$57.35 + \$21.10/6$  residents) (Australian Government Department of Health and Ageing, 2003, p.59). This is in comparison to a cost of an average \$16.90 increase in wages per shift of the ACNP (assuming an average 7 hour shift at the Grade 5 federal wage, 11 shifts per fortnight for 26 fortnights) or an increase of \$57.65 per shift if the rate of the ACNP changed from a Grade 4A (2) federal rate to a Grade 5 Victorian State rate (totals from Box 1 + Box 2, assuming the same amount of shifts per fortnight).

As previously noted, the ACNP acted on medical type interventions 0.93 times per shift. The maximum wage increase of an ACNP is \$57.65 per shift. The lowest MBS GP visit rate is \$60.87 or  $\$57.35 + \$21.10/6$  residents. Hence, both noted possible increases of the ACNP's wage are still less than either of the MBS individual GP visiting costs demonstrating an ACNP to be a more cost effective professional. This is unless 0.93 (no. actual medical type interventions per ACNP shift) of the minimum MBS GP visit rate is calculated:  $\$60.87 \times 0.93 = \$56.61$ , which equates to a saving of \$1.04 per shift if the GP visited 6 patients each time they visited / intervened in the manner of the ACNP, an unlikely regular circumstance.

The project incurred additional costs that would not be relevant to an ACNP role. Supervisory costs were incurred due to the necessary involvement of the residents' GPs in providing support and education to the ACNP in addition to that received through the La Trobe education program. Project associated costs provided to this

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researcher whose role was not required once the project finished were irrelevant to the day to day operation of the ACNP. As outlined in the next sections, hospitalisations, however, were reduced during the ACNP year compared with the previous two years' data for the same period.

### **Hospitalisations**

This section outlines the data collected regarding hospitalisations over the months of December – August, over a three year period from December 2000 to August 2003. Only data during these months were collated to ensure the data for previous years corresponded with the same period of the year to try to minimise seasonal variation of hospitalisations, for example winter and chest infection related hospitalisations. The sample size consisted of the 60 residents living at the nursing home present at any one time with similar admission rates identified over the years. It was assumed that admitted residents each year had similar levels of morbidity.

Table 20 demonstrates that:

- 13 persons from the aged care facility went to hospital during the ACNP period, 3 residents went twice. Of these 13 persons, 10 residents were in the project
- 77% of hospital admissions were for persons in the project, not a significant difference from the 75% of residents who were in the project at any one time
- Reasons for admission to hospital differed from previous years to the ACNP year.

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**Table 20 Numbers of hospitalizations (including readmissions) compared over same period of months each year for three years.**

<b>REASONS FOR HOSPITALISATION</b>	<b>Dec 00 - Aug 01</b>	<b>Dec 01 - Aug 02</b>	<b>Dec 02 - Aug 03</b>	<b>Total over 3 years</b>
Atrial fibrillation	0	0	1	<b>1</b>
Amputation - infected toe	1	0	0	<b>1</b>
Acute pulmonary oedema	0	1	1	<b>2</b>
Cataract surgery	0	2	0	<b>2</b>
Cerebral vascular accident	1	0	0	<b>1</b>
Cardiac insufficiency	0	2	1	<b>3</b>
Dilatation & curettage	0	0	1	<b>1</b>
Dehydration - from chest infection	1	0	0	<b>1</b>
Dysphagia	0	0	2	<b>2</b>
Elective surgery	1	1	0	<b>2</b>
Fracture - NOF, humerus	1	2	4	<b>7</b>
Fracture - revision, complications	0	2	0	<b>2</b>
Fall	0	2	2	<b>4</b>
Gastro-intestinal bleed	0	1	1	<b>2</b>
In dwelling catheter blocked/removal	1	0	0	<b>1</b>
Infection / cellulitis	6	2	1	<b>9</b>
Percutaneous endoscopic gastrostomy related	2	1	1	<b>4</b>
Pneumonia & related issues	3	1	0	<b>4</b>
Pain management	0	1	0	<b>1</b>
Urinary tract infection	7	4	1	<b>12</b>
<b>Total</b>	<b>24</b>	<b>22</b>	<b>16</b>	<b>Tot: 62</b>
<b>% of total admissions over 3 years</b>	<b>39%</b>	<b>35%</b>	<b>26%</b>	

