

**An Exploration of Three New South Wales Nurse Practitioner
Services in 2008**

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Declaration of Originality

This thesis contains no material that has been extracted in whole or in part from a thesis that I have submitted towards the award of any other degree or diploma in any other tertiary institution.

No other person's work has been used without due acknowledgment in the main text of the thesis.

All research procedures reported in the thesis received the approval of the relevant Ethics/Safety Committees.

A handwritten signature in black ink, appearing to read 'S. Jane Allnutt', with a stylized flourish at the end.

S. Jane Allnutt

7/2/2018

Statement of Appreciation

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Abstract

Background

To control increasing health costs, the Australian government initiated a range of health care reforms in the late 1990s. In 2000, the development of the Nurse Practitioner (NP) Service in New South Wales (NSW) was one strategy implemented to improve health care delivery. Supported by legislation, NPs extended their role beyond other nursing roles. The number of NPs in NSW doubled between 2004 and 2007, and NP Services flourished. With little published evidence, research was vital to justify the contribution of this new and rapidly evolving service model to existing health services and the acceptability of the new service model to patients seeking health care. Through interviewing relevant stakeholders and a medical record audit, this study generated knowledge about both the integration of the NP Service with existing health services and patient perceptions of the NP Service.

Aim and Research Objectives

Aim:

Using an intrinsic case study design, the aim of this study was to gain an understanding of the early implementation of the NSW NP Service in 2008.

Specifically, this study sought to answer five research objectives:

- 1) To understand the physical environment and organisational characteristics of the NP Service.
- 2) To investigate the patient care provided by the NP Service.
- 3) To examine NPs' views about their role and its integration into the existing health care team.
- 4) To investigate health professionals' views about the NP Service and its integration into the existing health care team.

- 5) To examine the patients' experiences of the NP Service.

Methods

Using Stake's (1995) classification, this intrinsic case study design was conducted from November 2008 to April 2009. The case was the NP Service and three services were studied as embedded units. Three NPs from three different health services (a mental health NP working in an emergency department, an emergency NP working in the subacute area of an emergency department and a neonatal NP working in neonatal intensive care), who met the inclusion criteria of being authorised and endorsed nurse practitioners, were sampled by geographical and service diversity. Data sources included participant observation, interviews and medical record audit. Participant observation examined the physical and organisational characteristics of the NP Service. The NPs were interviewed about their role and integration with health care teams using face-to-face semi-structured interviews. Semi-structured interviews were also conducted with 5 health professionals and 5 patients per site, selected using maximum variation sampling, about their views and experiences of the NP Service. A medical record audit of 10 consecutive patients (included those interviewed plus an additional 5 patients per site) was undertaken following consultation with the NP, to identify the elements of care provided by the NP. Qualitative data (interviews and participant observation) were analysed using thematic analysis, triangulation and concept modelling. Medical record audit data were analysed descriptively. Enablers and constrainers to the implementation of the NP Service were identified. Results were compared and contrasted within and between the three sites.

Findings:

Medical record audit data showed that all three NPs engaged in therapeutic communication (96.7%), prescribed medications (80%) and referred patients for further assessment (73.3%). From thematic analysis, four themes emerged that reflected the concept of evolution: speciation, adaptation, co-operation and succession. Enabling factors that supported the implementation of the NP Service included the legislated

protection of the NP title and scope of practice, and the development of standards of practice. The perceived overlapping boundaries between the NP and other colleagues on the health team were identified as constrainers during implementation. Findings were consistent across all three sites.

Conclusion:

This thesis provides new knowledge on the implementation and evolution of the NP Service in NSW. New knowledge includes support given (or withheld) to the NP Services, the physical environment and organisational characteristics of each service, the diversity of patient care provided, the perceptions of NPs and health professionals regarding integration of the NP Service with existing services, and patients' understanding of their experience with the NP Service. NPs have worked through the stages of speciation and adaptation to define the scope and work differentiating them from their colleagues. Through co-operation with their colleagues NPs continue to define their specific contribution to the health care team, but they experience ongoing impediments to establishing succession, primarily due to organisational and fiscal constraints within the workplace. Two key recommendations from this study were the need for better communication with patients and health professionals about the role of the NP Service and the need to generate short and long-term workforce strategies to sustain NP Services. If the NP Service is to be viable in the future, health services need to develop comprehensive communication strategies to promote the role of the NP Service and establish strong and formal succession planning programs.

Abbreviations

AANP	American Association of Nurse Practitioners
ACT	Australian Capital Territory
AHPRA	Australian Health Practitioner Regulation Agency
ACNP	Australian College of Nurse Practitioners
AIHW	Australian Institute of Health and Welfare
AMA	Australian Medical Association
ANMAC	Australian Nursing and Midwifery Accreditation Council
ANMB	Australian Nursing and Midwifery Board
ANMC	Australian Nursing and Midwifery Council
APN	Advanced Practice Nurse
APRN	Advanced Practice Registered Nurse
ATS	Australasian Triage Scale
AUSPRAC	Australian Nurse Practitioner Project
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CCRN	Canadian Council of Registered Nurse Regulators
CNA	Canadian Nurses Association
CNC	Clinical Nurse Consultant
CNPI	Canadian Nurse Practitioner Initiative
CNS	Clinical Nurse Specialist
DHS	Department of Human Services
ED	Emergency Department
GP	General Practitioner
ICN	International Council of Nurses
INPAPNN	International NP/Advanced Practice Nursing Network
MMAT	Mixed Methods Appraisal Tool
N ³ ET	National Nursing and Nursing Education Taskforce
NHHRC	National Health and Hospitals Reform Commission
NICU	Neonatal Intensive Care Unit
NMBA	Nursing and Midwifery Board of Australia
NMC	Nursing and Midwifery Council

NMRA	Nursing and Midwifery Regulatory Authorities
NP	Nurse Practitioner
NSW	New South Wales
RCNUK	Royal College of Nursing United Kingdom
RDAA	Rural Doctors Association of Australia
RN	Registered Nurse
SCN	Special Care Nursery
SMO	Senior Medical Officer
UKCC	United Kingdom Central Council for Nursing, Midwifery and Health Visiting
UKDH	United Kingdom Department of Health
UKNMC	United Kingdom Nursing and Midwifery Council
USA	United States of America

Glossary

Advanced Practice Nursing	<i>“Advanced practice nursing (APN) is the term used to define a level of nursing practice that uses comprehensive skills, experience and knowledge in nursing care” (NMBA, 2016).</i>
Australasian Triage Scale (ATS)	The Australian Triage Scale (ATS) in Emergency Departments refers to benchmarked wait times for patients to be assessed by a health provider that was implemented into Australian EDs in 1994. The scale consists of 5 levels, with level 1 being the most critical (resuscitation), and level 5 being the least critical (non-urgent). <i>“Level 1 should see a provider immediately, level 2 within 10 minutes, level 3 within 30 minutes, level 4 within 60 minutes and level 5 within 120 minutes of arrival at the ED” (Australasian Triage Scale, 2000).</i>
Authorisation NSW, SA and Qld use authorised, Victoria use endorsed & ACT + WA use registered	The process through which the nursing regulatory authority sanctions the practice of NP within their jurisdiction. The authorisation process invests legal authority and responsibilities on the person so authorised. <i>“Once an applicant is authorised, he or she will be registered, that is, have his or her details entered on a written record, and the nurse regulatory authority will endorse”, that is, openly approve, of his or her practice as an NP (Gardner et al 2006b).</i>
Candidate	This term used in this thesis to differentiate this student researcher from other researchers
Case	In this study, a case refers to the Nurse Practitioner Service being investigated using an intrinsic case study approach (Stake, 1995, 2006).
Clinical Nurse Consultant	<i>“Clinical nurse consultants are specialist nurses who fulfil a cross-hospital or cross-area or regional role, and who are principally involved in clinical consultancy, review, assessment and research” (NSW Health, 2011).</i>
Clinical Nurse Specialist	<i>“Clinical nurse specialists are nurses who function as resource personnel and sources of expert nursing knowledge within their unit and speciality. They are not as experienced as a Clinical Nurse Consultant” (NSW Health, 2011).</i>
Medical Practitioner	Medical practitioners in Australia are required to be registered with the AHPRA in order to provide medical care. <i>“A person whose primary employment role is to diagnose physical and mental illnesses, disorders and injuries and prescribe medications and treatments that promote or restore good health” (AIHW, 2014b).</i>

Medicare

“Medicare is Australia’s public health insurance scheme, managed by the Federal Government, Department of Health, and administered by the Department of Human Services” (Australian Government - Department of Human Services, 2016).

Nurse Practitioner

NPs in Australia are required to be registered by AHPRA and endorsed as an NP. A NP in Australia is “qualitatively different level of advanced nursing practice to that of the registered nurse due to the additional legislative functions and the regulatory requirements. The requirements include a prescribed educational level, a specified advanced nursing practice experience; and continuing professional development” (NMBA, 2016).

Registered Nurse

Registered nurses in Australia are those who are registered with the national registration agency, the AHPRA. Registration is possible after the completion of a minimum 3-year nursing degree at a Bachelor level (AIHW, 2014c).

Chapter 1: Introduction

Since the early 1990s, considerable change and innovation has occurred in the Australian health workforce, particularly the nursing profession, as the health system has tried to match the supply of health care providers with demand (Gardner & Gardner 2005). The health care system was, and is, increasingly under pressure to deliver high-quality services to an increasingly complex patient cohort without a proportionate increase in resources (Jennings, Clifford, Fox, O'Connell, & Gardner, 2015; MacLellan, Levett-Jones, & Higgins 2015b). The changes were associated with an ageing population and an increasing need for more innovation to address the longevity of patients with complex and chronic conditions. These challenges continue to exist (NSW Department of Health, 2015). The demographic profile of the health care consumer has seen a movement away from patients who were more likely to accept what they were told by the doctor, to consumers who are taking advantage of unprecedented access to information to become more informed about their health, and who do not expect to have to wait for, or travel to receive, most health care services (except perhaps the most specialised services) (Gardner, Gardner, & O'Connell, 2014; Jennings et al., 2015). People with increasing age often have complex health service requirements that generally cannot be met by a single system's disease model (Australian Institute of Health & Welfare [AIHW], 2014a).

Another factor that contributed to the implementation of the Nurse Practitioner (NP) Services was the relatively disproportionate distribution of medical practitioners across New South Wales (NSW) with much fewer numbers being available the further one moves from metropolitan and large urban centres (Gardner & Gardner 2005). With the demand for Australian health care providers exceeding supply, the Australian government commenced funding the implementation process of the NP Service (NSW Department of Health, 1993). Negotiations were undertaken from the early 1990s, and a decade later the first NP was authorised in NSW (Foster, 2010). Even though the NP position had been created, the implementation of fully functioning services evolved slowly. This study was positioned at a period in time during which some services had been implemented, and it sought to gain insight into the issues associated with the early

implementation of the NP Service by studying three authorised NPs working in allocated NP positions.

This chapter offers an overview of the NP Service by providing a definition of ‘nurse practitioner’; a brief synopsis of the international and Australian perspectives related to the early implementation of the NP Service as a model of care; a justification for the thesis; an identification of the aim and objectives; and an explanation of the organisation of the thesis chapters.

1.1 Definition of Nurse Practitioner

The International Council of Nurses (ICN), through the expertise of its International Nurse Practitioner/Advanced Practice Nursing Network, developed a definition that linked the terms NP and Advanced Practice Nurse (APN) (International Council of Nurses [ICN], 2002). The ICN definition did not necessarily help clinicians understand the roles clearly. To date, there is no internationally agreed definition of the term advanced practice nursing (Gardner, Duffield, Doubrovsky, & Adams, 2016b). Consequently, over the decades, the term ‘NP’ has been applied to a range of nursing titles and roles, including, but not limited to, nurse practitioner, specialist, and consultant. The difficulty with combining the definitions of NP and APN meant that APNs were increasingly recognised in many countries as NPs. This has meant that NP and APN positions have become undifferentiated and poorly defined, with a multitude of different titles creating confusion both inside and outside the nursing profession (Gardner, Chang, Duffield, & Doubrovsky, 2013a; Gardner, et al., 2016b). The poor differentiation between the two roles has made comparing the international literature on NPs and their scope of practice difficult. In Australia, the NP legislation passed in 1991 conferring ‘title protection’ has largely prevented this problem (*Nurses & Midwives Act 1991* [NSW]).

In 1992, the Australian Nursing and Midwifery Council (ANMC) was established to work with regulation authorities to facilitate a national approach to nursing and midwifery (Australian Nursing and Midwifery Council [ANMC], 2006). In 2006, some

14 years later, the ANMC obtained state and territory agreement on the national definition of NP that was contemporary and exclusively Australian. In addition, they set up a central record for authorised NPs. The nationally agreed definition of an NP created by the ANMC is:

An NP is a RN [registered nurse] educated and authorised to function autonomously and collaboratively in an advanced and extended clinical role. The NP role includes assessment and management of clients using nursing knowledge and skills and may include but is not limited to the direct referral of patients to other health care professionals, prescribing medications and ordering diagnostic investigations. The NP role is grounded in the nursing profession's values, knowledge, theories and practice and provides innovative and flexible health care delivery that complements other health care providers. The scope of practice of the NP is determined by the context in which the NP is authorised to practise (ANMC, 2006, p.1)

This definition identifies three critical points that are essential to understanding the nature of NPs in Australia. Firstly, the scope of practice is enshrined in legislation, which also protects the professional title, preventing others from using the title without having been awarded it through a formal process (Gardner, Chang, & Duffield, 2007). Accordingly, NPs are legally permitted and supported to provide additional services to those of other registered nurses (RNs) because they have adequately fulfilled the prescribed educational requirements and, in addition, demonstrated their competence in delivering those additional services. The scope of practice for each NP is guided by their practice setting, the requirements of the populations they serve, their level of competence and confidence, and the policies and practices of the service in which they work (Nurses & Midwives Board of Australia [NMBA], 2010). The second critical point is that NPs engage in clinical practice and have significant clinical autonomy and accountability. This may include responsibility for a complete episode of care. The NP's autonomy is embedded within a team approach. This means that the NP works in a multidisciplinary team, ideally in a clinical partnership model, to optimise patient outcomes (Gardner et al., 2007). Finally, the NP role is specific. That is, the skill set that enables an NP to practise in a particular area or sub-specialty is not necessarily

readily transferrable (Gardner et al., 2007). The strength of the NP role comes primarily from their rich history with, and experience of, a particular clinical specialty within nursing. For example, an NP in aged care could not readily transfer to an NP position in neonatal care. The scope of practice for the NPs in acute care in NSW are similar to the scope of practice for these roles in other jurisdictions (Gardner, et al., 2007) Because of the variation of definition in the international literature, the 2006 Australian definition of NP will be used for this thesis because it was the operational definition at the time this research was conducted. The literature review chapter (Chapter 2) will further explore the challenges associated with the NP title.

1.2 Introduction to the Nurse Practitioner Service

As the NP Service in Australia is relatively new compared to other countries the experience of these countries in the implementation of the NP Service could serve as background and comparison information when discussing the implementation of the Australian NP Service. The NP Service was established in the United States of America (USA) in the mid-1960s when there was a shortage of medical doctors (Ford, 1997). The NP position was established by two visionaries—Loretta Ford, an RN, and Dr Henry Silver, a paediatrician—who believed the NP role could improve primary health care, help to balance rising health care costs, increase the number of health care providers and correct the maldistribution of health resources (Ford & Silver, 1967). When NP positions were developed in the USA there was no legal or policy framework to support the position (Diers, 2004). There is no distinct role of the NP in the USA because the NP position is included under the umbrella term of ‘advanced practice RN’ (APRN) which also includes clinical nurse specialists, nurse anaesthetists and nurse-midwife positions (National Council of State Boards of Nursing, 2009) that were established years before NPs were introduced (Diers, 2004; Keeling, 2015). Later, when NPs were classified as APRNs (National Council of State Boards of Nursing, 2009), the clarity about the dimensions of the NP role were blurred. Internationally, the APRN might be considered a precursor to the NP (Keeling, 2015).

Canada also began to establish NP positions in the late 1960s for the same reasons. Like the early development of NP positions in the USA, NP positions established in Canada were initially developed in the absence of any legal or policy infrastructure (DiCenso, Auffrey, Bryant-Lukosius, Donald, Martin-Misener et al., 2007; Sangster-Gormley, Martin-Misener, Downe-Wamboldt, & DiCenso, 2011). NP implementation in Canada experienced a short hiatus soon after the role was established because of a lack of demand for NPs (DiCenso et al., 2007; Worster, Sarco, Thrasher, Fernandes, & Chemeris, 2005). When Canada re-established interest in the NP role a few years later, it was able to use the USA experiences, which allowed its NP Services to re-emerge as stronger models of health care (Worster et al. 2005). The process of NP authorisation in Canada is dependent on where your work with differences occurring between those NPs choosing to work in primary health care and those NPs wanting to work in acute care settings (Sangster-Gormley, et al. 2011). The scope of practice of NPs working in acute care settings is regulated in each province and registering organisations determine what NPs will do by transferring prescribing authority (DiCenso et al., 2007). Before the re-emergence of interest in the role in the late 1980's, Canadian NPs faced the same problems as NPs in the USA. However, unlike their USA counterparts, the re-emergence of the NP role in the Canadian context was characterised by a national approach to legislation, regulation of the role, protection of the NP title and NP education programmes for NPs to integrate into existing health systems and healthcare was determined to be a provincial/territorial responsibility (DiCenso et al., 2007). Therefore a national approach to the management of NPs in Canada could be imposed but the Canadian federal government has some influence on the management of NPs via transfer of capital to the provinces for the financial funding of NP positions (DiCenso et al., 2007).

When the NP position was introduced in the United Kingdom (UK) during the 1980s, the process was influenced by many of the factors that shaped the earlier services developed in the USA and Canada (Maclaine, 1998). The UK NP role was introduced to address a number of issues, such as rising health care costs and the need to improve access to health care services (Harris & Redshaw 1998; Horrocks, Anderson, &

Salisbury, 2002); medical practitioner shortages (Harris & Redshaw 1998; Horrocks, et al., 2002); and the need to reduce the hours of practice of the ‘junior doctors’ (Harris & Redshaw, 1998). The UK Department of Health made changes to its health policy and planned transformation of health services that allowed nurses to challenge the existing health care roles and professional boundaries that were frequently steeped in tradition (Gray, 2016; Richardson & Cuncliffe, 2003).

Prior to the early 1990s, the Australian health workforce structure had remained unchanged for many years. (Parker, Forrest, McCracken, McCrae, & Cox, 2014). The traditional relationship, especially in acute care hospital settings, between the medical, nursing and allied health workforces had not really changed for many years, with doctors frequently considered by the general public, as well as some health administrators and clinicians, as the custodians of health care (Chiarella & McInnes, 2008a; Stein, Watts, & Howell, 1990; Willis, 2006). For patients to gain entry to the health care system, they traditionally access a medical doctor first, and then movement between services, and indeed exiting from them, is often similarly governed by medical decisions (Gardner et al., 2010a).

To address the issues related to the demand and supply of health care services in the 1990s, the Australian state and federal governments attempted to restructure the health workforce by adopting more flexible and responsive models of health service delivery (Productivity Commission, 2005). These models consisted of integrated or multidisciplinary models of care that targeted specific specialities like midwifery care, rural and remote health, and community (Productivity Commission, 2005). This heralded a new health service paradigm, driven by factors related to economics, effectiveness, access, deregulation and health care integration (Duckett, 2005; Lloyd & Ross, 1997). One innovative outcome of these deliberations was the emergence of the Australian NP Service to (a) increase access to health care services (especially for vulnerable communities), (b) improve the timeliness of service responses, and (c) ensure more holistic approaches to patient care, where holistic means that the physical, emotional, social, economic and spiritual needs of the person are considered (Martin-Misener, McNab, Sketris, & Edwards, 2004). In Australia, the NP title is legally protected and regulated (Chang, Gardner, Duffield, & Ramis, 2010; Gardner, et al.,

2016b), which prohibits anyone not holding appropriate qualifications from using the title. This protection has helped to retain clarity about the definition of NP and the NP's scope of practice.

In some respects, Australia was slow to create the NP Service and learned many lessons from the American, Canadian and British experiences; in doing so, Australia avoided many of the drawbacks encountered by international counterparts, including a lack of legislative title and scope of practice guidelines (Gardner, Dunn, Carryer, & Gardner, 2006a). In several countries, including Australia, there has been recognition of the need for, and movement towards, the standardisation and regulation of NPs (Furlong & Smith, 2005; Gardner et. al., 2006; Stanley, Werner, & Apple, 2009; van Soeren, Hurlock-Chorostecki, Goodwin, & Baker, 2008).

NPs are the highest clinical level of the Australian nursing hierarchy (ANMC, 2006). State and territory governments in Australia were integral in the introduction and implementation of policies and legislation to support the development of NP Services. Governments provided scholarships to assist individual nurses to prepare for authorisation, funded NP models of care and endorsed policies to legitimise NP practices across a variety of clinical settings (National Nursing and Nursing Education Taskforce [N³ET], 2005). Until 2010, when nursing and midwifery authorisation became a national registration process, NPs followed a similar practice to RNs and required authorisation by a relevant state or territory health professional regulatory authority as well as the nursing registration authorities in the state/s in which they worked. Since 2010, all NPs are authorised by the Nursing and Midwifery Board of Australia (NMBA) and registered through Australian Health Practitioner Regulation Agency.

This study commenced in November 2008, eight years after the authorisation of the first NP in Australia and over 50 years since the establishment of the inaugural NP role in the USA.

1.3 Justification of the Study

With the establishment of NP Services in NSW, health service planners and administrators realised that research was needed to achieve the full working potential of NPs and to address the maldistribution of health services (Gardner & Gardner, 2005). Australian NPs work in a range of specialty settings in both public and private health care provision. This study is important both in terms of investigating the early implementation of the service and how the NP Service has integrated into the existing, and often overburdened, NSW health care system. The three study sites selected for this study had all been operational as NP Services for at least three years prior to this study commencing. It was felt this period of operation would provide NPs and their teams with enough time to have worked through the “teething problems” associated with establishing a new service model, as well as enable them to identify any ongoing challenges that remained unaddressed.

This is one of the first Australian studies to investigate the early implementation of the NP Service. Using a case study research approach facilitated in-depth exploration of early implementation of the NP Service. Case study design was chosen to enable the candidate to explore and explain the variations in efforts to implement the NP role and the complexity in which NPs practice. Case study design allows the collection of data from various sources, such as participant interviews, document audit and observation, as the candidate seeks to make sense of a phenomenon. This was achieved through direct observation of the NPs as they work, interviewing the NPs and associated medical and nursing colleagues about their perceptions of the NP Service, and asking the patients about their experiences with the NP Service. The medical record audit provided insight into the extended practice of the NP. Critiquing the data obtained from the medical record audit against the NP scope of practice and what NPs say they do strengthened the findings from the other two data sources. With the increased number of NP Services in NSW, supporters of the new model of health care delivery recognised that research to investigate the NP Service was vital (Gardner & Gardner, 2005). The findings of this study will add to the body of knowledge about the early implementation of the NP Service in NSW, and give insight into what patient care is provided by the NPs, how the

service has integrated in the existing health care team and what the patients think about their experience of the service.

1.4 Background to this Study

As NP Services were established and numbers grew both internationally and within Australia, there was an increasing interest in health services research related to the services provided by the NPs, and integration with the existing health care team (Hurlock-Chorostecki, van Soeren, & Goodwin, 2008; van Soeren, et al., 2008; Wallerstedt, Sangare, Bartlett, & Mahoney, 2009).

The dearth of literature related to the Australian NP experience highlighted the urgent need for research in this area to provide evidence to support the sustainability of the service. Specific NP Services were studied in the Australian context but there were no population studies reporting on NPs until the Australian Nurse Practitioner Project (AUSPRAC) was conducted between 2006 and 2010. This was the largest Australian study of NPs to date, and was integral in advancing the understanding of the NP Service in Australia. The project, conducted by Professor Glenn Gardner, Professor Anne Gardner, Professor Sandy Middleton and Professor Phil Della, was funded through an Australian Research Council Linkage Grant. The aim of the project was to provide a comprehensive description of nurse practitioner service delivery in Australia. The four objectives for the AUSPRAC project were:

- 1) To investigate NP Service models and professional profiles in Australia, including scope of practice, access to continuing education, retention rates and demographic information such as geographical location and specialty area.
- 2) To compile and validate the fields for an Australian Institute of Health and Welfare (AIHW) compatible nurse practitioner minimum dataset relevant to workforce planning.
- 3) To conduct a focused examination of nurse practitioner work, the intersection with established service and its collateral impact in the context of the NP clinician, the team, the organisation and the wider health service.

- 4) To provide comprehensive information about the outcomes of nurse practitioner services including health outcomes, patient priorities, resource usage and patient safety.

The project was divided into three phases, which were designed to inform government, as well as health service managers and clinicians, about the Australian NP Service. Phase one of the AUSPRAC study involved profiling the NPs by exploring the demography, scope of practice and barriers to practice of NPs throughout Australia. This phase of the project was recognised as the first national NP census in Australia (Gardner, Gardner, Middleton, & Della, 2009b; Middleton, et al., 2010). Data for Phase 1 was collected using a questionnaire posted to all registered NPs in Australia. AUSPRAC Phase 2 involved investigating the work patterns of the NP through work sampling and case studies (Gardner, et al., 2009b; Middleton, et al., 2010). The work sampling targeted a stratified sample of 30 NPs and involved taking observations of work activity that was used to create a picture of clinician work patterns. The stratification ensured NP representation from all states, rural, regional and metropolitan centres and different specialties (Gardner, et al., 2010a). The case studies component targeted a purposeful sample of 10 NPs who participated in the work sampling cohort and involved an in-depth investigation of the NP Service drawing upon multiple perspectives and data sources such as observation and interviews (Gardner, et al., 2010a). Of the 10 NPs, four came from NSW, one from the Australian Capital Territory (ACT), two from Victoria, and one each from South Australia, Western Australia and Queensland. This phase also involved the analysis of data abstracted from the medical records of 100 patients following NP consultation (Gardner, Gardner, Middleton, Della, & Doubrovsky, 2010b). To achieve this, 10 consecutive patients were recruited from each of the 10 NPs who participated in the case studies component. The third phase of AUSPRAC involved exploring patient outcomes following their consultation with the NP through telephone interviews with patients and NPs (Ahern, Gardner, Gardner, Middleton, & Della, 2013). AUSPRAC was important both in terms of investigating the development and effect of the NP Service in the overburdened Australian health care system and in achieving optimal outcomes for patients. As AUSPRAC ran concurrent with this study, the results will be presented in the discussion chapter (Chapter 5).