Hospitalisations of residents fell over the ACNP intervention period compared with the previous two years' data. The reasons for hospitalisation were significantly different, demonstrating that past medical issues could be addressed and hospitalisations for these reasons were prevented, for instance urinary tract infections (UTI) (Table 20). For example, from December 2000 to August 2001, residents were hospitalised 24 times. The conditions residents were mostly admitted for were:

- urinary tract infections - 7
- infection / cellulitis - 6
- chest infections and related issues - 3

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During the same period of the year ie. from December 2001 to August 2002, 22 residents were admitted to hospital. The reasons were spread across many types of medical conditions. Urinary tract infection (4), however, continued to be the most common reason for hospital admission that year. The category of infection / cellulitis decreased from 6 cases in the previous year to 2 cases in this period.

From December 2002 to August 2003, the period in which the ACNP was involved, sixteen residents were admitted to hospital, constituting only 26% of all admissions over the three year period. Only one resident was admitted for a UTI and one for other infections compared with seven in the first period and four in the next. The most common reason for admission in 2003 concerned fractures sustained in the home. This was explained by management as being due to a particularly frail resident who fell and injured themselves three times. It is also worth noting that on ten occasions over the project, the ACNP managed to care for residents with a UTI, yet only the one resident was admitted to hospital for this diagnosis. The ACNP intervened on twenty occasions in the care of persons with chest infections and no hospitalisations were experienced in relation to pneumonia or other related complications, compared with three hospitalisations in the first period and one in the second. On ten occasions the ACNP intervened in circumstances where residents had skin infections with only one hospitalisation occurring, compared with 6 in the first year studied and two in the second.

Given three quarters of residents (75%) were involved in the ACNP project, and as previously noted, 77% of the residents admitted to hospital were in the project, a similar percentage, it could be viewed that a decrease in hospital admissions from

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39% in year 1 to 26% in year 3 (the ACNP project year) is large enough to demonstrate a positive ACNP impact on resident hospitalisations.

Statistical analysis of these results was not undertaken. However, if the trend demonstrated through this data were to continue, i.e. the reason for hospital admission did not include conditions such as a chest infection or a urinary tract infection, hospitalisations may well have been prevented in the future through more timely interventions. The main reason for hospitalisation over the three years related to infections which an ACNP, if able to prescribe antibiotics, could have treated promptly.

### **Staff views on economic impact**

Views of staff regarding the economic benefit or otherwise of the role, elicited through the focus group include the following comments and are included as a qualitative component of the economic evaluation. When members of staff were asked what impact the role of an ACNP had upon a health budget, they stated:

- "Government's pay for LMOs why not pay for a nurse practitioner at a lesser cost."
- "The budget (nursing home) would increase because of extra work that needed to be completed."
- "It means the grade 5 rate currently paid to some staff in some home's would actually go to a person who proved their clinical expertise."

When staff were asked to consider the areas where financial savings were made, they stated:

- "The overall health budget could be reduced."



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- “GPs won’t have to attend as often as the smaller clinical issues would be addressed, leaving only the more serious issues to the GPs. We have already found the rate of hospitalisation has reduced since Richard started doing this work.”
- “The government needs to ensure the pathology tests they (ACNPs) order are paid for and the medication prescriptions are recognised by the pharmacists. The reduction in hospitalisations will mean the government would get some savings which they should then allocate to those homes who have NPs, so that they can afford to pay for them, therefore encourage their existence.”

## **5.8 CASE STUDIES – INDIVIDUAL OUTCOMES**

During the project, various case studies were discussed between the ACNP and this researcher and documented to represent some of the expansions to practice conducted by the ACNP. Some of these case studies are reproduced below to represent typical circumstances which the ACNP managed, for a more comprehensive view of the outcomes of the interventions of this ACNP.

### **Case Study 1**

D.K. was a 91 year old woman who had been a resident at GPNH facility for 4 years. Staff referred her to the ACNP for review as she had been resisting care which was very unusual for D.K. and a foul odour was noted coming from her hands. Her past history included collapse, confusion, fractured NOF and Humerus. She was bed-ridden with increasing hand and feet contractures. On investigation the ACNP discovered a severely inflamed fungal infection in both hands with severe associated pain on touching the area. Management included contacting the GP and recommending Panadeine 1gm bd, and Hydrozole cream bd. to both hands with a recommendation to switch to Ordine if the Panadeine proved inadequate. The GP concurred with the ACNP's recommendations, faxed the prescription to the pharmacist and the resident was able to immediately commence treatment once the pharmacist delivered the medications.

The management of this person's pain and infection resulted in the problem being resolved in 4 days. One week later the Panadeine was changed to Panadeine Forte by her doctor for cost concerns. The benefit of such quick management of a situation that had caused obvious distress was undoubted. This example is typical of a non-

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emergency event where residents wait for days until a medical practitioner can examine and treat the problem. Nursing interventions which would otherwise have had to be implemented after the GP attended would not have resolved or alleviated the pain as quickly as the implementation of a relevant cream and sufficiently strong analgesia.

### **Case Study 2**

N.C. was an 82 year old woman who had been a resident at GPNH for 1.5 years. Staff referred her to the ACNP for review due to increasing agitation and aggression over the previous 2 days; again this was unusual for the resident. Her past history included dementia, declining mobility, recurrent UTIs and hypothyroidism. The ACNP conducted a health assessment and he excluded a chest infection and pain as possible causes for the unusual behaviour. The ACNP, however, suspected a UTI and a full ward test of urine showed positive leucocytes, nitrates and blood and a pH of 5.0. The ACNP ordered a MSU which was collected and sent to pathology that evening. When the ACNP contacted the pathology laboratory 1.5 days later, a Saturday, he was informed that N.C. had an E.Coli infection that had proved resistant to many antibiotics, but happened to be sensitive to Trimethoprim.

The resident's own doctor was on leave and the covering partner refused to address the situation, telling the practice nurse to contact a locum. This particular resident would have to wait more than 12 hours before treatment could be considered. When the ACNP contacted the practice nurse again, she contacted the resident's own doctor at home who contacted the ACNP. The ACNP recommended Triprim 300mg nocte to which the resident's GP agreed and a medication phone order was taken. The GP then contacted the pharmacist who dispensed the antibiotics that evening.

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### **Case Study 3**

C.W. was a 91 year old woman who had been a resident at GPNH for 2 months. Staff referred her to the ACNP one morning at 0900 hrs when she would not rouse for breakfast. Her past history included chronic renal failure, multiple UTIs, NIDDM, CCF and behavioural issues which often presented as anxiety and pretending to be asleep. When the ACNP conducted a health assessment he found her to be in a coma with a Glasgow coma scale score of 6. The ACNP suspected a hypoglycaemic coma although her diabetes was diet controlled and had been stable with BSLs usually presenting as slightly higher than preferred. A subsequent BSL revealed a level of 1.6 mmol/lit.

The ACNP immediately prescribed a glucagon hypo kit, 1 mg per ml by deep IM injection. The chemist dispensed the kit as an emergency within 20 minutes and administration resulted in recovery by mid-morning where she was able to take oral food and fluids. The only other option for treatment in this situation would have been to call an ambulance to admit C.W. to hospital because her local doctor could not be contacted. Such an admission would have caused her subsequent relocation stress and could have required her to wait hours in the emergency department for a return ambulance. The benefits for the resident and the cost-savings made to the health industry are obvious.

### **Case Study 4**

L.M. was an 89 year old man who had been a resident at GPNH for 1.5 years. The ACNP was referred to him by the DON to give him some one-on-one attention as the gentleman was never satisfied with his medical management and often complained about this. His past history included anaemia, UTIs, osteoporosis, osteoarthritis,

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rheumatoid arthritis, depression, fractured NOF and cancer of the bowel with a colostomy.