The AUSPRAC investigators assigned the candidate three of the four distinct NP Services in NSW to collect the required data for the case study component and the medical record audit (both components connected with Phase 2). The collected data were submitted to the AUSPRAC team as raw data collected by the candidate from the participant observation, interviews and medical record audit. The candidate was then independently responsible for the transformation of this raw data into the new knowledge found in this thesis. In 2010, the AUSPRAC investigators released findings of the medical record audit (Gardner et al., 2010a), but to date have not published findings from Phase 2, the case study component.

1.4.1 Relationship of the Candidate's Study to the Components of AUSPRAC

Although the candidate contributed the data requirements for Phase 2 of AUSPRAC collected from the three participating NP Services in NSW, the data collection for this study from these three NP Services was independently collected and analysed by the candidate using an intrinsic case study approach to achieve a comprehensive understanding of each of the NP Services, drawing upon multiple perspectives and data sources such as observation and interviews. The candidate also independently collected and analysed the data obtained from the medical record audit that contained patients' information following their consultation with one of the three NPs involved in the case study component. Figure 1.1 shows the relationship of the candidate's study to the NSW components that contributed to AUSPRAC.

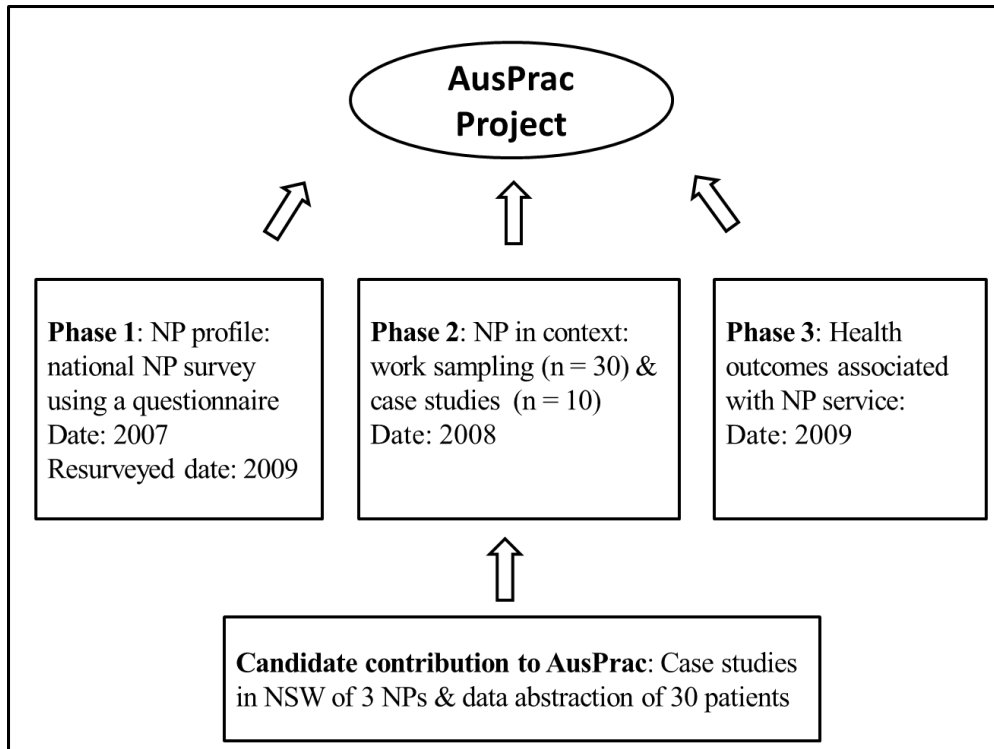


Figure 1.1: The Relationship of the Candidate’s Study to the Components of AUSPRAC

1.5 Nurse Practitioner Service Models

The establishment of NP Service models are intended to target a defined clinical practice area and a specific patient population. The extended practice privileges of the NP are linked to the role and the position of the clinical specialty in which they are authorised to practice (NMBA, 2014). To ensure that the capacity of the NP role is fully realised, it is essential that the scope of practice for individual NP models of care is well defined and provides clarity about the clinical dimensions of their role (Chiarella & McInnes, 2008a).

Innovative NP roles deconstruct traditional professional identities and autonomous practice boundaries. This results in an overlapping of boundaries between medical practitioners and NPs created by the nature of NP work, which includes a mixture of nursing care, diagnostic procedures and intervention-based management, as well as the

prescribing of medicines. Previously, some of these activities were only performed by medical practitioners (Gardner, et al., 2014), which have contributed to the confusion surrounding the NP role and its scope of practice (Gardner et al., 2014). Another factor contributing to the confusion is the fact that there are many NP models of care (Gardner, et al., 2014; Jennings et al., 2015).

Some of the challenges faced by the NP Service as an emerging service model included the size and spread of services, which were small in comparison to established medical services, and such models were either unknown or poorly understood by other health professionals and patients (Allnutt et al., 2010; Hegney, Price, Patterson, Martin-McDonald, & Rees, 2004; Weiland, Mackinlay, & Jelinek, 2010), and were often scrutinised by funding bodies and sceptics seeking to dissect service efficiency and effectiveness (Carryer, Gardner, Dunn, & Gardner, 2007; Cashin & Dunn, 2007; Gardner, et al., 2006a;). The relative lack of understanding about what was different and novel about the NP Service gave rise to this study as the candidate sought to enhance understanding about the early implementation of the NSW NP Service, specifically the work of the NPs, and how their role is understood by colleagues in the health service in which they work, and the experiences of patients who used the service. The literature pertaining to the justification for the NP Service model of health care is explored in more depth at the end of the literature review chapter (Chapter 2).

1.6 Candidate's Position and Reflexivity

Declaring the candidate's position upfront in this introduction is important as it reflects the position adopted by the candidate within the research study being undertaken (Blignault & Ritchie, 2009). The candidate's position can influence all aspects of the research process (Blignault & Ritchie, 2009). Reflexivity is an essential part of the process of the candidate identifying their position in the research study (Schutt, 2012). Reflexivity in qualitative investigations is crucial to find out in what way predispositions of the researcher have impacted on their understanding of what was being observed (Patton, 2015). Therefore, it is generally recommended that researchers,

including candidates, declare their background / position and they may have influenced the research process (Blignault & Ritchie, 2009).

The candidate has a nursing background which will give this study a nursing point of view. This could also have influenced the way in which the study participants contributed to the study, both positively and negatively: positively through the candidates' familiarity with the context of the work environments, and the ability to interpret nursing practice and interact on a professional level; and negatively through the candidate being perceived by the participants as a foreigner in their workspace. A number of factors enabled the candidate to distance herself from the nursing profession to increase her objectivity in the process of this study. The candidate has never worked as a NP; had any involvement with a NP Service; or been employed at any of the three study sites. As a researcher, the candidates' presence during the observation component of this study may have affected behaviour of some of the study participants. During the observation component, the health professional staff associated with all three study sites were well aware of the candidate listening to and watching their interactions. This was documented in the field notes and discussed with the co-supervisor. After some days of observing no further comments about my presence were made by staff, suggesting a reduced influence of the candidates' presence in the setting. This shift in observed behaviour outlines the importance of an extended stay within the study field to enable collection of credible data (Lincoln & Guba, 1985).

The candidate's professional background may have contributed to a level of assumed knowledge and understanding between the candidate and the study participants. This familiarity with the study setting may have influenced how the candidate interacted with study participants and how she may have been perceived as belonging to the study sites, which may have caused a potential for bias. The assumed knowledge and understanding between the candidate and the study participants may have been an advantage in terms of encouraging participant responses, but it may also have caused a bias in that participants may not have explored issues in as much depth because of the assumed knowledge and assumed professional alignment.

Part of reflexivity relates to the researchers' potential influence on the research process and interpretation / analysis of data, also known as self- reflexivity (Schutt, 2012). Self-

reflexivity is a process of examining oneself as a researcher (Patton, 2015). This means the researcher should discuss study site assumptions and experiences with other researchers or in this situation the candidates' supervisors (Schutt, 2012). Regular meetings with PhD supervisors at early stages of the study helped to emphasise where the candidates' approach to writing and interpreting existing literature required a more neutral tone. Awareness of this potential bias, as well as continued discussion and review of findings by the supervisors, prevented the perspective on the data of this study being too individualistic.

Furthermore, the candidate kept a research diary and recorded reflections on the potential influence of personal thoughts and biases on the data. This helped to minimise potential preconceptions and one-sided speculations. Writing a research diary is a common element utilised to support the process of examining oneself as a researcher by monitoring the researchers' thoughts, feelings, reactions and expectations throughout the entire research process (Simons, 2009). These field notes were used during data analysis to identify preconceptions that might have influenced the process of analysis and to re-centre thinking.

1.7 Study Aim

Using an intrinsic case study design (Stake, 1995), the aim of this study was to gain an understanding of the early implementation of the NSW NP Service in 2008.

1.7.1 Research Objectives

There were five research objectives for this study:

1. To understand the physical environment and organisational characteristics of the NP Services.
2. To investigate the patient care provided by the NP Service.
3. To examine NPs' views about their role and its integration into the existing health care team.

4. To investigate health professionals' views about the NP Service and its integration into the existing health care team.
5. To examine patients' experiences of the NP Service.

In this thesis, implementation is defined as a specified set of activities that are designed to put into practice an activity or programme of prescribed dimensions (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Implementation of the NP model of care involved numerous stages, including exploration of its feasibility; submission of recommendations to government to request legislative changes and funding to support the establishment of a service (this stage was not covered by this study); conducting and evaluating pilot studies; publication of the findings; and negotiation for adoption of a service model based on previous lessons learned (Fixsen et al., 2005).

1.8 Organisation of the Thesis

This thesis is organised into five chapters. Following this introduction chapter, the second chapter provides a comprehensive review of the literature relating to the early implementation of the NP Service. The chapter has two sections. Section 1 begins with a historical narrative of the international and national literature pertaining to the NP Service, focusing specifically on the development of the NP in the USA, Canada and the UK before recounting the Australian NP experience. The reason for this specific focus will be detailed in Chapter 2. Following the historical narrative, Section 2 presents a systematic review of the international research (evidence-based) literature, and then provides an integrative review related to the Australian literature, which seeks to collate any existing literature that addresses the areas of interest articulated in the study objectives. At the time the literature review was undertaken in November 2008, there was a dearth of literature relating to NPs in Australia. Since that time, research and publications linked to this area of practice have intensified. To maintain clear timelines and to assist with understanding the contexts of the findings, the literature review was conducted twice: once in 2008 and then repeated in 2016 to capture literature that has

emerged since the period of data collection. The contemporary literature is woven into the discussion and conclusion (Chapter 5).

Chapter 3, the methods chapter, is also divided into two sections. The first section discusses the theory of the case study design. Based on the characteristics of these designs, a justification for the use of Stake's (1995) intrinsic case study approach with embedded sub-units is provided. The second section justifies the application of the intrinsic case study approach to the quantitative and qualitative data findings obtained from field notes, interviews and medical record audit. A concept model was used in the management of the quantitative data.

Chapter 4 reports the findings from the field observations, interviews with the NPs, health professionals and consumers, and the data abstracted from the patient's medical records following the NP consultations. Quantitative data abstracted from the patients' medical records, following their consultation with the NP, was audited and used to contextualise the role of the NP. Themes and sub-themes that were developed from the qualitative data are presented using the linear model of evolution described in Chapter 3.

Chapter 5 combines the discussion and conclusion of this study. It deliberates upon the five research objectives, comparing and contrasting this study's outcomes with the findings of recent national and international literature. This chapter also identifies the strengths and limitations of this study. The conclusion draws together the key findings from this study and provides suggested recommendations for workplace, policy and future research.

The Appendices section of this thesis contains additional materials relevant to this thesis.

Chapter 2: Literature Review

This literature review chapter is divided into two sections. Section 1 contains a narrative review of the historical international and national literature pertaining to the NP Service, expanding on what has already been identified in the introductory chapter (Chapter 1, Section 1.2), specifically targeting the USA, Canadian and UK experiences of implementing the NP Services, as these countries were most similarly resourced to Australia. As the NP Service was relatively new in Australia, Section 2 begins with a systematic review of the international research literature about what was known about the NP Service, with an evidence base. An integrative review is then undertaken to identify what was known about the:

- early implementation of the NP Service
- model of patient care provided by the NP Service
- NPs and health professionals' views about the service and its integration into the existing health care team
- patients' experiences of the NP Service.

The integrative review had several purposes, including to actively link concepts to enhance understanding of the NP Service, identify similar bodies of work conducted related to NP Services, identify knowledge gaps related to the early implementation of the NP Service, and compare and critique existing findings.

Prior to the commencement of the data collection in November 2008, published literature specific to NP Services in Australia was very limited. Following completion of the data collection and in preparation for writing the discussion chapter, the literature review was re-run to capture contemporary literature that had emerged (December 2008 to October 2016). The results of the extended literature review, beyond the period bound by this study, are presented at the end of Section 2 of this chapter. The contemporary literature is integrated with the discussion chapter (Chapter 5), where relevant. This chapter concludes with a justification of the study's aim.

Section 1: Narrative Historical Review of Nurse Practitioner Service— International and National

Exploring the international historical background of the NP Service facilitates an understanding of the successes and failures of the past, and helps to contextualise the development pathway of NP Services in Australia and in NSW. This section concludes with a description of the demographics related to the Australian NP Service and NP numbers at the time of the data collection (2008) and then again in 2016. The rapid growth of NP Services over this period is noted.

2.1 The International Origins of the Nurse Practitioner Service

Although the creation of NP positions has generated a new way for experienced nurses to remain in clinical practice, nurses in the USA (Pearson, 2004), Canada (Worster et al., 2005) and the UK (Maclaine, 1998) have faced challenges becoming endorsed as NPs, including inconsistency regarding scope of practice, lack of coordination and lack of role standardisation. These inconsistencies resulted in insufficient or inconsistent information about the NP workforce to support strategic planning for health services in these countries (Cashin & Dunn 2007; Duffield, Gardner, Chang, & Catling-Paull, 2009). Most of these inconsistencies in the international literature that discuss NPs / Advanced Practice Nurse are still currently relevant (Gardner et al., 2016b).

The following section describes the historical accounts of the NP Service in the USA, Canada and the UK as they contributed important knowledge to the international community on NP Services and the work of these countries was of interest to the Australian Government and service planners because Australia shared elements of the health services with all three countries.

2.1.1 United States of America Nurse Practitioner Service

The inaugural NP position was introduced in the USA in the mid-1960s by two health care visionaries, Loretta Ford, an RN, and Dr Henry Silver, a paediatrician. The NP

position was created to expand the scope of practice of an RN to provide direct services in the locations where medical professionals were absent (Ford & Silver, 1967; Keeling, 2015). Primary health care programmes that assisted disadvantaged populations were on the political agenda (Ford, 1994, 1997; Keeling, 2015; Martsolf, Auerbach, & Arifkhanova, 2015), and so the locations that were targeted to establish NP Services were in the underserved rural areas where the NPs could provide accessible health care services to children and families by reducing their need to travel (Ford & Silver, 1967; Silver, Ford, & Day, 1968; Silver, Ford, & Stearly, 1967). Thus, the NP role was originally developed to address a shortage of primary care doctors in disadvantaged communities (Brown & Grimes, 1995). In a short time, this role proved to be beneficial in the provision of health care that was effective, safe and accessible more generally (Brown & Grimes, 1995).

Since the mid-1960s, more tasks that historically considered the role of the doctor have been competently performed by experienced nurses (Ford & Silver, 1967). Gradually, NPs were accepted into mainstream health care services (Edmunds, 2003; Keeling, 2015; Winson & Fox, 1995) such that by 1997, over 42,000 nurses were licensed as NPs in the USA (American Association of Nurse Practitioners [AANP], 1997). Owing to a geographical clustering of medical professionals in urban areas, the rural and inner city areas were, once again, underserved (Keeling, 2015). With status, lifestyle and income incentives, the medical professionals were moving into specialty areas (Ford, 1994, 1997).

RNs were observed by Ford & Silver (1967) to be engaging mainly with administrative and technical functions and patient care was being delegated to other less qualified nurses. Ford and Silver (1967) reasoned that RNs could be used more effectively given their increased educational status and associated improved knowledge base, and thus given a more independent role in health care delivery. Ford and Silver (1967) also understood the critical role of education in the provision of high-quality services and developed a post-baccalaureate paediatric NP demonstration programme at the University of Colorado (Ford, 1997). The intent of this programme was to increase the knowledge and skills of nurses related to the physical, developmental and psychosocial development of children. Training components included extended practice skills, such

as performing developmental tests, history taking, physical examinations and relevant laboratory procedures, which had traditionally been part of the medical professionals' scope of practice (Ford & Silver, 1967).

In the early stages, Ford and Silver (1967) recognised that for this new role to be accepted and successfully implemented, a partnership with medical professionals was essential. Indeed, Sox, Ginsburg and Scott (1994) noted the success of the NP initiative was largely dependent on personal relationships with medical colleagues. However, the American College of Physicians only supported the role of the NP where it was defined as physician-controlled and the medical staff retained ownership of the patient (Keeling, 2015). This patriarchal model belied the central tenet of autonomy that is fundamental to the NP role.

The lack of a legal framework within which to practise their expanded role left NPs open to legal challenges; for instance, by ordering a mammogram, one NP was charged by the Medical Board of Examiners with 'practising medicine'. The New Jersey Nursing Association successfully challenged this finding when the tribunal ruled that the Medical Board had no authority over nursing (Diers, 2004). Rather than being concerned about NP skills and capability, this case highlighted the rivalry between the different health care providers (Diers, 2004). Cases such as this influenced the development of legislation in some USA states, which created an official supervisory arrangement that gave medical practitioner control over NPs (Diers, 2004; Keeling, 2015). The medical profession were not the only health professionals to oppose establishment of the NP Service. Nurses and nursing organisations in the USA also expressed concern that the NPs were leaving the nursing profession to become "physician's handmaidens" (Edmunds, 2000; Rogers, 1972). Continued resistance to the NP role, seemingly from all sides, thwarted Ford and Silver's vision for the NP to be seen as a collaborative and collegial extension of the multidisciplinary team.

Sharp (1995) described nurses in the USA as politically naive in the early stages of the NP role development. However, each professional challenge saw their growing sophistication in overcoming the obstacles presented to them. Part of this sophistication arose from the establishment of peer groups; the American Academy of NPs and the

American College of NPs were established in 1985 and 1995, respectively (Diers, 2004; Martsof, et al., 2015; Sharp, 1995). Eventually, in 2013, these groups were replaced by a unified NP coalition with a single political voice, known as the American Association of Nurse Practitioners (AANP; AANP, 2016). After creating a single voice for themselves, NPs were joined by other nursing organisations who added strength to that voice, and who assisted NPs as they lobbied for political support (Hain & Fleck, 2014).

After establishing their united voice, USA nurses also realised the need to create consistency in their education programmes and the development of national consistency in the development of educational and other qualifying standards (Diers, 2004; Keeling, 2015). In 1993, NP leaders throughout the USA gathered at a leadership summit to develop a unified approach to meeting all NP objectives, including policy and advocacy development. Shortly after, the National Nurse Practitioner Coalition was formed; this group later became the American Association of Nurse Practitioners (AANP) (Keeling, 2015). This strengthened the identity of the NP profession and made it easier for advocates of the NP Service to promote the profession's causes (Auerhahn, Mezey, Stanley, & Wilson, 2012).

The USA Balanced Budget Act of 1997 approved provider status to NPs so that they could charge Medicare directly for services provided in any clinical setting (Auerhahn, et al., 2012). More recently, the Affordable Care Act was passed in 2010 by the Obama government (Lathrop & Hodnicki, 2014). This Act was the most expansive USA health care reform legislation since 1965 when Medicare and Medicaid were introduced. It provides insurance coverage to millions who previously were uninsured, thus allowing millions of Americans to gain new access to health care (Lathrop & Hodnicki, 2014). This health care reform provided NPs with an extraordinary opportunity to undertake leadership responsibilities in primary care, as well as strengthen preventative services (Lathrop & Hodnicki, 2014). Although the intention of the Affordable Care Act was to improve access to primary care for everyone, it has also increased the need for primary care practitioners, which means that NPs in some settings no longer require the direction of a physician when providing patient health care (Fontenot, 2014). NPs in states that support a full scope of practice are fully independent of any supervision provided by a physician. The negative aspect of the Act is that it does not supersede

each state's lawful delineation of the scope of practice for NPs, meaning that in states that legally require an NP to practice in a reduced or restricted manner, NPs will be ineligible to claim autonomy on the grounds of improving universal access to primary care (Fontenot, 2014). Despite the Act permitting the possibility of more autonomous practice on the part of NPs (Fontenot, 2014), this level of autonomy has found support in only some states and the Act does not prevent particular states from limiting NP scopes of practice; for instance, some states can and have constrained NP autonomy by rendering NPs ineligible to charge Medicare for services provided.

As of November 2014, 19 states supported a "full scope of practice", 19 states supported a "reduced scope of practice", and 12 states supported a "restricted scope of practice" (Hain & Fleck, 2014). Full scope of practice denoted autonomous or independent practice. With full practice authority,

NPs are required by their licensing state to meet educational and practice requirements for licensure, maintain national certification, consult and refer to other healthcare providers per patient/family needs, and be accountable to the public and state board of nursing for meeting the standards of care in practice and professional conduct (AANP, 2016).

Where nurses were not granted full autonomy under their scope of practice, they were said to operate under 'reduced practice', which was defined as a "collaborative practice agreement" with a medical practitioner. This agreement stipulated the scope of practice allowed independently by the NP and the restricted practices that required medical practitioner supervision (Hain & Fleck, 2014). Variations in the scope of practice between different states of the USA had a negative impact on patient care because of the NPs inability to claim financial reimbursement and the restricted practice (Yee, Boukus, Cross, & Samuel, 2013).

Despite ongoing antagonism from the medical profession, expansion of the NP role continued and the numbers of qualified NPs continued to grow steadily. Currently, there are more than 205,000 NPs licensed in the USA (AANP, 2016). In 2016, NPs were licensed in all states, and practised under the specific rules and regulations of the state in which they work. They provide high-quality care in a diversity of locations for urban,

suburban and rural populations, in many types of clinical settings, including hospitals, emergency departments (EDs), nursing homes, education settings such as schools and colleges, and public health departments (AANP, 2016). Ford & Silver's (1967) vision for the NP role in the USA in the mid-1960, and its subsequent evolution, is considered internationally as the stimulus that transformed nursing (Diers, 2004; Keeling, 2015).

2.1.2 Canadian Nurse Practitioner Service

Following on from the establishment of the inaugural NP positions in the USA, Canada began discussions to establish NP positions, also in the late 1960s. The grounds for the Canadian NP role was linked to the skills needed for nurses to do their work in the rural and remote regions of Canada (DiCenso et al., 2007). Nurses working in these communities played a vital part in the evolution of the Canadian NP Service. The first education programme that was developed to prepare nurses to work in isolated outposts in remote areas of northern Canada was used as a foundation for graduate NP studies (DiCenso et al., 2007). Like the USA, Canadian NP positions and associated education programmes were originally established without any legal or policy infrastructure (Worster et al., 2005).

The 1970s saw an increased interest in the NP position in Canada with the funding for NP university programmes being made available, and further research conducted in this area (Fahey-Walsh, 1997). In 1971, the Boudreau Committee produced the *Report of the Committee on Nurse Practitioners*, which recommended establishing NP Services to support primary health care, predominantly in rural and remote Canada (Department of National Health & Welfare, Ottawa, 1972). A joint committee comprising the Canadian Nurses Association (CNA) and Canadian Medical Association (1973) united to produce a statement to support the establishment of the NP position and appropriate university education courses to prepare NPs for a diversity of roles in various demographic locations in Canada (DiCenso et al., 2007). Similar to the experience of the NPs in the USA, Canadian NPs were originally dependent on medical practitioner control in urban settings and, in rural and remote locations where medical practitioners were scarce, the

NP practice was protocol driven (Canadian Institute for Health Information, 2005). NPs worked according to the protocols and policies imposed by their employers rather than according to their own scope of practice as authorised by the provincial licensing board (DiCenso et al., 2007). Any extension of practice beyond that of an RN normally requires delegation of tasks using protocols, medical directives and drug lists that are developed, approved and enforced by physicians (Hurlock-Chorostecki et al. 2008).

There were a range of factors that seemed to converge, resulting in a failure to generate the essential legislative and policy requirements to implement the full NP role. Factors included a perceived excess of doctors and a persistent lack of support from professional organisations, including nursing (DiCenso et al., 2007; Hurlock-Chorostecki et al. 2008), a lack of processes to support financial reimbursement, a lack of consumer awareness and a shortage of funding (Worster et al., 2005). The NP movement came to a standstill in the early 1980s (Canadian Institute for Health Information, 2005) and by 1983 the NP education programme was obsolete and was no longer offered (Nurse Practitioners Association of Ontario, 2005; Worster et al., 2005).

Despite this interruption to the preparation of nurses to become NPs, a small number of employed and educated NPs continued to practise, predominantly in community health centres (DiCenso et al., 2007). A renewed interest in the Canadian NP role occurred in the 1990s, as it was once again seen as an important service model to support the Canadian health care system (Canadian Nurses Association, 2005). Many of the same issues that instigated the movement in the late 1960s triggered the renewed interest in NPs (Canadian Nurses Association, 2005), specifically, health care reform agendas designed to address a more efficient use of resources, with an increased focus on preventative and primary health care (Cummings, Fraser, & Tarlier, 2003; DiCenso et al., 2007; Hurlock-Chorostecki et al., 2008). The continued establishment and success of the NP Services in the USA added to the renewed interest (Canadian Nurses Association, 2005; DiCenso et al., 2007). Importantly, in contrast to the USA, relations between NPs and medical practitioners in Canada were not legislatively restrictive. Instead, NPs were able to function autonomously. Their practices not only responded to doctors, but also were described as autonomous and collaborative with all health care professionals (DiCenso et al., 2007).

In 2005, following the establishment of the Canadian Nurse Practitioner Initiative, the Canadian government invested \$CAD8.9 million to address the lack of coordination with respect to the NP position (Canadian Institute for Health Information, 2005). The Canadian Institute for Health Information released *The Framework for the Sustained Integration of Nurse Practitioners* in 2006. It described the congruence between jurisdictions for the NP scope of practice and the legislation in place in all Canadian provinces and territories to protect the NP title (Canadian Institute for Health Information, 2006). The project was extremely successful and the favourable evaluation had far-reaching effects. Ultimately, the NP role was sustained, allowing improved health care access and health care outcomes for all Canadians (Canadian Nurse Practitioner Initiative, 2006).

In Canada, NPs have approved additional regulatory authority to perform clinical skills that extend beyond the scope of practice of an RN. However, depending on the NPs' specialisation, discrepancies between jurisdictions continue to exist. Legislation was introduced throughout Canada to protect the NP title, meaning that NPs had to be registered to use the designation (Canadian Institute for Health Information, 2006; Canadian Nurses Association, 2006). Issues that Canadian NPs continue to grapple with that created a barrier for full utilisation of their advanced practice role are those of title confusion and the lack of role clarity (Donald, Martin-Misener, Carter, Donald, Kaasalainen, et al., 2013). The Canadian Council of Registered Nurse Regulators (CCRNR) is responsible for “setting the competencies for entry-to-practice, determining standards of practice and licensing requirements; approving educational programmes; and setting the requirements for NP continuing competence in Canada” (Canadian Council of Registered Nurse Regulators [CCRNR], 2016).

In early 2014, the CCRNR began a project seeking to evaluate NP practice in Canada in three practice streams - NP family/all ages; NP (adult); and NP (paediatric) - seeking to garner evidence to support a national approach for NP licensure (CCRNR, 2016). In 2016, the CCRNR released the findings that demonstrated NPs competencies are consistent across all provinces and territories of (CCRNR, 2016). As at December 2014, there were 4,195 licensed NPs practising in 12 provinces or territories across Canada (CCRNR, 2016).

2.1.3 United Kingdom Nurse Practitioner Service

During the 1980s, and 20 years after the genesis of the NP Service in the USA and Canada, the NP position was considered in the UK by the British Health Services (Carnwell & Daly, 2003; Maclaine, 1998). The employment of the NP in the UK health system was inspired by very similar issues to those identified in the USA and Canada (Carnwell & Daly, 2003). Changes to health policies, the introduction of degree programmes in nursing, and the planned improvement of health services in the UK allowed nurses to re-examine and question their traditional roles and professional boundaries (Gray, 2016; Richardson & Cuncliffe, 2003).

The nursing regulatory body at the time, the UKCC, not only recognised the need for continuing professional development, but also the need for different levels of expertise in practice (UKCC, 1992). In 1982, Barbara Stilwell from the University of Birmingham Medical School, began investigating the possibility of extending the RN role (Stilwell, et al., 1987). After visiting the USA and Canada to observe NP training and practice she decided that the UK health system would benefit from such a position (Stilwell, 1981). The NP role was developed in the UK based on the work by Stilwell (1981) and Barbara Burke-Masters (1986), and was essentially underpinned by a need to curb expensive clinical practice models, as well as the need to recognise the work that nurses were already doing, often by stealth (Burke-Masters, 1986). Smith (1992) described how Stilwell, in a primary health care setting, cared for the homeless in London by developing her skills to examine, diagnose and treat a sub-population underserved by medical practitioners. The UK Department of Health (UKDH) indicated in 1989 that new models of health care delivery were being evaluated, and included the role of the NP. However, the UKCC was unwilling to set standards for NPs as they saw such a response would serve to restrict the autonomy and innovation that these advanced practice roles were trying to promote (Gray, 2016). Subsequently, in the absence of necessary regulation and standards, new advanced nursing titles and roles appeared in the UK health care arena (Dowling, Beauchesne, Farrelly, & Murphy, 2013).

The role of the NP in the UK differed from the Canadian and USA experiences in that it was not based on legislation or educational programmes. The first formal course for educating NPs was implemented in 1990 by the UK Royal College of Nursing (Gray, 2016). The lack of minimum education qualifications for NPs resulted in a shift in the nursing model towards a biomedical model targeting the technical and medical aspects of patient care (Barton, Thorne, & Hoptroff, 1999; Walsh, 1999a, 1999b).

By the early 2000s, a clear understanding of advanced nursing was evolving internationally (Pearson & Peels, 2002); in the UK, despite much continuing debate and discussion, there was a failure to achieve a consensus on the definition and role of advanced nursing practice (Por, 2008). This situation was exacerbated by the absence of a regulatory body led from the UKCC or its successor, the Nursing and Midwifery Council (NMC) (Gray, 2016).

With health services in the UK going through a profound transformation, the four chief nursing officers established the Modernising Nursing Careers initiative in 2005/6, and in the report they released in 2006, the need for advanced practice and the standardisation of advanced-level skills was prioritised (Department of Health, UK, 2006). The Scottish toolkit (Scottish Government, 2008), developed through this initiative, drew together work from the ICN, the Royal College of Nursing (RCNUK), the Association of Advanced Nursing Practice Educators and the Nursing and Midwifery Council (UKNMC) to recommend a consensus definition of advanced-level practice and advocated a master's degree for entry to ANP level. Following the release of this report, it was decided that the UKNMC would seek endorsement from the Privy Council to create a further subdivision on the nurses' register making '*nurse practitioner*' a registerable qualification (Brook & Rushforth, 2011). In 2008, the RCNUK noted that there was no explicit definition of advanced nurse practitioner practice. This often denied NPs the privileges that other health care professionals received. The initial educational competencies for NPs followed, (Blair & Jansen, 2015; RCN UK, 2008, revised 2012) and were established around consultancy skills, minor injury management, chronic disease management, physical examination, disease screening, health education and counselling. These competencies facilitated

development of new education programmes based on clear criteria that were readily accepted in the UK as '*a gold standard*' (Gray, 2016).

The Council for Healthcare Regulatory Excellence (CHRE; 2009) subsequently argued against regulation by stating that practitioners are accountable for not practising beyond the sphere of their knowledge, skill and competence (CHRE, 2009). The following year, however, the UKDH (2010a) released a position statement on advanced nursing practice in the National Health Service, describing it as being provided by RNs who have studied at the master's level, and who meet 28 elements grouped into four themes: clinical care/ practice, quality improvement, leadership and collaborative practice, developing practice, and developing oneself and others. These work alongside the NMC code (2008) that covered the professional standards of practice and behaviour that all nurses and midwives are expected to follow.

The NP position was subsequently introduced and the title NP has featured in the UK nursing literature since then (Horrocks et al., 2002; Stilwell, 1981; Stilwell, Greenfield, Drury, & Hull, 1987; Richardson & Cuncliffe, 2003; Walsh, 2001). A particular problem for the UK was that the title of NP was not, and is still not, protected. The title implies an experienced and extended role for nurses, particularly when understood in the international context (Brook & Rushforth, 2011; Gray, 2016). A lack of protection of the title in the UK has resulted in misuse of the title by health professionals and health services, meaning that any nurse can adopt the title whether or not they are adequately prepared for the role (RCNUK, 2005). The lack of title protection has also resulted in a lack of specific standards and training programmes for NPs (Crumbie, 2001; Gray, 2016; Mulholland, 2001; United Kingdom Central Council for Nursing, Midwifery and Health Visiting 1992). Both deficits have made the creation of a registerable qualification difficult and, moreover, they have made it difficult to create a benchmark for NP positions or services in the UK.

Despite the fact that the Royal College of Nursing defined the boundaries and core competencies for NPs in 2002, which they adapted from the USA, agreement among health care providers regarding the professional practice of NPs for regulation of the NP title is still pending (Blair & Jansen, 2015; RCNUK, 2005). A survey undertaken by the

Royal College of Nursing's Nurse Practitioner Association in 2006 found that NPs used a number of titles to describe their role, including NP generic or primary care, NP general practice, NP specialist and advanced NP. At the time, NPs were frequently hired by general practitioners (GPs) and the numbers of NPs were equally spread between the National Health Service Trusts (49%) and general practice (47%).

Despite years of debate and discussion, there was still no legislation, regulation or protection for the NP title in the UK almost 40 years after introduction of the position (Brook & Rushforth, 2011; Kleinpell et al., 2014). Theoretically, any nurse in the UK could use the title nurse practitioner (Kleinpell, et al., 2014), thus confounding the understanding of the work that is undertaken by an NP, and making contrasts and comparisons with similar positions in other countries difficult (Brook & Rushforth, 2011). Despite assurances by the NMC that it intended to work towards regulating the NP role (RCNUK, 2005), this still has not occurred more than a decade later (Baileff, 2007; Brook & Rushforth, 2011). As reported previously, the continued confusion about the NP title in the UK, resulting from a lack of regulation, means there is very little accurate data available regarding NP numbers in the UK (Baileff, 2007; Brook & Rushforth, 2011).

The unregulated and flexible character of the APN within the UK differs from similar positions in other Western countries. On one hand, there is evidence that APNs are improving patient care through innovative service models, with no unreasonable barriers to limit their scope of practice (Kleinpell, et al., 2014). However, there is still no systematic understanding of the precise work that NPs (or APNs) are undertaking, of the practices that they should be employing, of the amounts they should be earning or of what their development and training needs may be (Brook & Rushforth, 2011). One author recently suggested that many advanced nursing roles in the UK are failing to show the full potential of advanced nursing practice and instead have established themselves into a restrictive medical-substitution model (Gray, 2016). Gray (2016) described four sub-roles that are fundamental to advancing practice but which are not being demonstrated. These included innovation, education, research and clinical leadership. These deficits resulted in insufficient information about the NP workforce to support strategic planning for health services in the UK.

2.1.4 The Australian Origins of the Nurse Practitioner Service

Having established the international origins of the NP Service, the next section will report the chronology of the Australian experience. There has been much deliberation and debate, both inside and external to the nursing profession (Nutley, Walter, & Davies, 2003; Wood, Ferlie, & Fitzgerald, 1998) regarding implementation of the NP Service in Australia. Sometimes, because of the absence of a well-established definition and acceptance of the NP scope of practice (Della, 2007), the focus of debate was redirected from the opportunities available to NPs and the health care delivery system. A timeline of the significant events in the development and implementation of the NP Service in Australia is presented in Appendix 1.

From 1970 to 1990

The NP role was under development for almost two decades in Australia and was described by Gardner (2004) as a significant development in nursing, and health care more generally, in Australia. An extended role for nurses in Australia was being contemplated as early as 1972 (Coxhead, 1993; Slater, 1973). It was later, in 1990, at the NSW Nurses Association annual conference where the role of the NP was first discussed as part of the health agenda (NSW Department of Health, 1994). The then Minister for Health, Hon P.E.J. Collins, MP (NSW Minister for Health, Deputy Leader of the Parliamentary Liberal Party and Attorney General) expressed support for independent nursing practice and the NP Service was considered a legitimate model for the delivery of health care in Australia (NSW Department of Health, 1994).

1991 to 2000

In 1991, following the NSW Nurses Association conference, the NSW Chief Nurse responded to a government request to establish an Independent Nurse Practitioner taskforce to consider the feasibility of establishing an NP position in NSW (NSW Department of Health, 1992). There was agreement by the taskforce that the preferred title was 'nurse practitioner' over 'independent nurse practitioner', to reinforce the notion that collaboration was integral to the role (NSW Department of Health, 1992).

When the discussion regarding the development of the NP Service in NSW began, there were no official structures for registration, regulation or education of NPs. In health facilities in rural or remote locations in Australia, nurses who had been working in ‘de facto NP’ roles for many years and were starting to identify themselves as NPs (Adrian & O’Connell, 2000). In the middle of 1992, a Stage 1 Discussion Paper was released by a working party examining the issues surrounding the introduction of NPs and it found that nursing resources could be better utilised (NSW Department of Health, 1992). Reforms were suggested by the working party to address ordering diagnostic procedures and prescribing medications (Gardner, et al., 2006a).

Late in 1993, a Stage 2 Discussion Paper was released recommending that a number of pilot projects that were described in the first report needed to be established within six months and completed within 18 months (NSW Department of Health, 1993). This led to pilot projects being implemented from 1993 to 1995 to investigate NP models of care in clinical domains such as primary care in rural and metropolitan health settings (NSW Department of Health, 1993). More information on the Australian government-sponsored NP pilot projects can be found in Section 2 (see 2.3.5). The combination of geography and population in NSW presented health system planners with unique challenges with respect to health care access and equity for the population. During the process of negotiation between the NSW Department of Health and representative groups from the nursing and medical professions, a compromise was reached concerning geographical area of practice for NPs (Chiarella, 1996; NSW Department of Health, 1996).

Around the same time as other states were implementing NP projects, NSW was amending *The NSW Nurses and Midwives Act, 1991* to reflect the new nursing classification. Legislative changes titled the *Nurses Amendment (Nurse Practitioners) Act 1998* was introduced in the NSW Parliament and changes included the authorisation of nurses to practise as NPs as well as amendment to the *Poisons and Therapeutic Goods Act 1966* to enable NPs to be authorised to possess, use, supply and prescribe certain substances (NSW Government, 1999). The new *NSW Nurses Amendment (Nurse Practitioners) Act (1998)* permitted the NSW Nurses Registration Board to authorise areas of specialist nursing practice for addition on the register and to determine and

recognise special practice areas i.e. NP (NSW Government, 2001). Prior to the legislation for and regulation of NPs, establishment of positions was almost always linked to pilot projects and steering committees.

Each state worked through its own legislative hurdles, such as enabling NP prescribing rights by modifying their Poisons Act (Driscoll, Worrall-Carter, O'Reilly, & Stewart, 2005; McCallam Pardey, 2004). In NSW, it was up to each of the then eight Area Health Services to determine the need for an NP in their area. All local stakeholders, including consumers, hospitals, community health centres and the medical profession, were required to agree on the need for an NP (NSW Health Department, 2000; NSW Nurses Registration Board, 1999). Where the need for such a position was agreed upon, the Area Health Service then determined the duties of the NP and submitted a proposal to the NSW Department of Health, seeking approval for establishment of the new position. If the proposal was supported, it was then forwarded to the NSW Nurses Board for authorisation, and the position was advertised. A peculiarity of the process was that the NSW Nurses Board could authorise the creation of an NP regardless of whether or not there was an actual position available to recruit to. An authorised NP was unable to practice as an NP until she or he was employed into a designated position (NSW Nurses Registration Board, 1999). Because of the lack of designated positions across NSW, this resulted in nurses being authorised with no official position to fill. In late 1999, the NP authorisation process was finalised by NSW the Nurses' Registration Board (Gardner & Gardner, 2005). In 2000, NSW was the first Australian state to introduce NPs (Gardner, 2004).

By looking to international developments to guide innovation, Australian nurse clinicians and service leaders proposed and achieved a significant change in the history of the Australian health care workforce (Gardner, Gardner, Middleton, & Della, 2009a). The driver for the establishment of the NP Service was deeply ingrained in nursing's commitment to patient-centred care and patient-centred health services. The work of nursing reformists was aligned with agendas of early change agents in governments (Gardner et al. 2009a). Consistent with events in the USA, Canada and the UK that established new a clinical career structure of the NP, Australia was also exposed to a variety of health- and nursing-specific agendas that influenced the circumstances and

opportunities for the NP. With bi-partisan government support for the new NP role, nursing leaders and senior clinical nurses were prepared to take on the challenge to develop the NP Service to its inception in NSW (Gardner, 2004).

2001 to 2008

In 2002, a Senate Inquiry into Nursing recommended that both commonwealth and state governments introduce the role of NP (Commonwealth of Australia, 2002). As with the international experience, not all health professionals supported this recommendation, many of whom expressed concern the NP Service “would provide a service similar to what has been found in the third world health care” (Sweet, 2005, p. 22). The Australian Medical Association (AMA) acknowledged that nursing practice had changed and that nurse training programmes equipped nurses with more knowledge and expertise in specialist areas than was previously the case. However, they disagreed with giving NPs the authority to prescribe medications, initiate diagnostic tests, provide referrals to medical specialists and have admitting privileges. Their reasons ranged from inadequate educational preparation to the potential for unsafe prescribing and fragmentation of the health care system (Victorian Government Department of Human Services, 2000). A summary of the government-sponsored NP pilot projects in Australia can be found in Appendix 13).

State and Territory Nurse Practitioner Taskforce Reports

Once it commenced, the uptake of NP positions in Australia was relatively rapid compared with that of international counterparts. Following the early work commenced in NSW, other state Nursing Registration Boards quickly built on those foundations. All Australian states and territories achieved official recognition for NP practice, including a legislative framework, within nine years (Gardner et al, 2009a). The release of state and territory government NP taskforce reports coincided with the gradual introduction of NPs throughout Australia. Legislation for the NP role was passed in every state and territory in Australia by 2007, despite opposition from some factions: NSW in 1998, Victoria in 2000, South Australia and the ACT in 2002, Western Australia in 2003,

Tasmania in 2005 and Northern Territory in 2007 (Foster, 2010). In 2005, because of an amendment to their existing Nursing Act, the Queensland Nursing Council was able to authorise NPs in Queensland under the existing Act (Dunn, 2007). Importantly, legislative protection in all Australian states and territories prevented use of the title 'nurse practitioner' by anyone without authorisation of a nursing regulatory body (Dunn, 2007).

The Productivity Commission Report on Australia's Health Workforce, released in 2005, highlighted the need for a more sustainable, responsive workforce while being committed to quality outcomes for consumers (Productivity Commission, 2005). The report supported the needs of rural and remote settings and special needs sectors to develop new models of care to address the shortages of health care professionals:

... a lost opportunity for greater inter-jurisdictional coordination and consistent approach to the development and implementation of the NP role across Australia (Commonwealth of Australia, 2005, p. 55).

The evolution of the NP Service saw NPs placed strategically as a solution to address some of these workforce and service planning challenges. In 2005, the National Nursing and Nursing Education Taskforce (N³ET) released their Scopes of Practice Commentary Paper, and recommended national consistency for the NP scope of practice (National Nursing and Nursing Education Taskforce [N³ET], 2005). Each state and territory in Australia was required to justify decisions made in relation to the development and implementation of the NP role, which mirrored the introduction of the NP Service of the USA and Canada. States and territories needed to provide justification of the different positions and perceptions of a range of stakeholders, many of whom were not nurses (N³ET, 2005). Implementation of the role in each of the jurisdictions was prolonged and challenging due to these disparate positions (N³ET, 2005). Despite this, growth in numbers of registered NPs has been steady since the first NPs were authorised in 2000 (N³ET, 2005) (see Section 2.4.1: Growth of the NP numbers). At the time of data collection for this study (2008), there was still no nationally consistent process to authorise and then employ NPs.

The NMBA determined that in order to work as an NP in Australia, the NP must be endorsed by the NMBA (NMBA, 2008). Endorsement is dependent upon the potential NP being able to meet a number of criteria, including holding general registration as a nurse with no conditions relating to unsatisfactory professional performance or professional misconduct; the requisite amount of experience in advanced practice nursing; and an NP qualification at the master's level, or educational equivalence, as determined by the Board (NMBA, 2008). Importantly, the NMBA endorsement allows an NP to work within their specific scope of practice.

Following the N³ET recommendation, and in order to assist NPs to deliver safe and competent care, the ANMC collaborated with the state and territory Nursing and Midwifery Regulatory Authorities (NMRAs) to create national competencies for NPs (ANMC, 2006). The national competency standards for NPs, released in 2006 and endorsed by all NMRAs, continued to build on the core competency standards for RNs and midwives, as well as the advanced nursing practice competency standards (ANMC, 2006).

National Competencies for Nurse Practitioners

The NP scope of practice allows NPs to perform tasks that have historically been undertaken by doctors (such as ordering diagnostic investigations and prescribing medications). NPs are required as “clinical experts” to carry out these tasks “to the same exacting standards as medical staff and, as such, to demonstrate appropriate accountability and responsibility” (ANMC, 2007). Collaborating with state and territory NMRAs, the ANMC produced the national competency levels for NPs in 2006 (ANMC, 2007). See Table 2.1 for a list of the 2006 NP Standards.

Table 2.1: 2006 NP Standards

Standard 1	Dynamic practice that incorporates application of high-level knowledge and skills in extended practice across stable, unpredictable and complex situations.
Standard 2	Professional efficacy whereby practice is structured in a nursing model and enhanced by autonomy and accountability.
Standard 3	Clinical leadership that influences and progresses clinical care, policy and collaboration through all levels of health service.

(ANMC, 2007)

The competencies are sub-sections of the standards and are listed in Table 2.2. These standards and competencies provide health service providers' NPs with a framework for assessing NP competence. Apart from using these competencies as part of the renewal of licence process for NPs in all MNRAs, they also identify the standard of practice a consumer consulting an NP can expect (ANMC, 2007). On 1 January 2014, the 2006 national competency standards for NPs were replaced with the NP standards for practice (NMBA, 2014).

Table 2.2: 2006 NP Competencies

Standard 1	
Competency 1.1	Conducts advanced comprehensive and holistic health assessment relevant to a specialist field of nursing practice.
Competency 1.2	Demonstrates a high level of confidence and clinical proficiency in carrying out a range of procedures, treatments and interventions that are evidence-based and informed by specialist knowledge.
Competency 1.3	Has the capacity to use the knowledge and skills of extended practice competencies in complex and unfamiliar environments.
Competency 1.4	Demonstrates skills in accessing established and evolving knowledge in clinical and social sciences, and the application of this knowledge to patient care and the education of others.
Standard 2	
Competency 2.1	Applies extended practice competencies within a nursing model of practice.
Competency 2.2	Establishes therapeutic links with the patient/client/community that recognise and respect cultural identity and lifestyle choices.
Competency 2.3	Is proactive in conducting clinical service that is enhanced and extended by autonomous and accountable practice.
Standard 3	
Competency 3.1	Engages in and leads clinical collaboration that optimise outcomes for patients/clients/communities.
Competency 3.2	Engages in and leads informed critique and influence at the systems level of health care.

(ANMC, 2007).

Of note, the new 2014 NP standards make no reference to the terms of advanced or extended roles specific to NPs (Masso & Thompson, 2014). Advanced nursing practice is more correctly considered a recognisable level of practice rather than a role description (NMBA, 2014). As competencies are generally used by education providers for education-based professional degrees, O’Connell, Gardner and Coyer (2014) indicated that competencies are generally appropriate descriptors for professionals who work in “stable environments with familiar problems”. Given that many NPs work in changeable environments, they need to have skills that can be adapted to different clinical situations (O’Connell et al., 2014).

Obstacles to the Establishment of the Nurse Practitioner Service in Australia

There were two main obstacles to the establishment of the NP Service in Australia. Firstly, there was significant opposition to inaugurating the NP Services, and secondly, there was a lack of clarity around the NP title, role definition and function.

From the beginning, there has been strong opposition to the establishment of the NP Service. As previously indicated, two of the strongest critics were the AMA and the Rural Doctors Association of Australia (RDAA). In a statement released in the media in December 2000, the AMA president stated, “the AMA does not support a role for the independent NP” (Pollard, 2005, p. 16). However, this invited discussion about a collaborative NP model. The AMA and RDAA were both concerned that NPs would hijack unfilled medical practitioner positions in rural and remote Australia (Pollard, 2005), limiting future opportunities for medical staff. In early 2007, a quote appeared in *The Australian* citing the AMA president: “they don’t seem to get the fact that they don’t have the training and if they are pretending to be doctors, I invite NPs to go to medical school and to do the training required” (Cresswell, 2008, p. 28). Arguments like these from the AMA and similar ones made by the RDAA appeared to be focused on protecting the boundaries and work of doctors and not on the real issue of how to meet the needs of an already overstretched health system. NPs are no different from other health professionals: they are authorised to work within a defined scope of practice and to established standards to provide the best possible care to Australian consumers (Lumby, 2005). Further, Lumby (2005) stated that the AMA and RDAA appeared to

portray NPs as providing inferior care and treatment but were unable to provide any evidence to support their claims.

Not all medical practitioners supported the views expressed by the AMA and the RDAA. Lumby (2005) reported that the Doctors Reform Society president asked the federal government to challenge the stance of the AMA and proceed with the recommendations of the Productivity Commission. The Director of the Australian Health Policy Institute, Dr Stephen Leeder, was quoted in the *Sydney Morning Herald* to have stated that the AMA had a:

... serious misunderstanding of what an NP does. They are simply a nurse who has been trained to be a senior, autonomous, capable person—it is just silly and out of date to say a NP will usurp a doctor's role. It is an insult to nurses to take that view (Leeder, as cited in Pollard, 2005, p. 12).

Interestingly, the AMA was prepared to support “nurses” working in a general practice under the supervision of a medical practitioner (i.e., practice nurses; Australian Medical Association [AMA], 2010).

In summary, strong opposition to the development of the NP Service has been consistently levelled by a large fraction of the medical fraternity of Australia who argued that appointment of NPs would limit pathways for medical staff (Dunn, 2007; Pollard, 2005). Despite these assertions, NPs historically and currently are employed in rural and remote areas of Australia where medical practitioners are scarce, meaning NPs often work without the backing of medical practitioners (Dunn, 2007). The argument related to limited potential medical appointments if NPs were given positions was flawed in the sense that the medical fraternity offered no alternative to ensure communities without local medical support had a way to have their health needs met in a timely fashion until a medical officer became available to take up a rural posting. Dunn (2007) asserted that NPs did not pose a threat to the medical fraternity; instead, they were adjunct to medical practitioners. Inter-professional collaboration, support and mentorship have been identified as the essential ingredients for NPs to successfully transition into the Australian health care system (Cusson & Strange, 2008; Fleming & Carberry, 2011; MacLellan, Higgins, & Levett-Jones, 2015a; Yeager & Menachemi

2011). Medical opposition to the development of the NP Service was not unique to Australia (MacLellan et al., 2015a). The USA (Elsom, Happell, & Manias, 2009; Miller, Snyder, & Lindeke, 2005) and Canada (Sullivan-Bentz et al., 2010) have experienced and continue to experience opposition to and antagonism against NP positions.

The second obstacle is the confusion around the NP title, role definition and function that has prevented individuals and organisations from establishing the NP Service (Li, et al., 2013). As indicated in the introductory chapter (Chapter 1), the international literature is plagued by an inconsistent assortment of terms, definitions and roles. There are repeated references in the literature to “confusion” over definitions and scope of practice of APNs or NPs (Dowling, Beauchesne et al., 2013; Duffield et al., 2009; Gardner et al., 2006a). Difficulties have been experienced establishing the roles of NPs in both Canada (CNA, 2004) and the UK (Pearson, 2004), where NP development has been fraught with inconsistency, lack of coordination and little role standardisation. This has resulted in insufficient information about the NP workforce to support strategic planning for health services in these countries.

There is a substantial body of literature dedicated to exploring confusion surrounding the term ‘advanced practice’ related to the NP (Betts, 2007; Callaghan, 2007; Duffield, et al., 2009; Gardner et al., 2016b; Rose, Waterman, & Tullo, 1997; Ruel & Motyka, 2009; Schober & Affara, 2006). The literature uses the terms ‘extended’ and ‘expanded’ interchangeably to describe practice (Commonwealth of Australia, 2005); however, in Australia, these terms are generally considered as components of advanced practice (Masso & Thompson, 2014). The term advanced practice originated in the USA and found its way into the Australian literature around 2005 (Gardner et al., 2007).

Despite the ongoing debate regarding clarification of titles, there is agreement that the NP role is evolving internationally as the most significant of the advanced practice roles in nursing (Gardner et al., 2016b; Keeling, 2015; Reveley, 2001). Mantzoukas and Watkinson (2007) believed the confusion partly arose from the application of the term ‘advanced practice’ and added to the confusion by using the term ‘advanced nurse practitioner’.