The ACNP conducted a full physical examination and detailed review of his past history. This patient rated 27 out of 30 on Mini-mental examination, had a high depressive scale rating with suicidal tendencies. He had noticeable deformities of the thoracic and lumbar spine with an associated self reported pain rating of 10 out of 10. He complained of central, epigastric pain on this occasion which was 'unbearable.' The ACNP suspected the presence of gastro-reflux oesophageal disease based on his clinical symptoms and recommended that the following blood tests be undertaken; Urea and Electrolytes, a Full Blood Examination, Liver Function Tests and a serum calcium level.

The ACNP then recommended a C-Reactive Protein test (a protein found in the blood in response to inflammation) and thoracic lumbar / spinal X-Rays to be performed and the resident's GP agreed. The ACNP also recommended to the GP the following remedies:

- double L.M.'s 75 mg dose of Effexor
- prescribe Gastrogel 20 mls BD for reflux
- prescribe a Metsal rub to his back BD, and
- order Panadol QID for his back pain as he was allergic to Codeine.

The pathology revealed a major finding in that CRP was 41 and there were severe compression fractures of T11, T12 and L 4 with multiple degenerative disc changes. On receiving the x-ray results and consultation with the physiotherapist, the ACNP

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recommended MS Contin 5 mg BD for pain control. However, his GP prescribed Tramal SR 200 mg daily, which L.M. responded to reasonably well.

On review of his pain management 2 months later, the ACNP found his pain control appeared to be poor, and he was suffering from insomnia and was noticeably more confused. The ACNP recommended to the GP to cease the Effexor and change to Avanza 15 mg half nocte which he agreed to. The ACNP also recommended ceasing Tramal and commencing MS Contin 5 mg bd, which the GP also agreed to but ordered it as MS Contin nocte only. These changes resulted in good pain control and the resident experienced an improved state of happiness with much less confusion. Again, this case is a good example of how a fully detailed gerontological nursing assessment can assist an older person's quality of life.

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## **6 DISCUSSION OF FINDINGS**

The findings of this study correspond with the findings of many similar projects conducted overseas; a Cochrane review by Laurant et al (2006) which investigated the substitution of doctors by nurses in primary care and a systematic review conducted by Horrocks et al (2002) regarding nurse practitioners and doctors working in primary care.

The data collected during this current study was both quantitative and qualitative in character with 179 ACNP instigated medical type interventions recorded over the ten month period of the project for on average 46 residents who were involved at any one time. This highlighted a significant gap in GP services and implied that there was an urgent need for an aged care nurse practitioner role in residential aged care. The resident population in this study appears to be similar to that of the national Australian ACNP trial project conducted by Joanna Briggs Institute in 2007.

The main concerns which the ACNP addressed and where the ACNP influenced outcomes were in the following seven presenting problems:

- Respiratory tract - URTI / LRTI / chronic conditions
- Behaviour / confusion
- Bowel management
- Urinary tract infection
- Pain management
- Eyes – condition / infection



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- Skin/integumentary – itching / impairment / rashes / discharge / Decubitus ulcers

The ACNP also initiated and administered vaccinations, the Fluvax and Pneumovax for thirty-three residents with the residents' GPs prescribing such medication.

Given that many residents suffered from diabetes and had multiple medication regimens which required regular monitoring and adjustment, the management of diabetes (3.9%) and the review of medication regimens (3.9%) constituted less time than first considered. The extent of the other interventions are not surprising given the ageing population the ACNP worked with. Rosenfeld et al (2004) also found that the main role of ACNPs was to visit sick residents, to provide preventative care, perform advanced assessments and address palliative and pain care matters as did the national Australian ACNP trial (Joanna Briggs Institute, 2007).

Another interesting comparison was that in the UK, the Royal College of Nursing is responsible for approving the education program of NPs whereas in Australia, the Health Practitioners Registration Boards are responsible for endorsing NPs and establishing an adequate NP knowledge base prior to registration. Prior to this it was each States' Nurses Board. This study did not establish what impact this may have on the knowledge expected of an NP but it would be an interesting study for the future.