To facilitate an understanding of emerging NPs and advanced practice nursing roles globally, and to guide role development, the ICN, through the expertise of its International NP/Advanced Practice Nursing Network, developed the following definition:

A Nurse Practitioner/APN is a RN who has acquired the expert knowledge base, complex decision making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master's degree is recommended for entry level (ICN, 2002, p. 1).

From an Australian perspective, this definition led to more confusion in the use of the terms linked to advanced practice roles rather than to the provision of clarity (Gardner et al., 2016b). Historically, medical practitioners were responsible for *curing* (or managing care in the case of diseases where a cure may not be possible) and nurses for *caring* for patients (Chiarella, 1998). Within Australia, there was an initial lack of consensus about the definition of NP because each state and territory established their own NP Services and operated with a different definition of the NP (Gardner, Gardner, & Proctor, 2004). However, when national registration was introduced in 2010 these differences disappeared.

In Australia, the NP Standards Project (Gardner et al., 2004) collated and examined the definitions of NP, APN, extended practice and other nomenclature developed to describe the various roles and practice scopes of nurses and identified the elements common to all. The first element differentiating the NP from other extended practice roles, such as the advanced practice role, is that the legislatively protected scope of practice for the Australian NP is subject to distinct practice rights (Gardner, 2004). Extended practice is defined by those components of nursing activity that an NP can perform under legislation but that are outside the scope of practice for an RN. With a scope of practice incorporating these extended practice activities, the NP functions in a space incorporating both traditional medical and nursing activities (Gardner et al., 2004). In Australia, the title of NP is protected by legislation, making it illegal for clinicians to call themselves an NP unless they have been awarded that title following

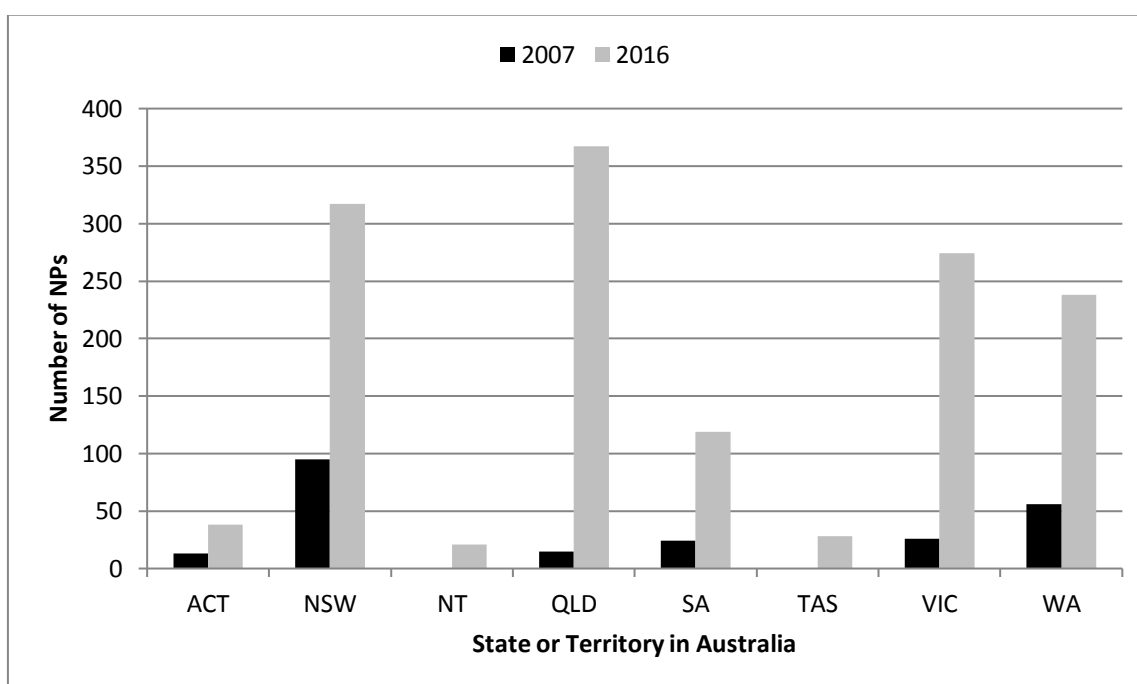
additional formal educational studies. This legislation has only recently occurred in Canada (CCRN, 2016).

The second element that differentiated NP practice was the ability for NPs to engage in clinical practice with significant accountability and clinical autonomy, incorporating responsibility for comprehensive episodes of care (Gardner et al., 2004). The roles of NPs working in an acute care setting are different in relation to team integration (Gardner & Gardner, 2005) because other nursing positions are generally situated within a team and afforded limited autonomy, usually requiring work under the direction of a medical officer. Conversely, an NP may still work in a multidisciplinary team, but will tend more towards clinical partnerships with other health professionals such as GPs or hospital specialists. Unlike other nursing positions, the NP has an autonomous role focused on the delivery of health care within a prescribed scope of collaborative practice (Gardner et al., 2004). Another element of differentiation is that NP practice is firmly located within the nursing model (Gardner et al., 2004). However, a significant consideration is that the international broad view of the term NP and the lack of consistency of the NP scope of practice make it difficult to compare research outcomes from the NP literature (Gardner & Gardner, 2005).

In Australia, unlike the USA and the UK, there are clear professional boundaries between NPs and other nursing roles, even though the actual features that define an NP initially differed between the state and territory government NP taskforce reports until national registration was introduced in 2010 (NMBA, 2010). While there is some standardisation in the definition and competency levels for NPs there is no equivalent level of consistency for other advanced practice nursing roles (Duffield et al., 2009). In preparation for national registration, the ANMC created a national NP definition in 2006. This was further developed in 2014. Included in the new 2014 NP standards was the new, simplified definition of the NP (NMBA, 2014), which appears in the introductory chapter (Chapter 1) of this thesis. Making an important contribution to resolving the international debate over the confusion between the different APN roles, a recent Australian research publication verified that these roles are clearly defined and distinct by using a validated instrument, the Advanced Practice Role Delineation tool (Gardner et al., 2016b).

Nurse Practitioner Service Demographic in Australia

In June 2007, there were approximately 230 NPs nationally (see Figure 2.1). There may also have been further NPs that were authorised but not employed (as previously indicated, there were more nurses authorised than authorised positions for them to fill). In some jurisdictions, the approval and/or funding of NP positions was regulated by the government. Since 2007, the number of authorised NPs has increased significantly to 1,418 NP nationally. Tasmania and the Northern Territory both authorised their first NPs during 2008. Figure 2.1 shows the numbers of NPs authorised to practise in each state and territory in June 2007 (NMBA, 2008) and June 2016 (NMBA, 2016). In 2016, 16 NPs did not indicate their principal place of practice and are therefore not represented in Figure 2.1.

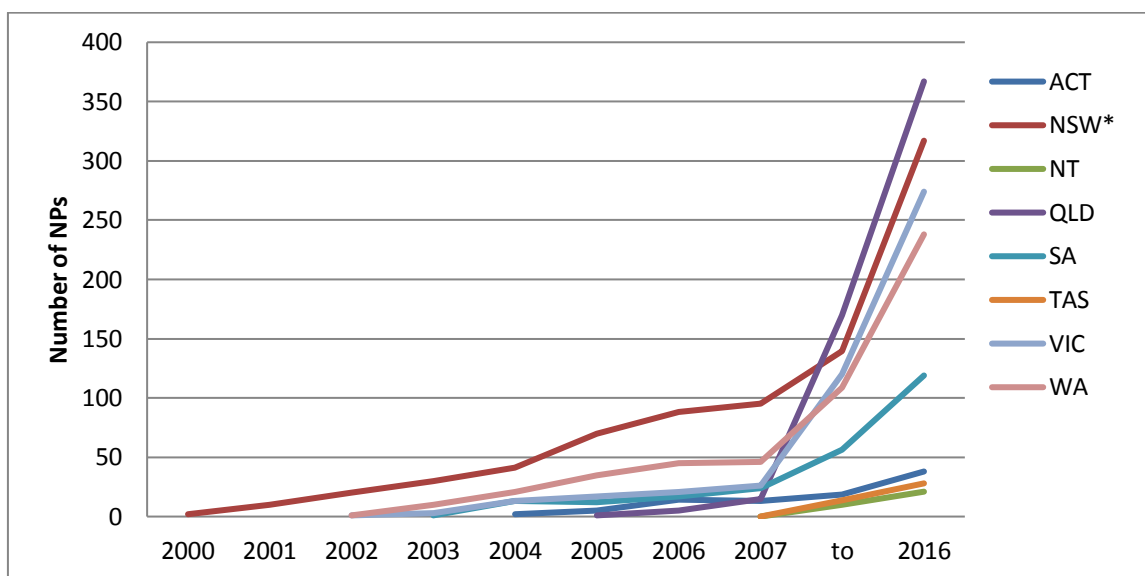


Source: State & Territory Nurses Registration Board (2007); Australian Health Practitioner Regulation Agency (2016)

Figure 2.1: NPs Authorised in Each State or Territory in June 2007 and June 2016

Growth of Nurse Practitioner Numbers

The first NPs were authorised in December 2000. By June 2007, the number of NPs was small; however, their rate of increase since that time has been exponential (see Figure 2.2). In June 2007, there were 230 authorised NPs nationally. By June 2016 this number had risen to 1,418 authorised NPs. Figure 2.2 shows the cumulative numbers of NPs across Australia to June 2007 and June 2016.



*There is one Midwifery Practitioner in NSW

Source: State & Territory Nurses Registration Board (2007); Australian Health Practitioner Regulation Agency (2016)

Figure 2.2: Cumulative Numbers of NPs Across Australia to June 2007 and June 2016

Locations of Nurse Practitioner Services Nationally

Twelve months prior to the commencement of this study, AUSPRAC conducted the first national census of Australian NPs in 2007 (Gardner et al., 2009b), and two years later, in 2009, they conducted a repeat census (Middleton, Gardner, Gardner, & Della, 2011). Results described NPs working in a variety of clinical settings—a significant change to the narrow range of clinical specialties they were initially piloted in. Most of

the NPs were employed in public health services in both inpatient and outpatient areas of hospitals. Table 2.3 shows NP employment profiles identifying the top 10 areas of NP practice in Australia (Middleton et al., 2011).

Table 2.3: Top 10 Areas of NP Practice Nationally in June 2007 and June 2009

Top ten areas	2007	2009
	n = 145 n (%)	n = 208 n (%)
1 Emergency	39 (26.9%)	63 (30.3%)
2 Mental health	12 (8.3%)	12 (5.8%)
3 Paediatrics	10 (6.9%)	11 (5.3%)
4 Palliative care	9 (6.3%)	9 (4.3%)
5 Diabetes	7 (4.8%)	5 (2.4%)
6 Rural/remote/generalist	7 (4.8%)	11 (5.3%)
7 Wound management	6 (4.1%)	7 (3.4%)
8 Renal/nephrology	6 (4.1%)	13 (6.3%)
9 Aged care (including aged care rehab)	5 (3.4%)	11 (5.3%)
10 Neonatal/neonatal intensive care unit (NICU)	5 (3.4%)	5 (2.4%)

Source: AUSPRAC 1st (Gardner et al., 2009b) and 2nd census (Middleton et al., 2011)

To match this growth in NP Services research was required to evaluate the impact, efficiency and effectiveness of this evolving model of health care. The following section will review what the international and national research knows about the NP Service.

Section 2: Integrative Review of Research Literature

There are numerous methods existing for the synthesis of qualitative and quantitative evidence from the literature (Pawson, Greenhalgh, Harvey, & Walshe, 2005; Popay et al., 2006; Sandelowski, Barroso, & Voils, 2007; Whitemore & Knafl, 2005). There were a vast number of international articles published on NPs; however, different standards of practice, disparity in the use of the title of NP, and the differing health care systems in which they worked meant that the international literature was of varying relevance to the Australian context. Many of the published international articles compared NPs with medical practitioners. To ensure a more focused consideration of international published research literature, for the first literature review only systematic reviews were sourced. The aim of this systematic review was to determine what the international research evidence revealed about the implementation of the NP Service, with a particular focus on evidence from the USA, Canada and the UK which are potentially relevant to the Australian NP Service. The intention of using a systematic review was to present the evidence on what is known internationally about the NP Service. As of November 2008 no systematic reviews published on NPs included any Australian NP studies (Masso & Thompson, 2014). Another justification for using a systematic reviews on the international literature on NPs is that they answer a specific research question (Popay et al., 2006) that can be used to provide historical background information on the implementation of NP Services internationally.

For Literature Review 2 and 3, another review method that has been used previously in case study research, the integrative review method was used and followed Whitemore and Knafl's (2005) five stages of the integrative review process which are: preparing the guiding questions; searching or sampling the literature; data extraction, data analysis and synthesis; and results of the integrative review. The benefit of using an integrative review is its unique and rigorous methodology that enables conclusions to be drawn about the state of knowledge between diverse studies (Souza et al, 2010; Whitemore & Knafl, 2005). This method is the only approach that allows for the combination of diverse methodologies (for example, qualitative and quantitative evidence) to create themes (Whitemore and Knafl, 2005). However, a detailed explanation on the process of how to extract, analyse and synthesise the data were missing from the method

described by Whitemore and Knafl (Melnik & Fineout-Overholt, 2005). Integrative reviews offer a wide range of evidence without over-emphasising research studies within empirically based research groups (Jones, Jenkinson, Leathley, & Watkins, 2010; Rawlins, 2008). A more balanced integrative review is created by combining diverse methodologies (Whitemore & Knafl, 2005).

Literature Review 2 was undertaken using the Australian literature as this is the only review method that allows groupings of different methodological research studies to be summarised in order to provide a more comprehensive understanding of a specific phenomenon (Souza, Silva & Carvalho, 2010; Whitemore & Knafl, 2005), which in this case is the NP Service in Australia. At the beginning of this study, with the NP Service in Australia being in its infancy, there was limited research literature available and it was these studies with their diverse methodologies (experimental and non-experimental research) that formed the basis of the integrative review. The aim of this integrative review was to analyse what was known about the early implementation of the Australian NP Service. The two guiding questions that the literature review sought to answer were:

Question 1: What was known about the early implementation of the Australian NP Service?

Question 2: What are the Australian views of the NPs, health professionals and patients about their interactions with the NP Service?

The results of this integrative review are presented in the following format:

Question 1 was answered by the Australian literature on the implementation of the NP Service. Part 1 identified findings from pilot projects undertaken prior to the implementation of an NP Service. These studies occurred mostly in NSW and Victoria and were generally funded by state or federal government. Populations identified in these studies included NP candidates or transitional NPs who did not have endorsed scopes of practice. Part 2 identified findings involving authorised NPs and implementation of the NP Service. These authorised NPs worked under endorsed scopes of practice.

Question 2 was answered by Australian studies that investigated the views or perspectives of the NPs, health professionals and patients. The latter two groups potentially interacted with the NPs and the NP Service.

As the focus of this study was to gain an understanding of the early implementation of the NSW NP Service in 2008, Australian research published prior to November 2008 is reviewed at the beginning of this section.

The third literature review, another integrative review, targeted the contemporary literature, post-November 2008, and the results are presented at the end of this section as well as integrated, where relevant, within the discussion chapter (Chapter 5) to provide an insight into what happened following completion of the data collection. The aim of this integrative review was to search the contemporary literature to determine what was known about the early implementation of the Australian NP Service. Similar to Literature Review 2, the two guiding questions that the literature review sought to answer were:

Question 1: What was known about the early implementation of the Australian NP Service?

Question 2: What are the Australian views of the NPs, health professionals and patients about their interactions with the NP Service?

In summary three reviews of the literature were undertaken. Firstly, published systematic reviews of the NP Service were initially examined to discover what was known internationally about the implementation of the NP Service. This is followed by an integrative review that sought to maximise the available knowledge with respect to the early implementation of the NP Service in Australia at the time of data collection for this thesis (pre November 2008). Finally contemporary literature post November 2008 will be identified in this section but mostly integrated, where relevant, into the Discussion chapter of this thesis (Chapter 5).

2.1.5 Information Sources and Search Strategies

For this review of the research literature, two searches were performed. An initial, extensive search was undertaken in November 2008 when this study commenced and the literature review was repeated in June 2016 to update the contemporary literature. The search focused on the following databases: EBSCOhost, Informit, ProQuest (dissertations and theses), Joanna Briggs Institute Library of Systematic Reviews, Cochrane Library and the relevant grey literature as identified in the inclusion criteria below. Results from all databases were combined in NVivo8 and manuscripts were screened by title and abstract for suitability and inclusion. Reference lists of potential papers were also reviewed for eligibility. The candidate examined the full text of potential papers for final inclusion or exclusion in the review.

Inclusion and Exclusion Criteria for the Integrative Review

Inclusion criteria for literature in the integrative review included publications from January 1990 to November 2008, to cover the expected timeframe for initiating and developing the NP Service in Australia. Further inclusion criteria included peer-reviewed literature, relevant grey literature and publications in English. There were a number of published non-peer reviewed articles, known as grey literature (Auger, 1998), relevant to the implementation of the Australian NP Service from non-peer-reviewed sources that were incorporated into the review to ensure completeness of the review. These comprised primarily government reports and publications linked to health care. These publications were retrieved from the Google Scholar search engine and assisted in understanding the early implementation of the NSW NP Service. The search included Australian websites such as the Australian Department of Health / Department of Human Services, the Australian Nursing and Midwifery Board (ANMB), the Australian College of Nurse Practitioners (ACNP) and the AMA. Exclusion criteria included opinion papers and anecdotal reports as well as studies where full text was not available, that were not published in English and where there was little or no evidence of an NP described.

Search Strategies

When appropriate, subject headings were used as search strategies in each database used. The search strategy used for this study is shown in Table 2.4 for the EBSCOhost database.

Table 2.4: EBSCO Host Search Strategy

Search	Search Term
1	'Nurse practitioner*'
2	Systematic review
3	'Implementation'
4	'Team'
5	'Health professional*'
6	'Collaboration'
7	'Views'
8	'Patient*'
9	'Australia*'
10	1 AND 2
11	1 AND 3 AND 9
12	1 AND 4 AND 9
13	1 AND 4 AND 5 AND 9
14	1 AND 4 AND 5 AND 6 AND 9
15	1 AND 5 AND 7 AND 9
16	1 AND 7 AND 8 AND 9

Assessment of Methodological Quality

For this literature review the Mixed Methods Appraisal Tool (MMAT) was used to measure the methodological quality of qualitative, quantitative and mixed methods studies (Crowe & Sheppard, 2011). Five types of studies are categorised using the MMAT: qualitative; three types of quantitative (randomised, non-randomised, descriptive); and mixed methods. Each category relies on a quality score derived from the percentage of criteria that are met (Pluye, Gagnon, Griffiths, & Johnson-Lafleur, 2009). General criteria for all study types included identification of clear research questions, association of data collection and analysis to address the research questions, consideration setting and participant selection, and consideration of researcher influence (Pace, Pluye, Bartlett, Macauley, Salsberg, et al., 2012). The percentage of the general criteria that are presented in the study will predict the score allocated. A score of 25% is

given to each of the four criteria met. In mixed methods studies, “the three components (quantitative, qualitative, integration of qualitative and quantitative) are assessed independently, and the quality score is based on the quality score of the weakest component” (Pace et al., 2012, p.1). The updated 2011 version of the MMAT included a toolkit to facilitate the elucidation of the criteria (Pace et al., 2012). While yet to mature as a research tool, the MMAT is relatively easy and quick to use and exhibits ‘promising’ inter-rater reliability (Pace et al., 2012). For each Australian study reviewed in this study, the quality was measured using the MMAT. The results are included in the Evidence Tables of the Integrated Review (see Appendices 14 and 16).

2.1.6 Data Extraction

The international systematic literature review consisted only of evidence-based reviews, so information pertaining to the method (including MMAT) and data collection methods was omitted. Data were extracted from the studies and organised into the evidence tables by the candidate (see Appendices 10–16). The evidence tables included the relevant information pertaining to each study, such as: study; aim/s and method (including MMAT category); sample characteristics / setting; data collection methods; results; conclusion; and comments and quality assessment (MMAT score).

2.1.7 Data Analysis and Synthesis

To enhance the iterative process, repetitive rounds of analysing the articles and checking the evidence on the table led to the development of sub-categories (Noyes & Lewin, 2011). Collapsing of these sub-categories created the descriptive themes (Thomas & Harden, 2008), such as systematic review publications, studies about the implementation process and studies about the views of the people who interact with the NP Service. Findings from the quantitative and qualitative studies were compared within each descriptive theme and outlined in a descriptive summary (Noyes & Lewin, 2011) and are presented in the integrative review tables that appear in the Appendices

11–16. Where appropriate, studies have been grouped under categories in the evidence tables (Thomas & Harden, 2008; Whittmore & Knafl, 2005), such as studies on the implementation of the NP Service; studies involving NPs and NP models of care; and studies on the views of people who interact with the NP Service. Appendices 10 and 11 contain a list of the international and Australian studies that, after review, were excluded from the review because they did not meet the eligibility criteria

2.2 Results of the Literature Reviews

2.2.1 Results of Literature Review 1 - the Systematic Review

The literature search from January 1990 until November 2008 identified six systematic reviews that revealed the international research evidence about the implementation of the NP Service. The use of a systematic review protocol helped reduce the implicit researcher bias. Prior to November 2008, systematic reviews that included the NP Service contained no Australian studies, most likely due to the Australian NP Service being in its infancy. The international literature contained two types of systematic reviews of potential relevance to understanding the early implementation of the Australian NP Service. The first type of review indicated NPs were involved in the study, such as the Laurant et al., 2005 systematic review on the substitution of doctors by nurses. The second type was a systematic review that focused on an aspect of NP practice (outcome) or area of practice of the NP (emergency), such as Carter and Chochinov’s (2007) systematic review of NPs working in EDs (see Table 2.5 Summary of the International Systematic Reviews that Included NPs).

**Table 2.5: Summary of the International Systematic Reviews that Included NPs—
January 1990 to November 2008**

International Reviews that Included NPs	International Reviews that Included Aspect or Area of NP Practice
Substitution of doctors by NPs (Laurant et al., 2005)	Primary care (Brown & Grimes, 1995; Horrocks et al., 2002)
Advanced nursing practice (Mantzoukas & Watkinson, 2007)	Emergency departments (Carter & Chochinov, 2007)
Specialist and advanced nursing practice in acute hospitals (Lloyd Jones, 2005)	Intensive care (Kleinpell et al., 2008)

Only one systematic review (Lloyd Jones, 2005) looked specifically at the implementation of the advanced practice nursing role (including that of the NP) and, based on 14 mostly UK studies, identified enabling and constraining factors to the role implementation in hospital-based specialist and advanced practice roles. It concluded that the two most influential indicators were role ambiguity and interactions with other health professionals (Lloyd Jones, 2005). The author added that these indicators appeared to be linked, and that the implementation issues remained even after the health professionals become familiar with the new role. As a means of overcoming these two issues, the author suggested that prior to the implementation of these positions, clear role definitions and objectives be developed and communicated to relevant health groups (Lloyd Jones, 2005).

With the introduction of the NP Service, NPs challenged the conventional medical boundaries of practice to achieve a higher degree of professional autonomy (Mantzoukas & Watkinson, 2007). The evidence indicated that care provided by an NP is equivalent to or better than that delivered by medical practitioners (Brown & Grimes, 1995; Carter & Chochinov, 2007; Horrocks et al., 2002) or physician assistant (Kleinpell et al., 2008), and there appears to be no literature describing any negative outcomes. One of the outcomes achieved by the NP, patient satisfaction, shows the strongest evidence (Brown & Grimes, 1995; Carter & Chochinov, 2007; Horrocks et al., 2002). These results mostly come from NP and GP comparisons in general practice settings in the UK and USA. A reason for the increase in patient satisfaction might be that the delivery of health promotion and education are high priorities in NP Service (Carter & Chocinov, 2007) or the longer consultations provided by the NPs (Horrocks et al., 2002).

Internationally, it was hypothesised that NPs could deliver comparable services based on efficacy and safety to those of their medical peers at lower costs and with the potential for improving access to timely health care for underserved populations (Laurant et al., 2005). By 2008, evidence was starting to emerge confirming the early hypotheses.

When considering the evidence for outcomes, the literature that reported comparisons between NPs and medical practitioners found that NPs undertook more investigative procedures (Horrocks et al., 2002). They also found that there was greater patient compliance with treatment recommendations made by NPs (Brown & Grimes, 1995). The valuable role of intensive care NPs was noted as leading research and quality improvement initiatives (Kleinpell et al., 2008). The activities of NPs and physician assistants in intensive care, and the outcomes they achieve, are similar to resident physicians, without altering direct hospital costs (Kleinpell et al., 2008). When compared with medical residents, Carter & Chochinov (2007) found NPs were better at documentation and following protocols and matched their medical peers in X-ray interpretation.

These authors also found waiting times in EDs were reduced using NPs (Carter & Chochinov, 2007). It is interesting that one of the most commonly quoted studies to support the use of NPs is the systematic review by Horrocks et al. (2002). However, the authors make the point that their findings that “patients are more satisfied with care from a NP than from a doctor, with no difference in health outcomes” (Horrocks et al., 2002, p. 822) may not be generalisable to a different clinical setting with different patient groups. A summary of the systematic reviews appraised in this section can be found in Appendix 12.

2.2.2 Results of Literature Review 2 – the Integrative Review (Pre November 2008)

The literature search from January 1990 until November 2008 identified 632 papers. After excluding duplicates, there were 218 papers that were eligible to be assessed. The total numbers of papers included in this initial review (pre-November 2008) was 22. The most common reasons for papers being excluded were the sample population not being NPs (even though NP was a search strategy) or the papers not containing relevant information useful for this study. Non-peer reviewed grey literature was obtained by searching the reference lists of the potentially relevant papers identified during the literature search and appear in the box titled ‘Potential articles from reference list’. Figure 2.3 summarises the literature review process.