The Hegney et al. tool used as a time and motion study tool by the ACNP and this researcher enabled categorisation of every minute of the ACNPs time over two shifts pre and post the project, with a proportionate analysis of the data demonstrating the time the ACNP spent in these various activities and the significant changes in practices between the two events as a percentage. The finding that 10 times more time was spent by the ACNP during the project conducting advanced resident

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assessments, compared with pre the project, demonstrates the greater focus the ACNP had on tasks which identified resident needs more acutely. Stolee et al (2006) also found that the ACNP had a positive impact on staff assessment skills and advanced assessment was a necessary regular ACNP task. The national Australian ACNP trial also utilised a minimum data set to establish ACNP activities and utilised focus groups to establish stakeholders views. The findings of the ACNP activities in that Australian national study correlate favourably to this study.

Hospitalisations of residents declined over the ACNP intervention period compared with the previous two years' data. The reasons for hospitalisation were very different demonstrating that medical issues which previously were the cause of hospitalisations were potentially managed differently during the ACNP period. For example, the participating GPs concurred that the assessment completed by the ACNP and the early detection and treatment of UTIs enabled more immediate treatment access to residents which prevented issues extending to more serious conditions requiring hospitalisation. There had been 7 UTI related admissions during the 2000 -2001 period, 4 UTI admissions in 2001 - 2002 and only one in the ACNP period. Pre-project data collected and analysed by the ACNP found it took anywhere from 1-5 days from when a UTI was suspected until the doctor was able to visit and act and that sepsis related to UTIs was the main cause of residents' hospitalisation. During the project the ACNP and GPs collaborated more closely with the ACNP recommending treatment immediately an issue arose which was followed by a medication phone order, administered on the day of the finding. This finding identified how difficult it had been to obtain medical attention previously and how prompt ACNP interventions could impact on resident health outcomes. This correlates

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with the findings of Buppert (1995) and Drake (1995) who also found admission to acute care decreased when a NP was involved.

In this study, the ACNP's decision to order medications was concurred with by the GPs in 175 of the 179 ACNP decisions. Dragon (2008) also found in their study that a GP disagreed rarely with the NPs recommendations. This is in contrast to Avorn et al's (1991) finding that MDs were more likely to order more medications than NPs. Horrocks et al (2002) conducted a systematic review of randomised controlled trials and prospective observational studies to determine whether nurse practitioners working in primary care could provide equivalent care to doctors. Their review found patients were more satisfied with care by a nurse practitioner with no differences in health status. NPs had longer consultations, made more investigations than doctors but there were no differences in the ordering of prescriptions, return consultations, or referrals.

The Cochrane review conducted by Laurant et al (2006) identified no appreciable differences between "doctors and nurses in health outcomes for patients, process of care, resource utilisation or cost" (p.1). Patient satisfaction was higher with the nurse-led care and NPs tended to provide longer consultations, provided more information and recalled patients more frequently than doctors. This review however highlighted the need for caution as the nurse may have been meeting previously unmet needs. It also highlighted the need for appropriate CPGs to guide practice. In this study, the extensions to practice which the ACNP undertook, were determined collaboratively with the residents' GPs. The draft Clinical Practice Guidelines (CPGs) prepared over the life of the project to inform and guide the ACNP's activities were based on current texts and research as reported in journals, textbooks and online or

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Internet medical search engines. The CPGs were collaboratively developed with the RACF's GPs, the physiotherapist and the other ACNP projects and based on current research concerning specialised aged care nursing practice. They supported the project's goal of ensuring safe and appropriate practice from a legitimate evidence base.

The ACNP continued to be the Charge Nurse during the project but he was able to obtain orders for medications and pathology tests far quicker through improved GP collaboration and by using Standing Order type systems. These results also imply that an ACNP who can assess, identify and address residents' needs and health issues more expediently and holistically can improve care and treatment outcomes.

The results support the conclusion that the nurse practitioner candidate provided a holistic aged care specialist nursing service. The ACNP's focused assessments targeted residents' presenting problems and identified additional health issues, for example, depression or previously unidentified pain caused by past fractures and medical issues. These were highlighted in the presented Case studies.

The results suggest that the ACNP's interventions were of high quality and improved residents' quality of life. This was achieved by intervening in a timely manner when residents required relief of their physical and psychological symptoms through one-on-one specialist medical nursing attention. Furthermore the results of the post-project functional and social assessments indicated an improved outcome for residents during the project compared to those who were not involved.

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In general there was no significant change between the satisfaction questionnaires pre and post the project with the exception of the question which asked residents: 'Are you satisfied that staff (pre-questionnaire) / the nurse practitioner (post questionnaire) who helped you, listened to and understood your needs?'. Before the ACNPs involvement and extended practice implementation, this question was rated lowest by residents, and following the implementation it was one of the most highly rated. But then it is not surprising that this question should present a significant difference given the additional attention the ACNP was able to provide residents in relation to clinical matters.

The results of the relatives' and friend's post project questionnaire also indicated a high level of satisfaction with the level of care provided as did the national Australian ACNP trial's results (Joanna Briggs Institute, 2007). All scores corresponded to a rating of 'mostly satisfied' and 'highly satisfied'. The most revealing finding was that all 18 respondents remained highly satisfied that pain and other medical conditions or symptoms were being adequately controlled when questioned following the advent of the nurse practitioner. Interestingly also, this post survey showed 67% respondents agreed completely that they were provided with appropriate information regarding the resident's condition yet more respondents, 89%, agreed completely that they felt there was good communication between the service and other health providers involved in resident care. An important consideration to remain mindful of when collaborating with other health professionals is to ensure residents and relatives do not feel left out of the discussions. Kane et al (2001) also found that the increased time ACNPs spent with residents was an important function that supported an MDs primary care role and improved a families satisfaction with care.

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Statements from the GPs post-implementation focus meeting indicated the GPs believed the ACNP provided a high level of quality care in collaboration (referral, case conferences, care planning) with them and other allied health professionals. The GPs commented that they valued being able to rely on the ACNP's decision making, assisted by the fact they had contributed to the ACNP's health assessment education. They identified a number of ACNP extensions to practice which they felt supported them in their role of providing quality medical interventions. The project also identified that costs associated with the ACNP acting as a Charge Nurse would not have caused an increase in the PBS or MBS. The national trial however identified that the ACNP would be more costly when acting in a supernumerary role (Joanna Briggs Institute, 2007, p.78).

Physical decline during the year that measurements took place was significantly arrested in the nurse practitioner group. The nurse practitioner residents' Barthel's Index showed a lower rate of decline compared to the control group hence improved medical and nursing management provided significant positive outcomes for residents in their functional status, subsequently improving their quality of life. The national ACNP trial also found statistical differences between residents who received ACNP services compared with residents in control sites with ACNP residents experiencing higher general satisfaction scores which were associated with higher health scores and quality of life scores (Joanna Briggs Institute, 2007, p.76).

Social dysfunction existed in most aspects of the residents' lives. Average scores of 5.0 (the 'very severe' social dysfunction rating) were recorded in three cases in both control and nurse practitioner groups related to Q14 (a lack of work) and Q15 (a lack of leisure time activities) for both groups and Q2 (goallessness) in the ACNP group.

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The pre- and post-project results of all other factors in the social function assessments when compared with the control group during the same period showed the ACNP did not significantly affect social function. However, within the ACNP group of residents, three questions assessing social function changed significantly over time. Questions 6, 9 and 10 all decreased significantly over the year that separated the measures, indicating an improvement (a reduction) in hostility, anxiety and suspiciousness amongst the group. The results therefore indicate that the ACNP positively influenced some aspects of the ACNP's residents' social quality of life.

Again, this correlates with a range of other studies that found ACNP's to be a vital link to quality healthcare for elders, that facilities with ACNPs provided better care to residents (Dorson, 2006; Fulmer, Flaherty & Medley, 2001; Intrator et al. , 2005; Rosenfeld, 2003; Sharp, 1999; Massengill, 2006).