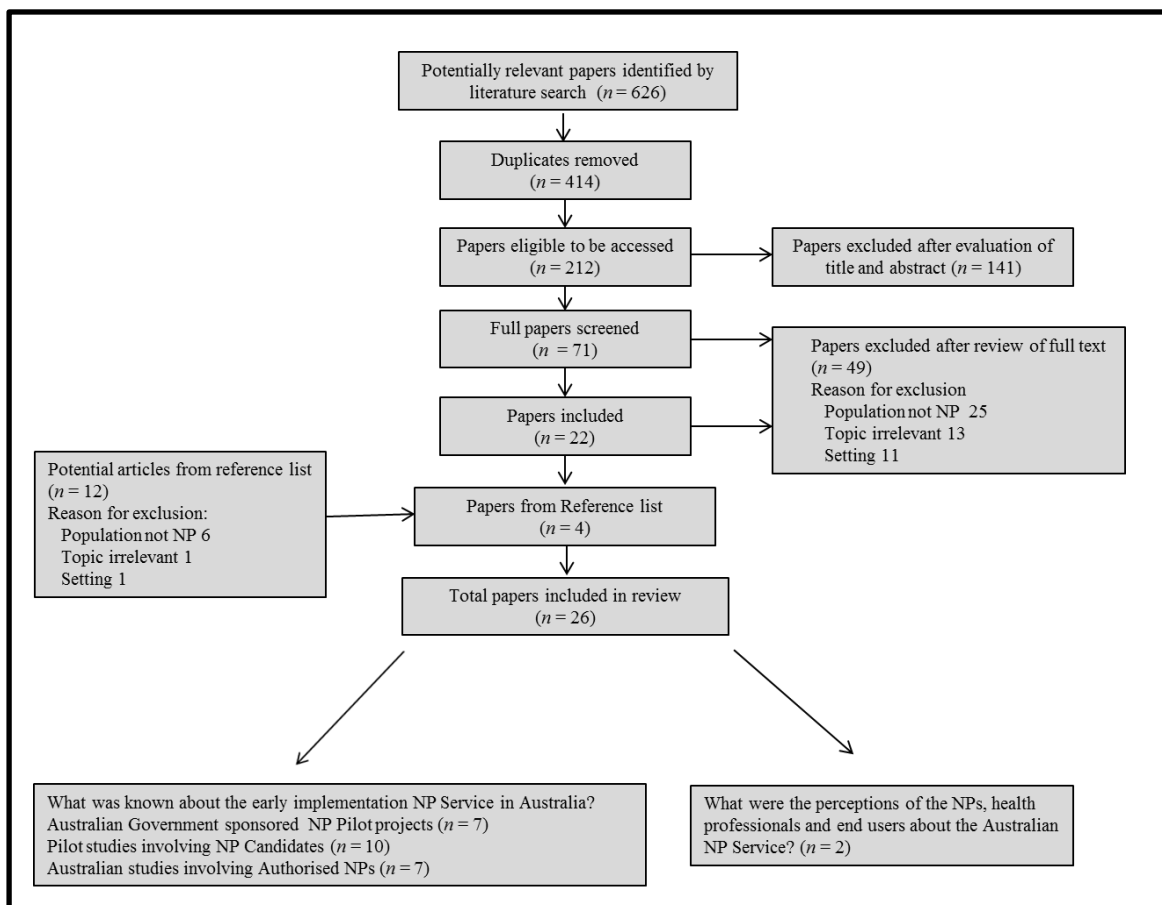


Figure 2.3: Literature Review 2: Integrative Review Process from January 1990 to November 2008

The results of this section have been divided into three: Part 1 consisted of the Australian pilot studies involving NP candidates or trainee NPs (n=17) and Part 2 consisted of Australian studies involving authorised NPs (n=7), both used to understand what was known about the early implementation of the NP Service in Australia. Part 3 consisted of two articles that investigated the perceptions of the NPs, health professionals and end users of the Australian NP Service.

Part 1: Pilot Studies Involving Nurse Practitioner Candidates or Trainee Nurse Practitioners

In Australia, the literature indicated there were various stages of implementation that were explored prior to the adoption of the NP Service. Pilot studies were frequently reported as an initial stage of the implementation. These were mostly sponsored by state and federal governments (Chiarella, 1996). The historical origins of the Australian NP Service (see Section 2.2.4) complement this exploration component. Following the pilot studies, research was published using the term NP candidates (the term used in Victoria) or trainee NPs (the term used in NSW). Research that involves NP candidates or trainee NPs needs to be identified separately as they work under a limited scope of practice prior to endorsement by a registration board.

With all the political discussions concerning setting up NP Services in Australia, state governments started funding pilot studies to examine the feasibility of implementing this alternate model of health care (NSW Department of Health, 1996). In NSW, a Stage 3 Steering Committee was established and in September 1994 the ten NP pilot projects commenced (NSW Department of Health, 1996). Expressions of interest in the pilot projects was advertised across Australia and were designed to both elicit proposals from interested organisations and as a means of informing health professionals and the public about the projects (NSW Department of Health, 1996). Applications were received from 58 organisations and the NSW College of Nursing was appointed trustee (NSW Department of Health, 1996). Three of the 10 approved projects were established in remote regions of Australia, three projects attached to general medical practices, and the remaining four were linked to District Health Services in NSW (NSW Department of Health, 1996). For five of the sites the NP model of care was a new service model, three sites already had an established *de facto* NP model of care and for the remaining two sites they were trialling an NP service model (NSW Department of Health, 1996). The findings of the 10 pilot studies found the NP role was advantageous to the existing health care service through either providing an additional service or offering a service where no existing service were available (NSW Department of Health, 1996). Another finding linked to the safety of the role indicated NPs followed clinical guidelines and protocols in 96% of cases and, on clinical review, the NPs clinical decisions and

management were ascertained to be reasonable (Chiarella, 1998). Of the remaining 4%, approximately half of the NPs clinical decisions and managements were assessed as rational by a multidisciplinary clinical review team. Subsequently the findings of the pilot studies combined with the outcomes of issues identified in Stage 2 of the NP Project confirmed to the majority of members on the NP Steering committee that implementing the NP role within NSW health care system was a potentially positive step (NSW Department of Health, 1996). The overall findings released from the NP pilot projects provided strong evidence for the establishment of the NP Service model of care (Chiarella, 2008). The outcome of the evaluation identified that the NPs were viable, safe and effective in their roles, and provided quality health care (Chiarella, 1996; NSW Department of Health, 1996).

It has been reported that generally the health of Australians in rural and remote areas is worse than that of those living in major cities (AIHW, 2014a), mostly attributable to a reduction in access to services for these populations. Consequently, the initial NP models were restricted to rural and remote areas, with employment of NPs in rural and remote NSW deemed to be cost efficient by the health care system, resulting in greater consumer access to the health care system (NSW Department of Health, 1996). However, in 1995 just prior to a state election, the NSW government developed and funded an additional 10 NP pilot sites that were not limited to the rural sector, which resulted in seven new NP positions in the acute care sector, a novelty at that time (NSW Department of Health, 1996).

Other Australian states and territories found the NSW NP role to be too specific because of its restriction to public rural and remote areas, and the processes required for authorisation of NP positions. Victoria, the ACT, and South Australia did not restrict the NP role geographically, and so NPs in those jurisdictions operated in public and private health care sectors as well as in rural and metropolitan areas (South Australian Department of Human Services, 1999; Victorian Government Department of Human Service, 2000).

In early 1996, the South Australian Government initiated the Nurse Practitioner Project and finding from this project included a number of recommendations to progress implementation of NP Services such as legislative changes, the development of

processes for authorisation and credentialing of NPs (South Australia Department of Human Services, 1999). The implementation of the NP Service in South Australia differed from NSW and Victoria in that the South Australian Government sought to build an evidence-based model that acknowledged the emerging body of literature that espoused the benefits of the NP role. On the basis of the literature, South Australia amended the legislation and regulations regarding the *NSW Nurses Amendment (Nurse Practitioners) Act* (1998) and the *Drugs, Poisons and Controlled Substances Act* (South Australian Department of Human Services, 1999).

In 1998, the Victorian Department of Human Services also established its NP taskforce to examine the process of introducing the NP role (Victorian Government Department of Human Services, 2000). Unlike NSW, the implementation of the NP role in Victoria was not based upon improving access to health care in isolated communities where medical doctors were scarce. The Victorian model focused on the development of an advanced nursing framework underpinned by advanced nursing practice and decision-making to ensure that the needs of the patient and community were met (Victorian Government Department of Human Services, 2000). Eleven NP models were funded and evaluated across a range of dimensions, such as feasibility, access, appropriateness, collaborative practice, quality, cost and outcomes (Parker, Faulkner, Dunt, Long, & Watts, 2000). Parker et al. (2000) identified that these evaluations demonstrated firstly that NPs delivered a service that was highly rated by consumers as well as other professionals and that this was done without any significant increase in cost when compared with other health care delivery models. The numerical responses to survey returns given to health professionals and clients associated with each model were low; hence, findings were considered “tentative and indicative” (Parker et al., 2000 p. v).

In March 2001, the ACT followed, funding four NP project models in the areas of sexual health, wound care, mental health, and primary care and health promotion (ACT Nurse Practitioner Steering Committee, 2002; Gardner & Gardner, 2005). Following these pilot projects, the educational needs of NPs were better understood and informed the first Australian evidence-based curriculum for an NP master’s course, which was approved by the University of Canberra Higher Degrees Committee in 2003 (Gardner et al., 2004). The Australian government (Department of Health and Ageing) and the ACT

government jointly funded the Aged Care Nurse Practitioner Pilot Project (ACT Government, 2002), which began in 2004 with the purpose of investigating the impact of the NP role in health service delivery for the aged-care population of the ACT (ACT Government, 2005). The project has demonstrated that there is a role for the aged-care NP in the ACT. The project also confirmed the need for improved health care services in aged care in the ACT. Desired outcomes included improved continuity of care across all sectors (i.e., acute, community and residential) and increased rates of client satisfaction, as well as improved communication, coordination and linkages between health care providers (ACT Government, 2005). Appendix 13 contains the Australian government-sponsored NP pilot projects from January 1990 to November 2008.

Most of the studies that involved transitional NPs and NP candidates have emerged from NSW and Victoria, which is no surprise given the Australian government-sponsored NP pilot projects being invested in these two states. The participants in these studies comprised mostly RNs who were performing many aspects of the NP role but not authorised or endorsed as NPs. Many of the participants were very experienced in their chosen clinical field, most likely were clinical nurse consultants (CNCs) and were interested in applying for the NP position if it became available. The results of these studies that use transitional NPs and NP candidates allow stakeholders an opportunity to see an outcome measure on a small scale prior to implementing the service. These studies target outcomes regarding what the participants do when carrying out their role as an APN. Research was primarily based in areas such as ED (Considine, Martin, Smit, Jenkins, & Winter, 2006a; Considine, Martin, Smit, Winter, & Jenkins, 2006b; Lee & Jennings, 2006; Martin & Considine, 2005) and aged care (Allen & Fabri, 2005; Joanna Briggs Institute, 2007).

In ED, the NP candidates all worked in the fast-track area (triage categories 4 & 5). The ED studies have a particular focus on the flow of patients by looking at waiting times and length of time spent in ED, and the NP candidate is normally compared to emergency physicians. The results indicated the NP candidate had better flow outcomes (Lee & Jennings, 2006) or comparable flow outcomes (Considine et al., 2006b). With respect to the quality of patient assessment in the ED, Considine et al. (2006a) determined that it could be inferred from other findings, for example, that there was no

significant difference between the NP candidate and an emergency physician in the numbers of X-rays ordered. One study examined the profile of ED patients managed by the NP candidate and found the majority of patients to be completely managed because the patients were within the NP candidate's scope of practice (Considine et al., 2006a). Prescribing was another outcome in ED. A study found the most common medications ordered by NP candidates included oral analgesics, intravenous antibiotics, immunisations and local anaesthetics (Considine et al., 2006a). About half of the clients managed by NP candidates were discharged from hospital with instructions about using over-the-counter analgesics (Considine et al., 2006a). The most common referrals by NPs working in ED are to GPs (Considine et al., 2006a). NPs have the authority to discharge patients from ED (Lee & Jennings, 2006).

Results in the aged-care setting showed that similar outcomes, such as health status and quality of life, were achieved by the NP candidate compared with those achieved by GPs (Joanna Briggs Institute, 2007) and, when adding an NP candidate to the aged-care team, "improvements such as symptom relief and enhanced socialisation and improved access to services" (Allen & Fabri, 2005, p. 1208) were reported. The age care literature also indicated the NP candidates provided a comprehensive patient assessment or enhanced existing systems of patient assessment (Allen & Fabri, 2005; Joanna Briggs Institute, 2007). Education was an issue addressed in the literature with the findings of a pilot study exploring a community aged-care NP Service indicating that the NP candidate educated patients and their carers on a variety of health subjects (Allen & Fabri, 2005). The issue of coordination in aged care was acknowledged in the report by the Joanna Briggs Institute (2007) and concluded that:

If an appropriately prepared nurse, with prescribing and diagnostic investigation rights, is allocated a caseload of residents in aged care facilities this may be effective in complementing the role already played by general practitioners in ... providing enhanced communication, coordination and monitoring of care for other health care providers, the client and/or their carers (Joanna Briggs Institute, 2007, p. 73).

Outcomes achieved by the introduction of an NP candidate in the mental health area reported an increase in patient satisfaction with a patient commenting he felt more comfortable communicating with the NP than a doctor (Wortans, Happell, & Johnstone, 2006).

In describing the professional experiences of implementing an NP role in a renal setting, the two NP candidates found little resistance at a local level but at an organisational level there was lack of support (Stanley, 2005a, 2005b). The importance of collaboration between the NP candidate and other team members was identified in two studies (Allen & Fabri, 2005; Martin & Considine, 2005) as a key aspect for influencing the implementation of the NP Service. There was confusion over who the NPs were, and one NP candidate indicated that she was “neither a nurse nor a doctor which made it difficult for the NP to develop a role” (Stanley, 2005a, p. 25).

The Australian literature contains minimal evidence to support the NPs management of patient care, which was seen as a very important aspect of role implementation of the NP (Adrian & Chiarella, 2008). One Victorian study showed that most of the clients treated by an NP candidate in an ED were managed entirely by that NP. Only four patients (out of 476 or < 1%) were handed over to medical staff because the patients were outside the NP candidate’s scope of practice (Considine et al., 2006a). As indicated by many of the authors, results need to be treated with caution as many of these studies were small, and further research is required (Allen & Fabri, 2005; Considine et al., 2006a; Considine et al., 2006b; Joanna Briggs Institute, 2007; Lee & Jennings, 2006; Martin & Considine, 2005).

Part 2: Australian Studies Involving Authorised Nurse Practitioners

Given the relatively recent origins of the NP Service in Australia, the research involving authorised NPs working in established positions was limited. Australian studies identified enabling and constraining factors that impacted on the implementation of service such as the confusion over the title and role, collaboration and characteristics of the NP. These will now be discussed.

A clear and accurate understanding of the NP role and scope of practice is essential to the successful implementation of the service. While some studies reported that NPs saw their role as the ability to initiate therapy, order diagnostic investigations and prescribe medication (Carryer et al., 2007) others found other health professionals and organisations were confused about exactly what the NP could do (Chiarella, Harford & Lau, 2007; Wilson, Coulon, Hillege, & Swann; 2005). The issue of NP role confusion can negatively impact the implementation of the NP Service. One study found that the NP felt she couldn't fully initiate her role effectively because her colleagues were unsure of if she was working as a nurse or a doctor (Wilson et al., 2005). Another aspect of the NP role that could impact on the implementation process was patient education. This was identified in a study where the NP was providing a colorectal screening service that involved communicating the findings of procedures and providing patient health education sessions (Morcom, Dunn, & Luxford, 2004). The authors stated referrals for screening from GPs had steadily increased over time as the GPs believed the NP could offer more time with the patients and provide education regarding ongoing screening and lifestyle changes (Morcom et al., 2004).

Other issues related to the NP scope of practice were associated with the broader context within which NPs work. One of the main issues raised in the literature was the lack of access to the Pharmaceutical Benefits Scheme, which restricted the NPs ability to prescribe (Chiarella et al., 2007). There was only one Australian study that looked at prescribing and it involved an NP candidate working in ED who was granted a hospital extension to practise, which allowed the candidate to prescribe limited medications (Considine et al., 2006a). Of the 476 patients seen by the NP candidate, almost 50% (n = 236) were prescribed medications as part of their care. Just over 50% of the medications prescribed by the NP candidate were oral analgesics (n = 119, 50.4%), followed by immunisations (n = 58, 24.5%), then intravenous antibiotics (n = 49, 20.7%) and local anaesthetics (n = 53, 22.4%). The NPs were limited to medications that could be dispensed from a hospital pharmacy if they wanted to prescribe a medication (Considine et al., 2006a).

For the NP Service to be successful, inter-professional team collaboration should occur, demonstrating real (rather than tokenistic) partnerships. This collaboration is between

NPs and other health professionals including other nurses and medical practitioners. Traditional hierarchical authority should be replaced by equality and shared decision-making (Queensland Health, 2006). Similar to what was found with the NPs, the importance of collaboration was identified in a small study as a key issue to effective implementation of the NP Service, and one study suggested that a lack of understanding of the NP role by doctors can inhibit communication between the NP and the medical staff (Wilson et al., 2005). Findings of another study in a Victorian ED acknowledged the significance of a collaborative approach to either support or block the implementation of an NP Service (Martin & Considine, 2005). Relationships with medical practitioners are critical to the successful implementation of the NP Service. NPs have acknowledged support and acceptance by their medical colleagues as central to the implementation of the NP Service (Chiarella et al., 2007).

One combined Australian and New Zealand study identified some important characteristics of an NP, including extensive clinical knowledge and comprehensive skills in patient assessment (Carryer et al., 2007). To provide a comprehensive patient assessment Carryer et al. (2007) identified that the NPs' ability to order pathology tests, X-rays and prescribe medications was regarded as opportune for patients, enabling improved timeliness of health service delivery and reduced fragmentation of care. There was limited published evidence related to the NPs' ability to provide comprehensive patient assessment, and what was available was largely identified in studies that involved aged-care NPs (Allen & Fabri, 2005; Joanna Briggs Institute, 2007). An interesting aspect of the findings associated with the provision of a comprehensive assessment is that the studies all contained comparisons between the NP and medical practitioner when one of the basic grounds for establishing the NP role was that the nature of patient assessments undertaken by NPs would be qualitatively different to that of medical practitioners.

Co-operation and team work also affect implementation. A study that asked NPs about their working relationships with GPs and other allied health professionals identified that two NP characteristics were important in supporting collaboration: the length of time the NPs had worked in the clinical area and the relationships that NPs had established prior to becoming an authorised NP. When considering acceptance of the service, the

literature suggested that the NP identified support and acceptance by medical staff as important contributors to the development of their role (Chiarella et al., 2007).

Clinical leadership was identified early in the development of core competencies, although the role of NPs as clinical leaders has not been investigated (Carryer et al., 2007). NPs who participated in one study identified aspects of clinical leadership as being responsible for leading a service as well as taking responsibility for the practice of others (Carryer et al., 2007). For many of the participants in Carryer et al.'s (2007) study, the clinical leadership aspect of their practice was still being developed. This was reinforced by the lack of specific literature in this area. The paucity of literature was likely to be related to the newness of the role in Australia and the evolving maturity of clinicians as they developed their role in health services (Carryer et al., 2007).

Patient outcomes achieved by NPs were identified in two studies (Kirkwood, Pesudovs, Loh, & Coster 2005; Morcom et al., 2004). Both studies were conducted at specialised clinics and both showed the NP could attend to over 50% of the patients since their conditions fell within the NP scope of practice. These studies also found there were no adverse outcomes or additional clinic appointments required (Kirkwood et al., 2005), and there were high levels of patient satisfaction (Kirkwood et al., 2005; Morcom et al., 2004). Patient satisfaction with the care provided by NPs was identified in three studies that involved a specialised clinic and one in ED (Kirkwood et al., 2005; Morcom et al., 2004; Wortans et al., 2006).

Part 3: What are the Australian views of the NPs, health professionals and patients about their interactions with the NP Service?

The introduction of the NP Service represented a significant change in the way health care services were delivered and perceived from the viewpoint of the NPs, the health professionals they work with, the patients who consult them and the organisations who employ them (Grol & Wensing, 2004). Two Australian studies examined the perceptions of people who interacted with the NP Service in an ED setting (Lee, Jennings, & Bailey, 2007; Wilson & Shifaza, 2008). The study by Lee and colleagues

(2007) explored staff knowledge regarding the NPs and found NPs were accepted by both nursing and medical professionals (Lee et al. 2007; Wilson & Shifaza, 2008). The majority of participating staff (n = 70, 92%) in Lee et al.'s (2007) study reported understanding the NP role; how the role operated within the ED (n = 65, 86%); had a good perception of appropriate patients for NP management (n = 59, 78%); and the difference in roles between the NP and other senior ED nurses (n = 69, 90%). More than 90% of the 76 participating staff agreed the addition of the NP made the ED team more effective and resulted in improved patient access to emergency care. With respect to patient management, the majority of participating staff (n = 66, 86%) agreed with the statement "ED physicians were the most appropriate personnel to supervise and advise NPs" (Lee et al., 2007 p. 85). There was no comparison made of the knowledge level between the nurses and physicians. The physicians consisted of 16% (n = 12) of the participants. Results indicated that a third of the participants did not understand the NPs scope of practice or their clinical practice guidelines; 18% (n = 14) did not understand the educational preparation required for NP endorsement; and 38% (n = 29) had no awareness of the NMBA requirements for NP endorsement. The study undertaken by Lee (2009) concluded there was a knowledge gap related to the NP's scope of practice and practice guidelines, and recommended that further staff education on the role of the NP was necessary (Lee, 2009).

The study by Wilson and Shifaza (2008) investigated the effectiveness of NP Services for the treatment of minor injuries and patient satisfaction in an adult ED. They found the majority of patients seen by the NP presented with triage 4 or 5 minor injuries (Wilson & Shifaza, 2008). Other results reported included that 91% of patients seen by the NP stated they were satisfied with the care they received and 93% of the patient respondents indicated that the NP was competent in providing their care (Wilson & Shifaza, 2008).

Quality of Australian Literature

The quality of the Australia literature, using the MMAT, varied from 25% to 100%. Of the 19 Australian published research studies, seven were qualitative studies (Allen &

Fabri, 2005; Carryer et al., 2007; Gardner, Hase, Gardner, Dunn, & Carryer, 2008; Stanley, 2005a, 2005b; Wilson et al., 2005; Wortans et al., 2006), 10 were quantitative studies (Chiarella et al., 2007; Considine et al., 2006a; Considine et al., 2006b; Jennings et al., 2008; Kirkwood et al., 2005; Lee & Jennings, 2006; Lee et al., 2007; Martin & Considine, 2005; Morcom et al., 2004; Wilson & Shifaza, 2008), and two used mixed methods (Adrian & Chiarella, 2008; Joanna Briggs Institute, 2007). Various methods were used and included semi-structured interviews, surveys and audits. Ten of the studies involved NP candidates (Allen & Fabri, 2005; Considine et al., 2006a; Considine et al., 2006b; Jennings et al., 2008; Joanna Briggs Institute, 2007; Lee & Jennings, 2006; Martin & Considine, 2005; Stanley, 2005a, 2005b; Wortans et al., 2006). Most of the studies focused on a particular model of care, such as renal (Stanley, 2005a, 2005b) or emergency NP (Considine et al., 2006a; Considine et al., 2006b; Jennings et al., 2008; Kirkwood et al., 2005; Lee & Jennings, 2006; Martin & Considine, 2005; Wilson & Shifaza, 2008). Many of the studies targeted only one aspect of the NP Service, such as collegial relationships (Adrian & Chiarella, 2008; Allen & Fabri, 2005; Lee et al., 2007; Martin & Considine, 2005; Stanley, 2005a, 2005b; Wilson et al., 2005) or quality of service provision (Considine et al., 2006a; Considine et al., 2006b; Gardner et al., 2008; Kirkwood et al., 2005; Jennings et al., 2008; Joanna Briggs Institute, 2007; Lee & Jennings, 2006; Morcom et al., 2004; Wilson & Shifaza, 2008; Wortans et al., 2006). A summary of the MMAT quality scores for the Australian research literature can be found in Table 2.6. To obtain an average quality score, the MMAT of individual studies in each study type was added together and divided by the number of studies (Pluye et al., 2009; Pluye et al., 2011). The non-peer reviewed grey literature added to this integrative review 2 included national and state government policies linked to the development of the NP Service in Australia and have been identified in Section 2.1.4, the Australian origins of the NP Service.

Table 2.6: Summary of the Mixed Methods Appraisal Tool (MMAT)—January 1990 to November 2008

Study Type	Data Collection Methods	Number of MMAT Quality Scores	Average Quality Score
Qualitative	Semi-structured interviews X 7	7	65%
Quantitative—Randomised		0	0%
Quantitative—Non-random studies	Medical record audit X 2	2	100%
Quantitative—Descriptive	Patient register X 4 Survey X 4	8	70%
Mixed Method	Focus group & assessment tool X 2	2	25%
Total		19	67%

Limitations of the Literature

Ambiguity over the NP title, role and function within the international literature meant it was of varying relevance to the Australian context. The Australian literature related to early implementation of the NP Service was limited. There were no Australian studies published on the NPs' personal perception of their role, associated Health Professionals (HPs) and patients about the implementation of the NP Service, and little information on integration of the NP into existing health care services teams. NPs were consistently compared with their medical counterparts. This approach is flawed because it assumes that medical practitioners are the “gold standard” and that medical practitioners and NPs have the same practice approach, with both points being debatable.

It is worth noting that some of the studies used in this review of the research literature targeted specific models and involved the NP evaluating their own practice (Kirkwood et al., 2005; Lee et al., 2007; Morcom et al., 2004). Studies that asked the NP to evaluate their own service raised the possibility of introducing bias into the data analysis and the understanding of findings published on their own, mostly single-model, services.

A summary of the Australian literature used for this review is presented in Table 2.7. The full summaries appear in the evidence tables that can be found in Appendix 14.

Table 2.7: Summary of the Australian Literature Reporting Research About NPs—January 1990 to November 2008

Australian Studies on the Early Implementation of the NP Service—Pilot Studies Involving NP Candidates or Trainee NPs (<i>n</i> = 10)		
Allen & Fabri (2005)	Considine et al. (2006a)	Considine et al. (2006b)
Joanna Briggs Institute (2007)	Jennings et al. (2008)	Lee & Jennings (2006)
Martin & Considine (2005)	Stanley (2005a)	Stanley (2005b)
Wortans et al. (2006)		
Australian Studies Involving Authorised NPs and Implementation (<i>n</i> = 7)		
Adrian & Chiarella (2008)	Carryer et al. (2007)	Chiarella et al. (2007)
Gardner et al., (2008)	Kirkwood et al., (2005) Emergency eye clinic	Morcom et al., (2004) Colorectal cancer screening clinic
Wilson et al. (2005)		
Australian Studies on Perceptions of People Who Interact with the NP Service (<i>n</i> = 2)		
Lee et al. (2007) Medical and nursing staff in ED	Wilson & Shifaza (2008) Consumer satisfaction	

2.2.3 Literature Review 3 - Update of Integrative Review

The initial search of the databases for papers published on the NP Service was limited to January 2008 (the time of data collection). An updated review was conducted seeking any additional literature, including non-peer reviewed grey sources, dated December 2008 to October 2016 to enable a longitudinal picture to be constructed of the evolution of the NP Service since the period of data collection. There was a burgeoning of available literature, with 3,285 potentially relevant papers discovered during the re-run process. After excluding duplicates, there were 2,362 papers for review. The total numbers of papers included in this updated review (post-November 2008) was 73. Once again, the most common reasons for papers being excluded were that the sample population did not include NPs or that the papers contained no information to inform

this study. Grey literature added to this updated review included six theses (Barraclough, 2014; Foster, 2010; Lowe, 2014; O’Connell, 2014; Schadewaldt, 2015; Wand, 2011).

The results of this review update, including international evidence and Australian studies, appear in Appendices 15—16. The literature pertaining to these contemporary research papers is integrated, where appropriate, into Chapter 5, the discussion chapter.

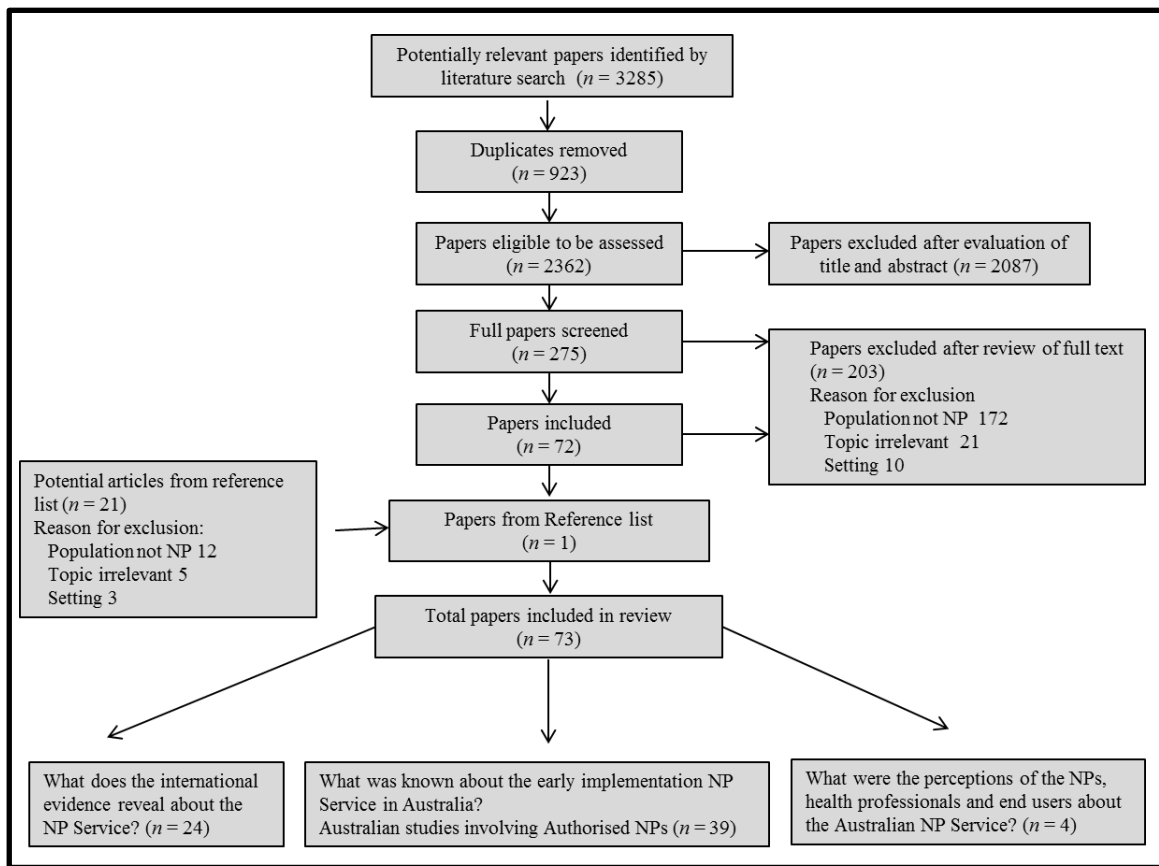


Figure 2.4: Literature Review 3 Integrative Review Process from November 2008 to October 2016

2.2.4 International and National Literature related to the three assigned NP Services in this Thesis.

The development of the specialised NP role in an acute care setting commenced not long after NPs were introduced in countries such as USA, Canada and the UK (Robson et al., 2002). In Australia, NP positions were created in acute specialised care areas as they advanced their clinical pathways through the Clinical Nurse Specialist (CNS) / Clinical Nurse Consultant (CNC) models (Dunn, 1997). The AUSPRAC results, being the first population study of Australian NPs, provided an insight into the NP workforce in terms of demographics, workplace and clinical services profile (Gardner et al., 2009b). As previously identified, NP Services internationally have a high focus on primary health care but in Australia and in particular NSW this focus is low (< 5% of NP work in a Primary Health Care or community setting) (Gardner et al., 2009b). Unlike most international NPs, Australian NPs were employed in metropolitan areas (81%) and in hospital based specialty fields such as emergency departments (27%). At the time of data collection for this study (November 2008) the majority of employed NSW NPs worked in metropolitan hospital based positions (Gardner et al., 2009b). The AUSPRAC investigators assigned the candidate three of the four distinct specialty NP Services in NSW. These being a mental health NP working in an emergency department, an emergency NP working in the subacute area of an emergency department, and a neonatal NP working in neonatal intensive care. To develop background information on each of the three specialties the international and national literature was examined.

Mental Health NP (MHNP) working in an Emergency Department (ED)

In Canada and the United Kingdom it is the generalist NP who is responsible for the mental health care of patients (Creamer, & Austin, 2017; Torn, & McNichol, 1996). The United Kingdom did propose a specific Mental Health Nurse practitioner in the mid 1990 but nothing has come out since (Torn, & McNichol, 1996). In the United States of American the Psychiatric Mental Health Nurse Practitioner (PMH NP) role was introduced in the early 1990s and in 2001 the American Nurses Credentialing Center confirmed the title (Delaney, 2005; Muxworthy, & Bowllan, 2011; Wheeler, & Haber, 2004). As the role developed and grew disunity among the PMH NPs evolved and

interest in the role declined (Drew & Delaney, 2009). Currently generalist NPs in the USA are responsible for promoting mental wellness and holism in the primary health area (Kverno, & Kozeniewski, 2016). There is no evidence of MHNPs working specifically in ED in the USA, Canada or the UK.

In Australia MHNPs have been established since 2005 (Wand 2006). In 2009 MHNPs were the third most commonly reported clinical specialty in Australia (Middleton et al., 2011). They employed in metropolitan and non-metropolitan settings as well as rural and remote areas (Barracough, Longman, & Barclay, 2016; Gardner et al., 2009; Middleton et al., 2011; Nicholls, Gaynor, Shafiei, Bosanac, & Farrell, 2011; Wand & White, 2015). The role of the MHNPs includes the management the patient's psychosocial and lifestyle issues, in addition to complex physical problems that often co-exist with mental illness. Research indicates MHNP spend more time with patients (Barracough et al., 2016; Kverno & Kozeniewski, 2016; Wand, & Fisher, 2006; Wand & White, 2015), provide more patient education (Barracough et al., 2016; Muxworthy & Bowllan, 2011; Kverno & Kozeniewski, 2016; Wand & Fisher, 2006; Wand & White, 2015), and are capable of performing more complex MH consultations (Nicholls et al., 2011; Torn & McNichol, 1996; Wortons et al., 2006). MHNPs are better equipped to assess, diagnose, and treat mental illness than primary health care providers (Kverno, & Kozeniewski, 2016; Torn, & McNichol, 1996; Wand, & Fisher, 2006; Wand & White, 2015).

With the increase of mental health presentations to EDs (Wand, & Fisher, 2006) the MHNPs, since 2006, have been employed to work in EDs in NSW (Wand, & Fisher, 2006; Wand & White, 2015) and Victoria (Nicholls et al., 2011). The employment of MHNP in ED was initiated to support the ED staff in dealing with the increase in mental health presentations and to promote staff competencies when dealing with those presenting with mental health issues to facilitate a smooth transition for patients through the ED and into the appropriate follow-up stream. The MHNP role based in the ED entails the provision of direct clinical care for people with mental and other health problems (Wand, & Fisher, 2006) amenable to MHNP intervention (Nicholls et al., 2011) and supports ED staff in providing more holistic care (Nicholls et al., 2011; Wand, & Fisher, 2006). Reduced waiting times for mental health assessment (Nicholls

et al., 2011; Wand & White, 2015), therapeutic intervention (Wand & White, 2015, and enhanced coordination of care are the main attributes of the role (Nicholls et al., 2011; Wand & White, 2015). The ED-based MHNP role enhances access to specialised mental health care and also supports emergency staff (Wand & White, 2015)

NP working in Emergency Department (ED) Triage 4 & 5 (sub-acute)

The role of the Emergency NP (ENP) was first developed in the USA in 1967 (Silver, et al., 1967). In underserved areas, where patients had limited primary care access, registered nurses expanded their scope of practice to meet the service needs of the population to become ENPs and were employed as substitutes for primary care physicians (Silver et al., 1967). Initially Family NP were most widely used in ED as they were able to see patients across the lifespan (DiCenso et al., 2010). The EPN role in the USA was mostly centred around the management of low acuity patients (DiCenso et al., 2010). In the early 1980s Canada introduced the first ENPs. Similar to USA, EPNs provided care to low acuity patients (Thrasher & Purc-Stephenson, 2007). With the rising number of patient complaints concerning patient waiting times and poor quality of service, the first ENP in the United Kingdom (UK) was introduced in 1988 (Wilson, Zwart, Everett & Kernick, 2009). Similar to the USA and Canada the EPN role in the UK came about because of overcrowding in EDs and service demand. The ENP is most commonly used in the UK to provide service for walk-in centres and minor injury units (Fotheringham et al., 2011). The UK has evolved over the past ten years and is now also established an acute care NP who manages more acute patients in the ED (Norris & Melby, 2006).

In 2009, ED remains the most common clinical field in which Australian NPs are employed (n=63, 30.3%) (Middleton et al., 2011). The ENP model of care is the fastest growing NP model in Australia with a 61% increase over the three year period between the first and second NP census (Middleton et al., 2011). This clearly differentiates the Australian model from the general/family practice role most common in the United States and Canada (Jennings et al., 2015). Similar to what has been seen in the USA, Canada and the UK the development of the ENP role has been driven by service delivery gaps in EDs, particularly for patients presenting with low acuity minor injuries

and illnesses in a fast track model of care (Considine et al., 2006). The introduction of fast track areas, together with the increasing uptake of the ENP role, has been shown to reduce waiting times and positively influence service delivery for patients in ATS Categories 3–5 (Jennings et al., 2008). However, concerns have been raised that limiting NPs to minor injuries and illnesses when they may be needed to care for higher acuity patients, particularly in the rural setting, limits the use of their specialist skills and the full potential of the role (Haines & Critchley, 2009).

NP working in Neonatal Intensive Care Unit (NICU)

The role of the Neonatal NP (NNP) is the oldest acute care role, was first developed in the USA in the 1970s (Robson, et al., 2002). The international NNP role evolved mainly as a response to medical staff shortages brought about by the changes in medical training of neonatal residents, reduced time spent in specialty areas (Bullough, 1995; Dunn, 1997), increased demand for neonatal care as neonatal survival rates improve, and neonatal care became more complex (Farah et al., 1996). Experienced nurses working in the area wanted more responsibility and autonomy, hence the development of the NNP role (Trotter & Danaher, 1994). Around the turn of the century similar trends in the UK and Canada resulted in the emergence of NNPs (Dillon & George, 1997; Follett et al., 2017; Snell, 2014).

The “traditional” model of NNP practice in the USA, UK and Canada is described as being functionally equivalent to that of a junior doctor, with the exception of tasks that NNPs are not legally sanctioned to perform (Robson et al., 2002). In this model, NNPs provide medical care and management to neonates, either from admission to discharge from the NICU or SCBU (Follett et al., 2017), or during the most acute phase of their illness (Robson et al., 2002). In some neonatal units, NNPs work alongside junior medical staff, generally with their own caseload of patients (Robson et al, 2002), whilst in others, care is managed entirely by NNPs and attending neonatologists (Follett et al., 2017). Studies suggest NNPs spend the majority of their time in direct patient care, with an emphasis on technical and diagnostic skills, and relatively little time in research, education, or leadership activities (Dillon & George, 1997; Follett et al., 2017; Snell, 2014; Trotter & Danaher, 1994). Fox (1997) describes NNPs in the UK as working as a member of the medical team, participating in the junior doctors’ roster and having little

contact with patients as nurses. Follett and colleagues (2017) suggest NNPs as working within a model of holistic practice that blends medicine and nursing. She stresses the need to define the unique contribution of NNPs to healthcare delivery.

In Australia the first Neonatal NPs (NNPs) were authorised to practice in neonatal settings in 2005 (Fry, 2011; Hussey, 2008). In 2009 NNPs are the twelfth most common clinical field in which Australian NPs are employed (n=5, 2.4%) (Middleton et al., 2011). The introduction of the NNP was created due to medical staff shortages similar to those seen internationally (Robson et al., 2002). NNPs are employed to undertake a clinical load caring for babies and their families in the NICU, Special Care Baby Unit or on the postnatal ward (Hussey, 2008). NNPs role includes attending high risk deliveries, undertake retrievals of sick babies in metropolitan and country hospitals (Hussey, 2008), consultations with parents to discuss neonates progress (Robson et al., 2002), research (Hussey, 2008) as well as mentoring and educating other nurses (Robson et al., 2002). There are a number of benefits for the neonatal unit of having NNPs on staff including they contribute to a more stable workforce where traditionally there has been a rapid and high turnover of medical registrars (Hussey, 2008) and NNPs complement the skills mix of registrars (Hussey, 2008).

2.3 Justification for Australian Nurse Practitioner Services in 2008

Many factors have led to workforce reforms and the justification of NP Services in Australia. The transition of nurse education from a hospital setting to the tertiary sector in the late 1980s led to the preparation of nurses with strong theoretical underpinnings to support their clinical practices. Experienced nurses who had received their qualifications through hospital training were encouraged to consolidate their extensive clinical expertise by gaining academic qualifications. These academically prepared nurses with extensive clinical expertise, more than any other group in nursing history, were prepared to push the clinical boundaries. Further, there was a need to support nurses who were performing skills beyond the historical boundaries of their profession and who sought to have this extended skill set formally recognised. Achieving this

through the introduction of legislation as well as appropriate qualifications created a level of protection thus far unseen (Laurant et al., 2005; Lloyd & Ross, 1997).

Nursing sought to protect the clinical domains of nurses in a political climate where health officials, in an attempt to contain costs, had entertained the idea of replacing RNs with less expensive care providers such as assistants in nursing or personal care attendants (Horrocks et al., 2002; Laurant et al., 2005; Lloyd & Ross, 1997). However, nursing organisations in Australia voiced strong concerns about replacing experienced and qualified staff with an essentially unregulated workforce (Wilson et al., 2005). To retain experienced nurses and to create a capacity to meet the changing demands for health service delivery required the innovation and expansion of existing roles and the development of new ones. In underserved areas such as sexual health, mental wellbeing and drug and alcohol services there was a high patient demand, which was another factor to support the development of the NP Service (Chang et al., 1999; Hooke, Bennett, Dwyer, van Beek, & Martin, 2001; Wilson et al., 2005). Each of these factors played an integral part in the evolution of new NP nursing roles (Laurant et al., 2005; Lloyd & Ross, 1997; O'Keefe & Gardner, 2003).

The changing demographics of the Australia people meant many of them no longer live close to a GP or hospital facilities. Unlike nurses, there is an uneven distribution of medical practitioners across the population, particularly in rural and remote Australia (Armstrong, Gillespie, Leeder, Rubin, & Russell, 2007; Garling, 2008). The Garling Report, a Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals, found that newly qualified medical practitioners preferred employment in specialist areas (mostly metropolitan or large urban appointments) rather than work as GPs. Garling postulated that this reflected the medical practitioners' preference for specialisation, which would provide greater financial rewards rather than provide generalist work where the need is greater (Garling, 2008). It was the positive attitudes of the people supporting the establishment of the NP Service in Australia that created a niche to be filled by NPs to ensure availability of health care service delivery in underserved locations.

Finally, there is widespread agreement that to improve the ability of health services to meet demand, the health care system needs to focus more on prevention, early

intervention and better management of chronic illnesses and less on acute care (Department of Health & Ageing, 2005). In Australia, there has been increasing recognition that resources need to be targeted for populations with the greatest need (e.g., Indigenous and aged communities). Better links are required between acute, primary and rehabilitative services, and more innovative health care service models for rural and remote communities are required. Historic medical models that focused on isolated, fee-for-service treatment of acute care, growing out-of-pocket expenses for consumers and staff shortages in the health workforce made addressing the need for change very difficult (Armstrong et al., 2007). It is in rural and remote Australia that nurses form the largest health professional group (AIHW, 2014a), often filling the gaps created by an absence in the medical workforce.

Traditional health care roles and responsibilities, including positions in nursing, are continually examined with new roles being developed (Department of Health and Ageing, 2013). There is growing government interest in role diversity, especially for nursing (Gardner, 2004). There is an unsubstantiated conjecture that medical practice is the point of reference of efficacy and safety in health care (Flin, 2007; Hales & Pronovost, 2006). In addition, although an NP is a highly experienced professional, the most common service chosen for its comparison is the junior doctor (Kinnersley et al., 2000; Sakr et al., 1999). Notwithstanding this approach, earlier studies have shown that NP Services are a safe and efficient way of providing quality health care when compared with medical practitioner care (Gardner et al., 2004; Middleton et al., 2007).

Research has shown that NPs can offer beneficial services and fill gaps in health care provision in both primary and acute care settings (Ball, 2006; Gardner, 2004; Gardner, et al., 2006a; Gardner & Gardner, 2005; Hughes & Carryer, 2002; Pearson, Wiechuka, Court, & Lockwood, 2007; Sherwood, Brown, Fay, & Wardell, 1997). When compared with medical practitioners and other health clinicians, the care provided by NPs is not the same (ANMC, 2006), with the NP role complementing and overlapping existing health care service practices (Gardner, 2004; van Offenbeek & Knip, 2004). In a collaborative environment, patient care is shared between NPs and medical practitioners on the bases of knowledge and expertise (Henneman, 1995; Wilson, et al., 2005).

Some clinicians have described the NP as a substitute for or extension to the role of a medical practitioner (Hoffman, Tasota, Scharfenbery, Zullo, & Donahoe., 2003; Horrocks et al., 2002; Laurant, et al, 2005; Martínez-González et al., 2014). This view resulted in NP research that addressed questions related to the safety or accuracy of NPs compared with medical practitioners (Hoffman et al., 2003; Laurant et al., 2005; Martínez-González et al., 2014) or compared them with physician assistants (Hooker & Cipher, 2005; Martínez-González et al., 2014). The practice of comparing NPs in this way potentially undervalues NPs, who have legislation to protect their nursing scope of practice that does not define them as a medical proxy. In the literature, where there is a comparison made, it is often between an extremely experienced NP and a relatively inexperienced medical officer (Hartley & Repede, 2011; Horrocks et al., 2002; Li et al., 2013; Martínez-González et al., 2014; Santry, 2010). As previously identified, this is not helpful to either subject of comparison. Such comparisons are based on the unsubstantiated conjecture that medical practice is the benchmark of efficacy and safety (O'Brien, Wyke, Guthrie, Watt, & Mercer, 2011). Notwithstanding, there have been studies that have shown that NP Services are a safe, efficient and economical way of providing quality health care compared with medical practitioner care (Carter & Chochinov, 2007; Gardner, et al., 2008; Horrocks et al., 2002; Jennings, Lee, Chao, & Keating, 2009; Laurant et al., 2005; Newhouse et al., 2011; Martínez-González et al., 2014).

2.4 Justification of the Thesis Aim

In 2008, little was known about the early implementation of the Australian NP Service and research was sparse. There was nothing published that gave insight into what the NPs themselves and associated health professionals and patients thought and understood about the recently introduced model of care. Similarly, there was little information that addressed the integration of the NP into existing health care services. These gaps in the existing literature gave rise to this study. The candidate wanted to include the patient's perspective to understand whether the new model of care in fact improved their experience in the health service. Another factor that influenced the development of the

aim for this study was the ability to create evidence that could be used by health care administrators and service planners when they were developing future service plans. Sustainability of the NP Services could be enhanced by improving the understanding of decision-makers regarding the implementation and integration of those early services.

2.5 Summary

This chapter has provided a brief overview of the development of NP Services in the USA, Canada and the UK, followed by the development of NP Services in Australia. Historical developments related to the evolution of NP Services in the USA, Canada and the UK were used to inform the establishment of NP Services in Australia. The origins of the Australian NP Service and obstacles to the establishment of the service were discussed prior to presentation of the integrative literature review, capturing literature from January 1990 to November 2008. The integrative review examined the international evidence to determine what was known about the NP Service. The review then concentrated on an Australian perspective and what was known about the early implementation of the NP Service, what studies have been conducted on NPs and what the perceptions were of the NPs, health professionals and patients about the Australian NP Service. The integrative review was updated in October 2016 and summary results are included. The chapter concluded with a justification for the NP Service in Australia. The next chapter outlines the theory and the application of the methods chosen for this thesis.

Chapter 3: Methods

This chapter is divided into two sections; Section 1 includes the Theory of Methods (Methodology), and Section 2 contains the Application of Methods. The Theory of Methods (Section 1) provides the justification for situating the study within the naturalistic paradigm of inquiry and for employing a case study approach. Philosophical perspectives, methods and validation techniques relevant to the chosen methodology will also be discussed. The Application of Methods (Section 2) includes a description of the site selection process, data sources, collection methods used and data analysis. Ethics approval procedures and ethical considerations pertaining to this research are addressed at the end of this chapter.

Section 1: Theory of Case Study Method (Methodology)

As illustrated in the literature review chapter (Chapter 2), research on the early implementation of the Australian NP Service (including activity in NSW) was lacking. To understand the early implementation of the NP Service required a methodological approach that would facilitate exploration of a phenomenon within its natural, ‘real-life’ setting to capture the phenomenon’s natural behaviour. Such a methodological approach was necessary to ensure that the issue was not explored through just one lens, but rather through a variety of lenses, allowing multiple aspects of the phenomenon to be uncovered in order to capture the truth of the phenomenon of interest (Stake, 1995, 2006). It also required a method that would enable assimilation of a variety of data sources, such as participant observation, medical record audit and semi-structured interviews.

Case study method provides tools for investigators to study complex phenomena within their natural settings. As a research tool, case study has an extensive history in the social sciences and health (Hyett, Kenny, & Dickson-Swift, 2014; Yazan, 2015; Yin, 2003, 2009). Because of its flexibility and rigour, this approach has been identified as valuable in health research to develop theory, evaluate programmes, and develop interventions

(Abma & Stake, 2014; Carolan, Forbat, & Smith, 2016; Hyett, et al., 2014; Stake, 1995, 2006). Case study also offers health researchers a flexible method to capture a holistic perspective of the phenomena within a real-life context (Abma & Stake, 2014; Stake, 1995, 2006). This method can be used by the researcher to explore individuals and organisations, simple through to complex interventions, multiple relationships and programmes (Stake, 1995, 2006; Yazan, 2015; Yin, 2003, 2009).

Several typologies of case study are described in the literature (George & Bennett, 2005; Stake 1995, 2006; Thomas, 2011; Yin, 2009). The two most commonly cited typologies are the typology proposed by Robert Stake (1995, 2006) and that proposed by Robert Yin (2003, 2009). Both typologies search for ways to guarantee that the topic of interest is well explored and that the reality of the case is discovered. However, the methods that each case uses are dissimilar and are worthy of further discussion in this section of the chapter.

The purpose of this section is to give an overview of case study research. This includes the philosophical underpinning of constructivism and justifying the use of case study research for this study. The advantages of using case study as a research method are described, data collection strategies identified and data analysis techniques discussed. To conclude this section, strategies for achieving validity, the justification for case study method and the structure of this intrinsic case study are discussed.

3.1 The Philosophical Underpinning of Constructivism

A study's philosophical underpinning permeates every part of the research, from identifying the case to the reporting of findings (Creswell, 2014). In the literature, the inability to assign a fixed philosophical perspective to case study research is acknowledged, as is the variation depending on the type of case study selected (Luck, Jackson, & Usher, 2006; Stake, 2006; Yin, 2009). Luck and colleagues (2006) identified the flexibility in definition and use of case study research, and stated that given the vagaries of the real-life clinical setting, case study research can move towards a paradigmatic openness. This means that case study research is not attached to any

ontological, epistemological, or methodological position and can therefore become a bridge across the traditional research paradigms. Purists of qualitative research would disapprove of any need for a bridge across paradigms or paradigmatic flexibility given the “accommodation between paradigms is impossible” stance proposed by Guba (1990, p. 81). The pragmatists defy paradigmatic flexibility when mixing qualitative and quantitative research methods and argue that research methods cannot be assumed to have a fixed one-way ontological or epistemological commitment (Howe, 1988). With such diverse philosophical viewpoints, it is not surprising that Stake (2006) and Yin (2009) have their own epistemic philosophies that influence their views on the case study methodology and the stages they advise researchers to follow while undertaking case study research (Creswell, 2014; Creswell & Plano Clark, 2011; Yazan, 2015).

Stake (1995) based his approach on a constructivist paradigm and quantified this by declaring “most contemporary qualitative researchers hold that knowledge is constructed rather than discovered” (p. 99). Constructivists assert that truth is relative and that it is reliant on one’s viewpoint (Creswell, 2014; Merriam, 2009; Yazan, 2015). This approach recognises the significance of the individual human conception of meaning, but does not discard the concept of objectivity. Stake considers case study researchers as interpreters, who gather their interpretations and are then required to narrate their version or construction of the created knowledge or reality that they collect through their research (Stake, 2006). Also relevant to Stake’s (1995) philosophical position is his assertion that “there are multiple perspectives or views of the case that need to be represented, but there is no way to establish, beyond contention, the best view” (p. 108). Constructivism is put together on the principle of a social construction of reality (Creswell, 2014; Yazan, 2015). Close partnership between the participant and investigator is one of the advantages of this type of paradigm, and it enables participants to tell their stories (Creswell, 2014). Through their stories, participants can refer to their views of reality and this provides the investigator with a clearer understanding of participants’ encounters (Creswell, 2014; Yazan, 2015).

Although Yin (2003) does not clearly state his philosophical underpinning, Yazan (2015) suggested that Yin appeared to have leanings towards a positivistic approach. A positivistic approach to research requires three fundamental concepts: objectivity,

validity and generalisability (Creswell, 2014). If the researcher claims that their study findings will produce established factors (Creswell, 2014) a positivistic underpinning exists. Yin's (2009) approach to case study research follows the positivistic belief and is based on four conditions associated with the design quality: internal validity, external validity, construct validity and reliability (Creswell, 2014).

As a novice, the candidate epistemologically located her work close to the constructivist paradigm, and more aligned with Stake's philosophical position than Yin's. The candidate understood there are numerous realities through which one can make sense of the situation, and she created her reality from her experiences. This perspective is entrenched in the qualitative research methodology undertaken. The experience of inquiry for the researcher is a process of interpretation and of making sense of the phenomenon under investigation.