The staff focus group stated they perceived care had improved as residents were assessed more thoroughly and care needs were acted upon immediately. They overwhelmingly endorsed the role of an ACNP and acknowledged the higher level of education and knowledge demonstrated by the ACNP. In terms of their own nurse practitioner relationship they stated the ACNP listened attentively to them and they were able to discuss issues easily with him, reinforcing the previously identified need for NPs to educate staff and to involve them in case management and demonstrate respect for their views. This again matches the findings of the national Australian ACNP trial's seven sites where most respondents supported the concept of an ACNP (Joanna Briggs Institute, 2007, p.35). This also correlates with other studies findings that it was important that the ACNP preceptored and educated nursing staff (Feldt et al, 2002; Genet et al, 1995; Small, 1994; Smyth et al, 2001; Stolee et al, 2006), and

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that the success of the ACNP role depended on the acceptance of the role by nursing staff, resident's, their families and the GP's. Robinson et al (2006) also identified that to infuse a positive effective culture for an ACNP, all members of the team must have a shared vision. Small's (1994) conclusion was that all the challenges commensurate with implementing this role were worth addressing, "because employment of an ACNP is a cost-effective way to improve nursing home quality of care" (p.50).



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## **7 CONCLUSION**

### **7.1 The ACNP role**

The advantages identified regarding the ACNP role included the ability to improve care and treatment outcomes for residents by addressing their complete needs and health issues more expediently and holistically. By using contemporary clinical practice guidelines the ACNP was guided in ordering diagnostic investigations, prescribing therapeutic medication management strategies and conducting referrals to medical specialists through a collaborative approach with residents' GPs.

Throughout the ACNP demonstration project, GPs became an integral part of the ACNP's activities as the ACNP could not order or prescribe items as wanted. When MBS and PBS powers are ascribed to a NP role in 2010, the GP would still perform a major role in the medical management of residents and would necessarily need to be an integral part of the consultative process. The advantages of the ACNP role are clear, in that timely interventions can be performed confidently and support further medical interventions which a GP may agree as being necessary.

Issues of State and Federal Government funding remain a significant limitation of the role. What needs to be made available is the provision of appropriate and accessible education that addresses the needs of a workforce of women who are on average 50 years of age, often with family commitments. Findings indicate that each of these areas could be improved with adequate financial support from State and Federal Governments.

## **7.2 RECOMMENDATIONS FOR PRACTICE**

In view of the conclusions, several recommendations are proposed:

### **1. That the ACNP role continues in the nursing home**

As demonstrated by the evaluation activities' findings, the ACNP role positively impacted on residents' quality of life outcomes in the physical, medical and social realm. The role was valued and the project's GPs' comments indicate that the expedient interventions were considered to be high quality.

### **2. That the Australian government adequately funds the ACNP role and supports RNs in the industry to seek and undertake NP qualifications, thus ensuring the role is present in the industry**

The Australian Government, as the funding body for residential aged care, does not prescribe how monies provided to organisations are to be exactly allocated. The government provides funding for the operational and care aspects of managing an aged care organisation. However, as the ACNP role is unique and new to the industry, it is clear that provisions to fund such a position have not been calculated in the operating costs and subsequent government allocation of monies to aged care facilities. Hence, if an organisation wished to pursue the employment of a person in this role, funds will need to be made available if organisations are to afford such a position as they are not currently supported to fund this role.

It is difficult to allocate a dollar figure to the cost savings which an organisation can obtain through implementation of this position. Cost savings related to aspects of care such as improved resident and representative satisfaction, improved individual resident functioning and mobility levels, reduced or prevented medical complications.

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This in turn can affect staff satisfaction and retention, etc. However, there were clear positive outcomes achieved in this project which justifies the implementation of such a role to ensure quality care outcomes for older Australian residents. Other savings which the projects' demonstrated outcomes impact upon include those related to fewer admissions to State funded hospitals, PBS savings through more expeditious use of medicines and avoidance of medical complications from non-timely medical interventions.

### **3. The cost benefits associated with implementation of the ACNP role be further investigated**

The ACNP was not a registered Nurse Practitioner with prescribing rights or diagnostic ordering capabilities. Throughout the project, the ACNP was only able to recommend such to GPs who were still required to order the recommended tests or medication / change based upon their ultimate decision. The GPs concurred with the recommendations of the ACNP on the majority of occasions. Consequently, allocating a cost to such decision-making differences is arbitrary because differences of opinion may also exist between GPs.

Up until the 2009 Australian Government Budget was announced, there was no currently available public funding from either the State or Australian Government to pay for nurse practitioner requested diagnostic investigations or prescribed medications. This meant tests ordered by nurse practitioners would not be subsidised unlike those ordered by medical practitioners or other approved health practitioners. This role therefore would not have been accessible to older Australians who could not afford to pay for services which they otherwise would not have to pay for under MBS and PBS payment systems. Adequate government funding therefore is paramount to

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achieving and sustaining the role over the long-term, to ensure older Australians can afford the expertise offered by an ACNP. In 2010, MBS and PBS funding will be made available for NPs.

Further analysis of the cost effectiveness of the ACNP role over a more significant time frame with a larger cohort of recipients of true ACNP interventions is required to inform the public also of the possible social cost benefits, as well as the medical cost benefits. As described earlier, the only cost saving to the medical system that were demonstrated by the project consisted of those costs related to hospitalisation.

Timely interventions for medical concerns did positively impact on the number of hospitalisations during the ACNP intervention year.

#### **4. That the ACNP role continues to be further explored and developed for effective implementation once ACNP endorsement is achieved**

Both the other Registered Nurses and the ACNP identified that more time was taken by the ACNP on health assessment activities. The extra time taken to assess residents was also demonstrated in the findings of the Scope of Practice audit. This at times placed extra burdens on the other nursing staff who would undertake more non-nursing and administrative duties to compensate for the support provided by the ACNP. Hence implementation of the role combined with a Charge Nurse responsibility needs to be further explored so other staff are not overburdened with additional responsibilities which the ACNP cannot address due to health assessment requirements.

As the timing of such resident needs cannot be predicted, what needs to occur is a consideration of the best method to support both the ACNP and other Charge Nurses

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to utilise this role effectively to achieve quality resident outcomes. This researcher decided that one idea was to consider remodeling the starting times of shifts following an ACNP shift. If the Charge Nurse of the shift following the ACNP shift commenced one to two hours earlier, the ACNP could utilise the last hours to complete non-nursing and administrative tasks without the burden of also being the Charge Nurse. This would avoid other staff having to undertake the responsibilities of the ACNP Charge Nurse. This overlap of one to two hours for each shift the ACNP works is justified by the fact that approximately 180 ACNP interventions were recorded over the nine months of the project proper. In effect this means an average of 20 interventions per month and approximately one intervention per shift worked by the ACNP. Each intervention took on average an hour of the ACNP's time followed by documentation and GP consultation and follow-up of intervention outcomes. Further exploration of the appropriateness of this method or others and further funding is required to ensure all staff are supported to successfully implement this role.

The future work required to address this recommendation would also entail an analysis of the content and implementation of employment contracts for ACNPs.

#### **5. That CPGs be developed to support each Nurse Practitioner Type and used by all NPs throughout the country**

The Australian Nursing and Midwifery Council (ANMC) National Competency Standards for the Nurse Practitioner (2004) should enable further articulation of the role throughout the country. As each Australian State has historically established a

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different framework of NP practice, implementation of advanced clinical procedures and ordering of diagnostics will need to be reviewed under the national registration scheme. Such differences will impact upon an ACNP's practice and their capacity to function effectively around Australia, possibly restricting their employment opportunities. Nationally accepted CPGs for the various categories of practice will need to be established. At the very least, an ACNP's past submitted CPGs which describe their registered scope of practice will need to be approved in all States under a national framework.

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