The theoretical framework of this thesis on exploring the early implementation of the NP Service in NSW enables the candidate to investigate a "bounded system" (Stake, 2006) or case, utilising informative and contextual data to interpret findings about the phenomenon. The bounded system explains limitations determined by the researcher (Stake, 2006). The researcher's interpretation leads to a more complete understanding of a specific aspect of a situation and provides affective information that could not be collected otherwise (MacNealy, 1997). This constructivist approach guided the data collection and analysis components of this case study.

3.2 Background of the Case Study as a Research Method

Case study as a research method and a term used in the research literature has a varied history of application (Baxter & Jack, 2008; Hammersley, Gomm, & Foster, 2000; Hyett, et al., 2014; Jensen & Rodgers, 2001; Nieswiadomy, 2011; Ross & Tissier, 1994; Simons, 2009; Yazan, 2015). Historically, case study research has reportedly been used excessively at times and almost disused at others (Baxter & Jack, 2008). Various philosophical beliefs have guided the growth of the case study method throughout the past two centuries, from disciplines such as sociology and anthropology (Carolan et al.,

2016) to science and single case investigations (Yin, 2009). Prior to the recent surge in mixed methods research, case study research was generally empirical and related to social workers' case history or case work (Carolan, et al., 2016; Yazan, 2015).

The earliest use of case study research can be traced to Europe, and predominantly France, in the late 1820s (Tellis, 1997). In the early 1900s, the method was associated with the Chicago School of Sociology, in the USA (Platt, 1992; Tellis, 1997), where work centred primarily on the study of life histories and case work in social work (Hamel, Dufour, & Fortin, 1993). Traditional approaches to case study research have changed over time (Simons, 2009). Prior to the 1930s, the discovery of personal meaning was a feature of the case study. At that time Chicago, like other parts of the USA, was experiencing increased immigration, and various personal aspects of immigration of the different national groups, such as poverty, housing and unemployment, were studied using the case study method (Hamel et al., 1993). This personal meaning characteristic had disappeared from case study research by the 1960s. Simons (2009) described the historical origins in the Chicago School and the recurrent presence of case study content in sociological research, justifying why observing participants was advantageous as a data collection method.

Over time, case study research has assumed features of multiple and intensive data collection strategies, including, but not limited to, observation, interviews, documentation, archival records and physical artefacts (Carolan, et al., 2016; Simons, 2009). Case study method also supports the deconstruction and the consequent reconstruction of various phenomena (Stake, 2006; Yazan, 2015; Yin, 2003). When used as a research method, case study is both the process and the product of the investigation. Case study provides a distinct boundary for investigation. It is an organised process, within which any methods suitable for exploring a specific case can be applied (Abma & Stake, 2014; Carolan, et al., 2016; Yin, 2009).

3.3 Defining the Case Study Method

Case studies are often used to describe, explore, explain or analyse the case of interest (Yin, 2009). They enable the researcher to define a holistic and meaningful context, and understand relevant real-life events (Stake, 1995; Yin, 2009). Because case studies are undertaken in a real-life setting, the phenomenon of interest is interwoven with the context of study (Stake, 2006; Yin, 2009). Case studies can offer useful, specific and consistent descriptions of a phenomenon, as well as connect practical complex events with theoretical concepts (Carolan et al., 2016; Stake, 2006).

Yin and Stake disagree about whether the researcher contributes knowledge or theory to the case study method. Stake (1995) asserted that theory can be absent from studies that focus on describing the case and its issues. According to Stake (1995), his definition of “case study is not a methodological choice but a choice of what is to be studied ... by whatever methods we choose to study the case” (p. 443). In contrast, Yin (2009) postulated that theory could be used to guide the case study in an exploratory way and his definition stated that “A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p. 18). Stake (1995) postulated that case studies seldom yield entirely new understandings but rather amend generalisations that may be further modified with additional case studies. Furthermore, certain events come up in many cases because of the great deliberations in a multifaceted phenomenon. In contrast, Yin (2009) argued that the implication is that all researchers involved in case study method need to draw on existing theory to direct the data collection and analysis.

While case study as both process and product clearly supports a qualitative approach to research, a case study may be methodologically designed such that the process and product offers an evaluation of the case (Luck, et al., 2006). Case studies can be classified as either an empirical or theoretical investigation (Byrne & Ragin, 2009). It has also been claimed that practically all social scientific studies are case studies because they are an exploration of social phenomena (Byrne & Ragin, 2009). Case

study research is an intensive, comprehensive, focused, in-depth study that examines or investigates a single unit—the case (Carolan, et al., 2016).

There are multiple definitions and understandings of the case study method. Case studies generally explore, explain or describe phenomena of interest and facilitate holistic and significant situations, relevant knowledge and understandings about real-life happenings (Stake, 1995; Yin, 2009). The case study method can be used to comprehensively explore, understand or analyse a reasonably common phenomenon or one that occurs infrequently (Yin, 2009). Case study method is undertaken in a real-life situation where the phenomenon of interest is woven with the situation of the study (Stake, 2006; Yin, 2009). Case studies have the ability to propose useful, specific and consistent accounts of phenomena, linking practical, complex happenings to theoretical ideas (Stake, 2006).

3.3.1 Identifying the Case

There are difficulties associated with defining the term case study, and the term *case* also conveys a diversity of meanings. Before commencing a study, it is important that the researcher defines his or her meaning of the term *case* and define the case study (Byrne & Ragin, 2009). The case is a recognisable specific, complex, integrated system that is the entity of study, rather than the process (Stake, 2006). Yin (2009) said that the case is used to describe a real situation and is consequently matched to naturalistic, real life inquiry (Abma & Stake, 2014; Carolan, et al., 2016).

Stake (2006) asserted that the first criterion in selecting a case should be how to maximise what can be learned about it. The term ‘thick description’ is often used to describe how to collect the data (Geertz, 1973; Ponterotto, 2006; Stake, 2006). This infers delving deep into the meaning and importance of what is being observed. While thick description is the aim, the actual depth is often dependent on the time available and the accessibility of the case. The case reveals events of interest and understanding about multifaceted human interactions. Personal connotations are established through multiple data collection methods, including continuous engagement in the field of study

(Stake, 2006). Byrne and Ragin (2009) asserted that distortion or corruption of the term 'case' as a basic methodological construct, can occur over time when the term is constantly redefined. There are some identifiable and fundamentally accepted characteristics of the term 'case' that are consistent with the notion that a case study is a connection between the paradigms and underlying assumptions of the study (Byrne & Ragin, 2009). These characteristics include the case being a single specific phenomenon or multiple phenomena that are bound together, thereby classifying the case as a system (Carolan, et al., 2016; Stake, 2006).

3.3.2 Binding the Case

Case study research can be bound by time, place (Byrne & Ragin, 2009), event or activity (Stake, 2006). These boundaries can support in controlling data collection (Yin, 2009), and help the researcher maintain focus on 'the case' (Stake 1995; Yin, 2009). Boundaries are clearly set by the investigator, via the portrayal of the location, culture, institution, or group process (Stake, 1995). The boundaries define the scope of a research project and indicate what will and will not be studied. Comparable to the development of inclusion and exclusion conditions for sample selection in a quantitative study, boundaries are established in a qualitative case study design. The difference is that these boundaries also specify the depth and breadth of the investigation and not merely the sample to be included (Baxter & Jack, 2008). Stake (1995) found that sometimes it is difficult to distinguish the case from the context. Despite these challenges, it is essential that the boundaries of the case are clearly discrete from events, behaviour or actions that are outside the boundaries of the phenomena (Carolan, et al., 2016; Stake, 1995).

3.3.3 Types of Case Studies

When describing types of case studies Yin (2009) and Stake (1995) use different terms. Yin (2009) used three terms to describe the types of case study design: exploratory,

descriptive and explanatory. Exploratory case studies are used to describe a research question or study the possibility of a future in-depth study, descriptive case studies aim to present a comprehensive account of a case, while explanatory case studies attempt to offer a cause-and-effect relationship (Yin, 2009). Additional classifications, as suggested by Yin (2009), include identifying if they are single or multiple cases and whether a single or multiple 'unit of analysis' applies.

Stake (2006) offers an alternative set of definitions: he described the case as a specific unit that must first be understood before the phenomenon of the case can be studied. He also used three terms to describe case studies: intrinsic, instrumental and collective. Intrinsic case studies are primarily undertaken because the case itself is of interest to the researcher. The intent of intrinsic case studies is to have a better understanding of the specific case (Stake, 1995). The case may or may not be typical of other cases; therefore, the results may have limited transferability (Stake, 1996). Baxter and Jack (2008) asserted that the researcher will be able more able to place limits on the scope of the study to increase the feasibility of completing the project if a case study proposal includes specific propositions. Propositions, as a declarative statement of a concept, mostly come from the literature, personal or professional experience, and/or theories or generalisations and can be supportive in any case study (Baxter & Jack, 2008). Using propositions, case study researchers aspire to ensure enough detail is provided so that readers can assess the credibility of the work (Flyvbjerg, 2011). Where it is difficult to make propositions because of limited information in the literature about the case, Baxter and Jack (2008) suggested that the researcher utilise the intrinsic case study method. The intrinsic case study requires a deep exploration of the case of interest and does not necessarily require a hypothesis or research objectives (Baxter & Jack, 2008; Stake, 1995). Generally, most intrinsic case studies include no framework that would normally be based on the literature (Baxter & Jack, 2008), and the inductive method of analysis leads to the creation of theories from observations or field notes (Stake, 1995).

Where there is a need for general understanding of a situation or phenomenon, an instrumental case study may be appropriate. An instrumental case study is used if the intent is to gain a general insight and understanding of a particular situation or phenomenon using a particular case (Stake, 1995). A good instrumental case requires

the researcher to provide a sound rationale for using a particular case (Stake, 1995). According to Stake (1995), there is no clear line distinguishing intrinsic from instrumental case study because there are often simultaneous changing interests. Instead, a zone of combined purpose defines them. The difference between an intrinsic and an instrumental case study is that the intrinsic case study seeks to develop a comprehensive understanding of a particular case for its own importance, whereas an instrumental case study seeks to provide an understanding into a wider issue or to theoretically refine a theoretical explanation. When instrumental study is extended to several cases, Stake (1995) described this as a collective case study.

Collective (or multiple) case studies provide an overall understanding of the phenomena using a number of instrumental case studies that happen at the same location, or they can come from multiple locations (Stake, 1995). According to Stake (1995), collective case studies may be considered an extended instrumental case study. They seek to explore how single cases can be 'meaningful' to other cases when they share a common characteristic or condition or are examples of a phenomenon (Stake, 2006). In this type of case study Stake (2006) used the term 'quintain' to describe an object, phenomenon, or condition to be studied. Stake (2006) emphasises that in a multiple case study, the focus of inquiry shifts from an understanding of the singular case to an understanding of the quintain.

Yin (2009) described Stake's use of the term 'collective case studies' as analytical generalisations. Yin indicated that a typical format when multiple cases are studied is to provide detailed information about each case, put themes into each case, then compare the themes across the cases (Yin, 2009). Thus, typological classifications of case studies derived from Yin (2009) and Stake (1995, 2006) are primarily determined by sample characteristics and the purpose of the research.

3.3.4 Single or Multiple Case Study Design

While identifying the case and the specific type of case study to be conducted, investigators must consider whether to conduct a single case study or a multiple case

study. Yin (2009) suggested four types of case study design, including the single holistic design, single embedded design, a multiple holistic design and a multiple embedded design. The single holistic design involves one unit of analysis, whereas embedded designs involve multiple units of analysis (Yin, 2009). Stake (2006) suggested a holistic case study with embedded sub-units facilitates the investigator's search of the case while considering the effect of the various elements. Yin (2009) argued for holistic rather than embedded case studies because a holistic case study examines a more global concept such as the phenomenon of interest, whereas the embedded case study has any number of units.

The ability to look at embedded sub-units that are situated within a larger case is powerful because data can be analysed within the sub-units separately, between the different sub-units, or across all the sub-units (Baxter & Jack, 2008; Stake, 2006; Yin, 2009). This ability to participate in such rich analysis only assists to better illuminate the case (Baxter & Jack, 2008). A multiple case study method is required when a study contains more than a single case, and it allows the researcher to analyse data both within each setting and across settings (Stake, 2006). Researchers who advocate multiple case studies can also value the specific feature of a single case study. In a multiple case study, the investigator examines several cases to comprehend the differences and similarities between the cases and thus a better understanding of the phenomenon (Baxter & Jack, 2008). Although there are advantages and disadvantages associated with multiple case study design, the overall process can be extremely time consuming and expensive to conduct. When identifying a multiple case study, Yin (2009) used the term 'comparative case method' while Stake (2006) named it a 'collective case study'. Yin (2009) supported the merits of multiple case studies as they have positivistic derivations and achieve the conceptual conditions of theoretical or literal duplication and support analytic generalisability.

It is not the similarities or differences in the selected cases but understanding of the shared case of interest that can be revealed through the cases that is most important (Yazan, 2015). To best explore and describe the phenomenon of interest, investigators can apply single or multiple case studies either qualitatively and/or quantitatively. When chosen, the single case study is valued for knowledge and insights about the case

(Stake, 2006).

Regarding this thesis, the phenomenon under investigation, or case, was the NP Service. This case was bound by time, 2008, and bound by geographic location, NSW. As the intent of this thesis was to gain a better understanding of the NP Service, an intrinsic case study, as identified by Stake, was used. A single, holistic case design was employed with the three individual NP Services being treated as three embedded sub-units. Using the three individual NP Services as embedded sub-units allowed for a deeper understanding of the phenomenon of interest, the NP Service, through exploration of the subunits, and analysis within, between and across sub-units.

3.3.5 Advantages of Case Study

One of the advantages of a case study approach is the ability to use multiple sources of data collection. Case studies may be considered qualitative, quantitative (Yin, 2009) or both, contingent on the purpose and design (Byrne & Ragin, 2009; Carolan, et al., 2016; Flyvbjerg, 2011; Yazan, 2015). When used in this way, Yin (2009) reasoned that case study is not a data collection strategy or a design on its own, but rather a method that can be considered an all-inclusive research approach (Yin, 2009). Case studies are well suited to qualitative approaches, with which they share a structure of contextual holism. A strong point of quantitative case study is derived from its ability to elucidate contributory associations (Flyvbjerg, 2011), and it may be undertaken as a meta-evaluation (Yin, 2009). These different examples highlight the flexibility of case study research and offer further support to case study as a mixed method research design. Circumstances within discrete cases determine which method is chosen (Byrne & Ragin, 2009; Creswell, 2014).

Another advantage of case study design is that the wide variety of data sources used in case study design ensure that the research is truly grounded in reality (Gray, 1998). Findings cannot always be generalised to other settings or groups, but they do provide a rich explanation and, consequentially, an in-depth understanding of a specific phenomenon in a real-life context (Gray, 1998). Case study research allows the

introduction of additional data sources to provide the depth required to investigate the research question (Byrne & Ragin, 2009). The detailed qualitative explanations often produced in case studies findings can help to explain the complexities of real-life events or situations that may not be captured through quantitative research (Creswell, 2014). Case studies may provide data of a richness and detail that are challenging to obtain from more representative research designs, but the approach also has limitations.

3.3.6 Limitations of Case Study Design

Despite its many advantages as a research method, case study research does have its drawbacks and critics. Interestingly, despite his assertions regarding the value of case study research, Yin (2009) argued that they lack precision. He posed three positivistic criticisms of case study: they lack rigour and generalisability, are prone to bias and “they take too long and result in massive, unreadable documents” (Yin, 2003, p. 11). Yin (2009) noted that many times the case study researcher has been careless and has accepted equivocal evidence or biased views to affect the direction of the research results and conclusions. Linked to this is the tendency of case study research to be undertaken by only be one investigator, which can lead to bias in data collection, which can in turn influence results more than in other research designs (Byrne & Ragin, 2009; Creswell, 2014). Despite the recognised limitations, Yin (2009) still supported the case study method as long as the limitations are recognised and acknowledged by the researcher. Baxter and Jack (2008) also identified that the data collected through case study cannot necessarily be generalised to the wider population, potentially limiting the usefulness of the findings, following a large body of work. This concern regarding a lack of generalisability was echoed by Abercrombie, Hill and Turner (2006).

Generalisability is a major feature that distinguishes a quantitative case study from a qualitative case study. While a quantitative case study is better suited to achieving generalisability, the purpose of the qualitative case study is its ability to describe one particular case in depth (Abercrombie et al., 2006). However, Flyvbjerg (2006) and Stake (2006) have disputed this, suggesting that those generalisability criticisms demonstrate erroneous assumptions about case study and its importance as a naturalistic

investigation. There is significance in the particularities of the case itself and it need not be justified with explanations of its exploratory focus, its typicality of other cases, its potential to lead to generalisations or be restructured at an early stage of theory building (Stake, 2006).

Linked to generalisability, Yin stated that case studies provide very little foundation for scientific generalisation since they use a small number of participants, some conducted with only one participant (Yin, 2003). Yin (2009) also considered case study to be 'microscopic' because of the limited sampling cases, and suggested that setting parameters and objectives of the research are far more important in case study method than creating a big sample size (Yin, 2009). The third argument made by Yin was that case studies are often labelled as too long, difficult to conduct and capable of producing a mass of documentation (Yin, 2009). This argument is the antithesis of Stakes's (2006) assertion regarding the need for thick description. The massive documentation generated is only a limitation if the researcher is unable to make succinct sense of the data when describing the findings of the study. The danger comes when data are not managed well and organised methodically (Stake, 2006).

Because of the case study's limited ability to contribute to evidenced-based research, it has been considered poor from a positivist perspective (Byrne & Ragin, 2009). However, this criticism has been dismissed by Flyvbjerg (2011) because of the capacity of case study to offer a high level of contextual, detailed knowledge, as well as the ability to connect theoretical abstractions with complex practice, which has been identified as being of particular value in health care research (Carolan, et al., 2016; Hyett, et al., 2014).

The researcher can overcome some of these traditional criticisms of the case study by the design of the case study and the procedures employed to support rigour (Yin, 2009). To address the issue of rigour, the researcher needs to apply the principles of validation or trustworthiness to their selected method, their theoretical intentions, and their philosophical situation (Byrne & Ragin, 2009; Carolan, et al., 2016; Flyvbjerg, 2011).

3.4 Data Sources and Collection Methods in Case Study Research

In order to obtain rich multi-perspective holistic information and capture the intricacy of the phenomena of interest using case study research, both Yin and Stake agree that multiple data sources should be used (Stake, 2006; Yin, 2009). The epistemological stance Stake and Yin subscribed to influence the tools they used and how they conceived the entire data-gathering process. Stake (1995) suggested the exclusive use of qualitative data, whereas Yin (2009) supported the combination of quantitative and qualitative sources because he believed the different sources should be treated equally. Prior to discussing data-gathering procedures, Yin (2002) placed emphasis on the planning phase of data collection by stating “In actuality, the demands of a case study on your intellect, ego, and emotions are far greater than those of any other research strategy. This is because the data collection procedures are not routinised” (p. 58). While describing the process of data gathering, Yin (2009) identified the desired skills of the investigator, such as protocol development for the study and the screening of the case study participants, and included the need for the investigator to conduct a pilot study to assist with refinement of data procedures and gathering. In this latter feature, Yin agreed with Stake who strongly urged investigators to pilot each data-gathering tool prior to use in the proposed study.

The development of theoretical propositions prior to conducting the study should facilitate merging the evidence from the multiple data sources (Yin, 2009). The most commonly used evidentiary sources, as identified by Yin (2009), are documentation, archival records, interviews, direct observations, participant observation and physical items. Yin (2002) identified three general principles of data gathering, which included the use of multiple sources of evidence that converge on the same findings for the purpose of triangulation, a case study database to assist with the understanding of how to manage data and a chain of evidence that helps “follow the derivation of any evidence, ranging from initial research objectives to ultimate case study conclusions” (p. 83). According to Yin (2002), these principles contribute to data validation, which should be a priority in every phase of the process of data gathering.

Stake (1995) disagrees with Yin's proposal to plan every step of the investigation, stating that "There is no particular moment when data collection begins" (p. 49), since data gathering can lead to some essential adjustments in the inquiry process. The construction of the planning phase, according to Yin, should be done to avoid these essential adjustments (Yin, 2009). Although not as defined as Yin's account of data gathering, Stake (1995) emphasised the importance of the skills that are needed by investigators engaging in qualitative research. They include "knowing what leads to significant understanding, recognising good sources of data, and consciously and unconsciously testing out the veracity of their eyes and robustness of their interpretations" (p. 50). Unlike Yin, Stake didn't describe the strategies needed for the investigator to develop data-gathering skills.

Stake's case study protocol was not as structured and detailed as Yin's case study protocol. Instead, Stake's protocol suggested making a data-gathering strategy that should include a "definition of case, list of research questions, identification of helpers, data sources, allocation of time, expenses, and intended reporting" (Stake, 1995, p. 51). As for the data-gathering tool, Stake suggested the use of observation, interview and document review for qualitative case study research. In contrast with Yin, Stake denied the use of quantitative data sources since his account of case study research was exclusively qualitative. Neither Stake (1995) nor Yin (2002) discussed techniques of interviewing in the data-gathering process, but both indicated that researchers should plan to have either a prolonged or intense exposure to the study phenomenon. This should happen within context to collect and understand multiple perspectives, and to reduce the potential for socially desirable (rather than honest) responses to be given in interviews (Stake, 2006; Yin, 2009).

The collection and comparison of data gathered from various sources enhances data quality based on the principles of ideas coming together and confirming findings (Merriam, 2009). Data gathered for this study included observation and associated field notes, semi-structured interviews and medical record audits.

3.4.1 Observation

Observation is a data collection method and an analytic tool (Hammersley & Atkinson, 2007; Wolcott, 2009). The observer undertaking field work enters the naturally occurring context to watch, listen, examine, experience the phenomena of interest and record these findings, usually as unstructured field notes (Wolcott, 2009). Data are collected about the phenomenon in the real world or naturalistically (Patton, 2015; Stake, 2006). Data are therefore dependent upon the observer being open to finding knowledge about phenomena of interest that are embedded within situations or environments, and writing verbatim field notes about what they see, hear and experience (Patton, 2015). Importantly, the observer does not seek to manipulate or control the context within which the phenomenon is constituted (Hammersley & Atkinson, 2007).

There are two types of observations conducted in research: participant observation and non-participant observation. Participant observation means watching the situations, events or activities from inside by taking part, interacting and becoming a member of the group to be observed (Patton, 2015). Advantages of participant observation include the ability of the researcher to watch the natural behaviour of the participant, gain a better understanding of the participant, connect researcher and participants, and build rapport with the participant to achieve a better understanding of the situation (Hammersley & Atkinson, 2007; Stake, 2006; Watts, 2011). Disadvantages to participant observation include lack of observer objectivity, interpretation bias and involvement in 'groupism' where the observer may be required to take sides in group disputes to keep group membership (Hammersley & Atkinson, 2007). In case study research, one of the aims of observation is to provide vicarious experience for the reader by describing the physical context of the case (Stake, 2006). The benefit of participant observation is that it allows the researcher to see for themselves what occurs in a prescribed context rather than rely on the observations of others (Creswell, 2014).

When the observer watches the group passively from a distance without participating or influencing in the group activities, this is known as non-participant observation. Non-participant observation increases the researcher's objectivity and neutrality in the situation. As participants don't have a relationship with the researcher, they may be

more willing to disclose information in the setting than they would be if they had a rapport with the researcher. The non-participant researcher can remain detached from group dynamics and maintain an impartial status (Hammersley & Atkinson, 2007; Patton, 2015). The disadvantages of non-participant observation include subjectivity, the potentially unnatural behaviours of participants knowing they are being watched; and group suspicion of the observer, which may make them reluctant to share openly (Hammersley & Atkinson, 2007; Patton, 2015).

Using a purely non-participant observation is extremely difficult as the observer cannot understand a situation without some participation in it (Stake, 2006; Yin, 2009). The solution is for the observer to actively participate in some of the ordinary activities and observe others passively from a distance, thus using a combination of both participant and non-participant observation (Yin, 2009). How and when data saturation is achieved will vary between the different study designs. However, more researchers agree that when observed instances become repetitive (O'Reilly & Parker, 2012) and there is enough information to reproduce the study (Walker, 2012), data saturation is achieved (Fusch & Ness, 2015). Burmeister and Aitken (2012) added to the saturation discussion by indicating it is not just about sample size, but also about the depth of the data gathered in terms of richness in data quality and thickness of data quantity. Failure to reach data saturation impacts on the quality of the research undertaken and content validity is impeded (Fusch & Ness, 2015).

An essential component of participant observation is recording field notes as a means of documenting what occurred on a day-to-day basis. Field notes are often enhanced by the small details documented and help to form a complete picture of the observations undertaken (Hammersley & Atkinson, 2007). The taking of field notes can have five purposes, based on suggestions by Lofland and colleagues (Lofland, Snow, Anderson & Lofland, 2006). Firstly, they are a way of recording non-verbal cues such as gestures, facial expressions, tone of voice and body movements. Secondly, they provide an avenue for recording impressions, interpretations and experiences of people, settings and events. Thirdly, field notes offer a useful means to record descriptive information, important analytic leads and concepts under development. Fourthly, they are a way to notate personal thoughts of the researcher such as ideas, fears, mistakes, confusions,

breakthroughs and problems as they occurred. Finally, they assist the researcher to identify biases and prejudices as well as change attitudes towards people and events experienced over time (Lofland, et al., 2006). The two latter purposes provide ways for the researcher to learn from individual experiences and to develop a deep understanding of the phenomena of interest.

In this study, both participant and non-participant observation were used. All three sites required security access, so the candidate had to be granted access. Clinical staff at the three study sites were informed of the researchers' presence but initially not of the reason for her for being there.

3.4.2 Semi-Structured Interviews

To capture data that may not have been observed, data can be enriched using semi-structured interviews (Patton, 2015). Semi-structured interviews allow for focused, conversational, two-way communication to provide in-depth collection of data that reflect participant experiences, feelings, attitudes and opinions (Kvale & Brinkmann, 2009). One of the advantages of the semi-structured interview format is that it “provides a balance between structure and openness” (Gillham, 2005, p. 79). The interview schedule permits a systematic structure, but at the same time opens up the conversation to evolving matters (Gillham, 2005; Patton, 2015).

Jorgensen (2015) asserted that the attitude of the interviewer would influence the outcome of participant interviews. Semi-structured questions should be used to elicit detailed responses from participants, using inconspicuously asked probing and clarifying questions throughout the interview to verify accuracy of data collected (Jorgensen, 2015; Watts, 2011). The best probing is that which is responsive to what the participant is saying. Integral to the interview process is active listening, fully attending to the participant. This requires that the researcher give them complete attention and remove their own personal preconceptions and thoughts (Watts, 2011). Silence, on the part of the interviewer, is also crucial and can give the participant time to think and formulate their ideas before speaking (Patton, 2015). Once the purpose of the interview

has been explained by the researcher, the participant should lead the conversation, thus enabling them to express their opinions free from bias (Jorgensen, 2015; Patton, 2015).

The selection of participants for individual interview should be guided by the need to understand and clarify some of the outcomes from the participant observation. Stake (1995) wrote that case study research “is not sampling research, therefore it is not intended (or possible) to select a sample that is truly representative of all the characteristics of the case” (p. 4). The aim of selecting interview participants is to choose a sample that reflects both commonality and uniqueness of the characteristics of interest in order to provide balance and variety.

Building rapport with participants at the beginning and sustaining it throughout the interview was considered essential to create a safe atmosphere for effective communication (Hammersley & Atkinson, 2007; Patton, 2015). Patton (2015) suggested that the key to successful interviewing lay in being able to probe and explore the unspoken meaning as much as the spoken. Sometimes it is what the participant does not say that is the most powerful. Hence, a good researcher needs to be able to “hear” what is not said, and encourage the participant’s free and open dialogue.

To help influence the direction of an interview, a researcher should be guided by the participants’ non-verbal responses to questions. This approach allows the researcher time to engage with participants, being sensitive to and interested in their responses, while building an atmosphere of trust where participants are encouraged to talk, reflect, discuss and explore the issues of interest (Fontana & Frey, 2005). To fully engage participants, interviewers need to be aware of their own manner, language, use of verbal and non-verbal encouragement, and that when they choose to seek clarification they could potentially influence participants and thereby vary the participants’ responses (Fontana & Frey, 2005). Clarification should be used judiciously to ensure the interview elicits a true representation of the phenomenon of interest (Kvale & Brinkmann, 2009). In order to obtain the most accurate understanding of what was said, the interviews should be transcribed by the interviewer as soon as possible after the recording (Gillham, 2005).

In this study, semi-structured interviews with NPs, health professions and patients were used as a source of data. There were three separate question guides used (see Appendix 5a, b and c). Through the observation component, the candidate became known to most of the participants. The selection of participants for this interview component commenced in the observation component and is described in Section 2 (3.10.3).

3.4.3 Medical Record Audit

The rich information found in the patients' medical records is frequently used as a data source by researchers conducting clinical studies (Gearing, Mian, Barber, & Ickowicz, 2006; Gregory, 2007, 2012; Halm et al., 2009). The medical record is commonly used as a primary source of retrospective data for the purpose of evaluating health care quality or quantifying what was seen during an observation component or heard at an interview (Halm et al., 2009). There are a number of advantages in using data obtained from the medical record audit. These include the ability to access large amounts of clinical data at a relatively low cost, the ability to evaluate hypotheses pertaining to clinical research questions and collect documented information about a patient provided by a health care professional to quantify an observation (Gearing et al., 2006; Gregory, 2007). Data collection from a medical record audit involves reviewing specific sources within the record. Missing or incomplete data, difficulty deciphering or confirming written documented information and inconsistency in the quality of documentation among health care professionals are limitations of using data acquired from the medical record (Halm et al., 2009; Stake, 2006). To complete the audit, a data abstraction instrument should be used to record findings. Developing a data abstraction tool first requires the investigator to assess whether the required data are available in the patient medical record (Eder, Fullerton, Benroth & Lindsay, 2005). When developing a tool, the investigator should consider what type and amount of data will need to be recorded when deciding upon the format and structure of the data abstraction tool (Gearing et al., 2006). Reporting of audit results generally involves the calculation of a rate, percentage, mean, or other statistical measurement (Halm et al., 2009).

In this study, an audit of patient medical records was used as a source of data. A data abstraction tool, developed and validated by members of the AUSPRAC team, was used to quantify what has been seen during an observation component of this study. The selection of participants for this audit and specifics about the data abstraction tool are described in Section 2 (3.11.3).

3.4.4 Justification of the Order of Methods

Undertaking research involving multiple sources of data collection required reflection on the sequence of methods (Creswell, 2014) to minimise the effect of one process on others. Data collection was commenced using non-participant observations as the candidate believed these would be least influential on other methods, and would allow the candidate to become familiar with the routine and interactions of each NP before interacting actively within the environment. During the observation phase, interactions between the NP and other individuals were recorded to enable the candidate to gain a sense of workflow and activity to refer back to at a later stage. The next data collection source was interviews, first with health professionals working with the NP and then with patients seen by the NP. Interviews, as a data collection source, were intended to provide the candidate with an opportunity to explore aspects of the NP role witnessed during the non-participant observation phase. The final source of data collection was the medical record audit. This needed to follow the interviews, as consent to access the patient record was obtained from the patients at the time of their interview. The description of the data collection methods for this thesis can be found in Section 2 (3.11).

3.5 Data Analysis and Triangulation

There is no agreed set of methods of analysis for case study (Baxter & Jack, 2008; Carolan, et al., 2016; Simons, 2009; Stake, 2006; Yin, 2009). Yin (2009) indicated that data analysis is the least developed aspect of case study research and asserts “there are

few fixed formulas or cookbook recipes to guide the novice” (p. 127). Rather, analysis methods are selected in relation to the nature of the case. The different philosophical underpinnings of Yin and Stake to case study research appear also to have impacted their approach to data analysis. Yin’s (2002) definition of data analysis “consists of examining, categorising, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address the initial propositions of a study” (p. 109), which supports his stance of integrating quantitative and qualitative data.

Analytical techniques that Yin (2009) offered include explanation building, pattern matching, time series and programme logic models. Yin (2009) advocated the formulation of a hypothesis from the literature rather than creating one from the experience, meaning his initial case analysis was deductive. However, his description of iterative sampling closely resembled that of analytical induction. Iterative sampling is a process whereby a researcher moves back and forth between the embedded sub-units for data collection. Data analysis continues until the researcher reaches saturation and there are no new information or themes emerging (Fusch & Ness, 2015). The other three techniques of pattern matching, time series and programme logic models appear to support a positivist stance (Carolan et al., 2016). Yin (2003) indicated that because investigators will collect evidence that is both qualitative and quantitative, both types of evidence should be analysed. In his positivistic beliefs, Yin considered researchers to be able to reach objective validity or truth in respect to the cases they analyse (Yin, 2003).

In contrast to Yin, Stake (1995) adopts a naturalist constructivist stance and defined analysis as “a matter of giving meaning to first impressions as well as to final compilations” before adding “analysis essentially means taking our impressions, our observations apart” (p. 71). Stake’s (2006) arguments about data analysis are consistent with those he identified for data collection, where he included researcher instinct as the main source of data and made sense of this through his analysis, giving precedence to instinct and impression, rather than guidance by procedure. Stake (2006) claimed that although no single data analysis approach exists within case study research, the following four strategic ways of description, categorical aggregation, pattern matching and naturalistic generalisation would produce meaning and understanding of the case (Abma & Stake, 2014). Stake (1995) recognised that these strategies would not

constitute an appropriate method for conducting case study analysis, and added, “each researcher needs, through experience and reflection, to find the forms of analysis that work for him or her” (p. 77). Similar to a common trend in qualitative research, Stake suggested that investigators conduct data gathering and analysis simultaneously, meaning there is no exact time data gathering finishes and data analysis commences (Stake, 2006). The analysis phase is the point where the collection methods of Stake and Yin most diverge from each other (Carolan, et al., 2016; Stake, 2006). Yin (2009) indicated that researchers should focus on similarities to strengthen the rigour of their research.

Because of the lack of guidance in design, analysis and reporting of case study research, a group of researchers recently developed the DESCARTE model (DESIGN of CASE Research on health care) as a means of enhancing design, conduct and reporting of health care case studies (Carolan, et al, 2016). The DESCARTE model has three stages: firstly, the need for the researcher to state their philosophical stance, their positioning of ‘self’ and the ethical components of the research; secondly, determining the components of case study design; and thirdly, adopting three stances of data analysis—philosophical, strategic and integrative (Carolan, et al., 2016). This was published after the data analysis was completed for this thesis, but the stages identified in this study are similar to those conducted in this thesis.

Prior to the thematic analysis of the observation and semi-structured interview components, the medical record audit was analysed and the findings were used to conceptualise the case for this study – the NP Service. Using a concept model to map these ideas can assist in gaining a better understanding of the data (Yin, 2009), provided a fuller description of the case (Carolan, et al., 2016), and established a starting point for the thematic analysis (Carolan, et al., 2016; Stake, 2006).

3.5.1 Theme Building

The purpose of theme building is to discover patterns or themes in the data (Creswell, 2014; Hsieh & Shannon, 2005; Patton 2015). These themes are systematically

uncovered from the data using thematic analysis techniques (Braun & Clarke, 2006). Thematic analysis is a form of content analysis (Hsieh & Shannon, 2005; Braun & Clarke, 2006) that aims to represent the participants' perspective of events, beliefs and experiences by systematically drawing inferences from the text (Hsieh & Shannon, 2005). As a means of shaping themes, thematic analysis can be used as a tool to summarise or reduce large quantities of text into more manageable categories (Creswell, 2014; Hsieh & Shannon, 2005). Searching within embedded sub-units and then subsequently searching across them for embedded patterns is a valuable way to managing large volumes of data in a systematic way (Cohen et al., 2007). The goal of thematic analysis is to interpret, explain and understand the data, rather than simply describe it (Braun & Clarke, 2006). Data are initially de-contextualised to improve practical management and the extraction of themes (Braun & Clarke, 2006). Exploratory analysis of the data should initially be done to obtain a general sense of the data and its organisation (Creswell, 2014; Marshall & Rossman, 2014). A feedback loop applies in both inductive and deductive theme development (Hsieh & Shannon, 2005). The feedback loop allows data to be iteratively re-examined and re-coded to uncover different models and themes, thereby supporting conceptual linking and interpretation (Braun & Clarke, 2006). There is flexibility during development of themes, as they can be revised based on emergent ideas and new descriptions (Hsieh & Shannon, 2005).

Analysis in case study designs can be based on both categorised data and interpretation, that is, on analysis of frequencies as well as narrative description (Stake, 2006). During analysis, the data is sorted by focusing, culling, simplifying and abstracting the data into manageable units, within and across embedded sub-units. Points of difference should be noted and considered. Marshall and Rossman, (2014) suggested that exploration of alternative explanations from the data collection and discussion of elements in the data that seem to contradict the emerging themes could provide an alternative explanation of the phenomena under study.

Saldana (2009) stated that while thematic analysis is labour intensive, it yields detailed and sophisticated comparisons. Textual data is initially decontextualised, or reduced, then re-contextualised concurrently with the descriptive statistics, to ensure truthfulness of representing what the participants contributed to the evidence (Braun & Clarke,

2006). To allow for a comparison of the interviews data and the participant observations of the NPs, the two data types were coded separately and later compared (see Figure 3.1 for the research process). The process of using multiple data sources to check or confirm the accuracy of single data sets is known as triangulation. The process of triangulation will now be described in detail.

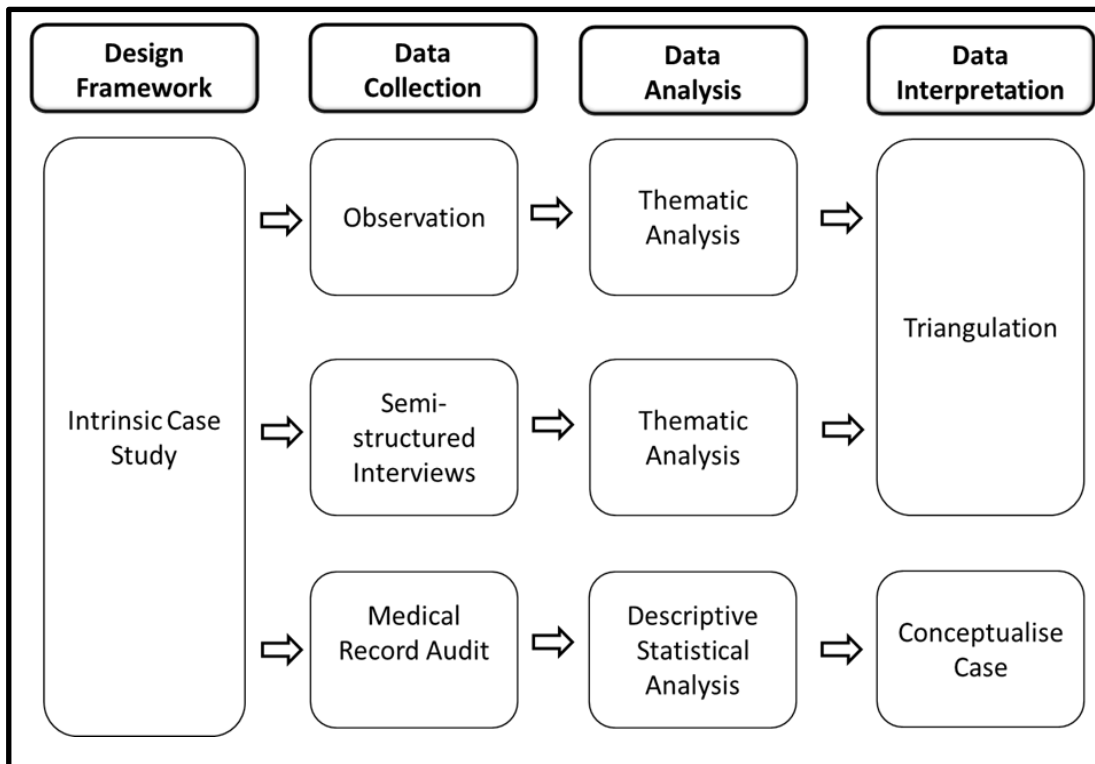


Figure 3.1: Research Process Used in this Study

3.5.2 Triangulation

The process of combining qualitative and quantitative evidence within case studies to facilitate the triangulation of multiple data sources has been suggested by a number of authors (Hammersley & Atkinson, 2007; Morse & Niehaus, 2009; Stake, 2006). Triangulation is a methodological strategy for enhancing the reliability of data collected. While most case study authors suggest methods and data sources can be triangulated (Hammersley & Atkinson, 2007; Patton, 2015), Stake suggested four strategies for triangulation by adding investigator triangulation and theory triangulation (Stake, 2006).

Triangulation of methods involves comparing and integrating data collected through the multiple qualitative methods (Hammersley & Atkinson, 2007; Patton, 2015; Stake, 2006).

Triangulation of data sources requires checking the consistency of various data sources against each other within the same method (for example, the semi-structured interview) (Hammersley & Atkinson, 2007; Patton, 2015; Stake, 2006). The term triangulation can also be used to describe when different researchers independently collect data on the same phenomenon and then compare their results and theories. Theory triangulation is a process whereby different theories are used to understand the data. This is also known as investigator triangulation (Patton, 2015; Stake, 2006). Data triangulation can counteract possible threats to the credibility of findings because the more frequently the same conclusion is found in more than one data source, the more credible the conclusions drawn (Hammersley & Atkinson, 2007).

One major advantage of case study methodology is the ability to combine or triangulate the different sources of data to highlight the case from the different perspectives (Yin, 2009). Triangulation of data sources and data types is a primary strategy that can be used in case study research to promote data credibility and validity, and it supports the notion that the phenomena can be viewed and explored from multiple perspectives (Merriam, 2009; Stake, 2006; Wolcott, 2009). Data interpretation requires extended analysis and significant intellectual and moral deliberation. Decisions made throughout the research process influence the interpretation of data (Wolcott, 2009).

3.6 Strategies for Achieving Validity in Case Study Research

Researchers have contended that studies are worthless without validity and rigour (Morse & Niehaus, 2009). Validity refers to the extent to which the findings are a truthful or accurate depiction of the phenomena being investigated (Morse & Niehaus, 2009). In the qualitative paradigm, validity is conceptualised as trustworthiness, rigour and reliability (Creswell, 2014). The validity of qualitative inquiry depends on the use

of rigorous methods, as well as the credibility of the researcher and a conviction in the value of qualitative inquiry (Creswell, 2014; Sandelowski, 2015).

To overcome some of the limitations of qualitative research, trustworthiness of the research is an important methodological issue that should be addressed (Schwandt, Lincoln, & Guba, 2007). The most prominent and much-cited classic trustworthiness work by Lincoln and Guba (1985) set out, in terms of a constructivist paradigm, what naturalistic inquiry is and it replaced the positivistic terms of validity, reliability and generalisability. Since this time, there has been a plethora of researchers attempting to articulate and list the criteria that describe the characteristics of what constitutes rigour in qualitative research (Creswell, 2014; Guba & Lincoln, 1989; Kvale & Brinkman, 2009; Merriam, 2009; Patton, 2015; Yin, 2009).

There are some researchers who disagree with the Lincoln and Guba's (1985) trustworthiness criteria and even ignore their work in their publications (notably Hammersley & Atkinson, 2007; Silverman, 2006; Silverman & Marvasti, 2008). However, there have been few alternative models that can be adopted by qualitative researchers to demonstrate the validity of study results.

Yin and Stake presented different opinions about data validation. Yin (2009) indicated that case study researchers need to guarantee 'construct validity', which could be achieved through the triangulation of multiple sources of evidence, pattern matching to obtain internal validity, external validity through generalisation and using case study protocols to achieve reliability (Yin, 2009). As discussed previously Stake used the four methods of triangulation when validating gathered data and added his concerns about validity by stating, "In our search for both accuracy and alternative explanations, we need discipline, we need protocols which do not depend on mere intuition and good intention to 'get it right'" (Stake, 1995, p. 107).

There are a number of strategic features that can be integrated with the study design to enhance the overall study quality and trustworthiness, including: the design of case study research question/s; purposeful sampling strategies; systematic data collection and management; and appropriate data analysis (Russell, Gregory, Ploeg, DiCenso, & Guyatt, 2005). Researchers emphasised the importance of trustworthiness in naturalistic

inquiry, suggesting four criteria upon which the trustworthiness of interpretivist research could be analysed: 1) credibility, 2) transferability, 3) dependability, and 4) reflexivity (Lincoln & Guba, 1985; Schwandt et al., 2007).

Credibility is increased with the use of multiple methods of data collection and triangulation of the findings (Lincoln & Guba, 1985). Different components of the data collection may provide different perspectives on the phenomenon being investigated (Yin, 2009). For example, during participant observation, the researcher may have provided a stronger insider's (emic) than outsider's (etic) perspective on what was witnessed. Through the process of triangulation, it is possible to confirm and contrast the outsider's (etic) with the insider's (emic) viewpoints and capture the real phenomenon of interest (Creswell, 2014). Researchers may seek to integrate a process of member checking or auditing as the data are collected and analysed, whereby the researchers' interpretations of the data are shared with the participants, giving participants the chance to discuss and clarify the interpretation, and add new or further viewpoints on the phenomenon (Baxter & Jack, 2008). An alternative approach taken by qualitative researchers to establish credibility is the use of reflection or the maintenance of field notes taken by the researcher, and peer examination of the data (Creswell, 2014).

Transferability of findings can be demonstrated through the reporting of thick descriptive data (Lincoln & Guba, 1986). The reporting of rich data can be achieved by the inclusion of information about the study sites and themes derived from the data with relevant participant quotes that support them. As indicated earlier, case study findings cannot necessarily be generalised to a wider population but, according to Yin (2009), transferability to similar settings is possible through the use of existing theoretical frameworks in all stages of the case study analysis. The extent to which research findings can be generalised to other groups is known as external validity (Creswell, 2014).

Dependability or reliability is the term used in qualitative research to demonstrate the extent to which the findings are consistent and could be repeated (Lincoln & Guba, 1986). This requires precise records of each step of the process to facilitate traceability

for external persons (Yin, 2009). An audit trail of gathered data sources and interview questions that focus on topics and themes relevant to observed behaviour can all serve as the sources of evidence (Yin, 2009).

Reflexivity is the process of becoming self-aware and involved in the method of assessing how the researcher has the potential to bias the outcome of the research either through the research process or the data interpretation (Schutt, 2012). Thus, reflexivity is a researcher's ongoing critique and critical reflection on their own biases and assumptions, and consideration of how these have influenced all stages of the research process (Blignault & Ritchie, 2009). Throughout a study, the researcher needs to continually evaluate their impressions and instincts, uncover significance and relate these to specific situations (Schutt, 2012). Providing a statement about the researcher's background and how this may have influenced the research is commonly suggested (Blignault & Ritchie, 2009).

For this thesis the candidate used an audit trail for maintaining and collecting the data. To ensure credibility the candidate continued he participant observation until data saturation occurred, stayed in the field for a period of 3 months, and analysed the data within the individual sites, between the sites and across the three sites. To ensure transferability, rich robust and comprehensive data was collected and compared within and across the three individual study sites. Dependability was addressed through the contribution of field notes, transcribed interviews and data abstraction from the clinical notes to create an audit trail. For confirmability an independent audit trail was undertaken.

The following table illustrates how the above criteria have been used in this study to assist in maintaining and collecting trustworthy data. The corresponding strategy and techniques used to achieve these criteria and the standard for each criterion are also described (see Table 3.1).

Table 3.1: Trustworthiness of Study

Interpretive Criteria	Strategy	'Standard' Criteria
Credibility Extent to which the results appear to be acceptable representations of the data (truth—verisimilitude)	Participant observation continued until saturation occurred Length of time in the field Three months conducting interviews Negative or deviant case analysis Analysis—within sub-units, between sub-units, across sub-units. Triangulation of data	Internal validity
Transferability Extent to which the findings have applicability in other contexts	Rich, robust, comprehensive data Comparison of three embedded NP units Limited transferability of findings to other times, settings, situations and people	External validity
Dependability Extent to which the findings are consistent and could be repeated	Audit trail of data through field notes, transcribed interviews and data abstraction from clinical notes. Questions focused on topics and themes relevant to observed behaviour within NP Services	Reliability
Confirmability Extent to which interpretations are the result of participants and NP Services as opposed to researcher bias	Independent audit process using NVivo8 and SPSS (v18)	Objectivity

Adapted from Lincoln and Guba (1985)

3.7 Justification of Case Study Method for this Thesis

The purpose of this study was to gain a rich understanding of the early implementation of the NSW NP Service in 2008. To investigate the NP Service within the context of this study, the candidate determined that the most appropriate methodology was Stake's intrinsic case study and to consider the phenomenon of interest, the NP Service, as a single case study. The three NP Services identified in this study became the embedded units of analysis to explain the implementation process of the NP Service. Therefore, the case, or unit of study, is the NP Service, not the three NP sites. This case is bound by time (the year 2008), and by geographical location (the state of NSW). By placing a boundary on the NP Service, this sets limits on what is and what is not researched (Yin, 2009).

As the NP Service already existed, this method can be classified as an intrinsic case study, which Stake (1995) suggested researchers with a genuine interest in the case should use when they want to understand more about the service they are investigating. This methodology was chosen to underpin this study for several reasons. Firstly, it

facilitated exploration of a phenomenon that little is known or written about, in this case, the NSW NP Service. Secondly, it offered the opportunity to gain a fuller and deeper understanding of the NP Service within the context in which this study is bound, that is, the year 2008 and NSW. Thirdly, it offered the opportunity to access a variety of data sources to inform the understanding of the phenomena including observation, interviews and the medical record audit. Case study research enabled the researcher to study the NPs in their natural setting and gather rich and in-depth data about the early implementation of the NP Service. The power of the intrinsic case study methodology lies in the fact that the findings can be strengthened by triangulating the data (Baxter & Jack, 2008; Stake, 2006). Triangulation means analysing data from the embedded units: within each individual NP Service, between the different individual NP Services (between case analysis) and across the three NP Services to provide a more comprehensive understanding of the phenomenon of interest (the NP Service).

A Canadian researcher used case study research to explain the implementation of the NP role in a Canadian province and concluded that “the use of case studies provides nurses with opportunities to engage with phenomena of interest in their settings and so is suited to the complex nature of nursing practice” (Sangster-Gormley, 2013, p. 6).

3.8 Structure of this Intrinsic Case Study

Stake and Yin had similar beliefs about the need for a conceptual structure for case study, although their ideas of organised structures differ (Stake, 2006; Yin, 2009). Both support the need for a compatible research question and the separate purpose of data-gathering questions. Case study method has the flexibility to allow in-depth focus on a single or specific ‘case’ (Stake, 2009, Yin, 2009) with all its particular complexities (Stake, 2006). As issues related to the phenomena of interest may initially be presumed, the research process and data-gathering techniques may only be tentatively developed and defined (Gray, 1998). Nevertheless, proposing a methodological strategy is desirable for rational and consistent qualitative research (Stake, 2006).

The current study was constructed as a single case study with the NP Service being the unique phenomenon, with three embedded unit (Stake, 2005) The three embedded units are the three NP Services explored to give a deeper understanding of the case. While there are a number of individual participants (embedded units) within the case, the case is singular. The three embedded units are the individual NP Services being explored. The current research is informed by the constructivist approach, the framework of a single intrinsic case study as defined by Stake (1995) and the concurrent data generation and analysis procedures of Stake (2006) and Yin (2009). The flexible conceptual structure of the study is rational with the issue questions. The current study is underpinned by the principles of case study design, specifically the aim of understanding knowledge about a real-life situation.

The case study approach was used to create an in depth multi-faceted understanding of the unique phenomena in its real world context (Stake 2005), where the NP Services were located. Data were gathered, analysed and presented concurrently with rich textual data to create as complete a picture as possible of the case: the NP Service. The qualitative data generation methods include observations with accompanying field notes and semi-structured interviews. The quantitative data are collected from the medical record audit. The physical boundaries for this case study included the selected NP Services with the physical boundaries derived from the implicit boundaries of time, 2008, and geographical location, NSW.

3.9 Summary

Intrinsic case study method allows the researcher to explore one case or several cases related to a single phenomenon and support the deconstruction and the subsequent reconstruction of various phenomena (Stake, 2006; Yin, 2009). There is general agreement that both qualitative and quantitative methods from traditional paradigms can be used together legitimately to analyse the case of interest (Baxter & Jack, 2008). The perspective offered in this methods chapter (Chapter 3) strives to establish how these different methods can be equally informative rather than distinctive.

Case study offers a flexible, practical yet rigorous approach to research. Within this practical and open structure, multiple and diverse methods can be coherently argued and applied. In addition, case study offers a bridge between the qualitative and quantitative paradigms. For these reasons, case study is a practical and relevant method for this study. This section has demonstrated the suitability of case study strategies for research that seeks practical knowledge. The following section will detail the application of this chosen method to explore a new health care role. The participants and settings will be introduced and the application of ethical principles will be presented.

Section 2: Application of Methods

This section will describe the application of the research methods that were described in Section 1, as they were undertaken during this thesis. The activities of application associated with the intrinsic case study method were: selecting the site selection, data sources and collection methods, and data analysis. The final segment of this chapter will discuss the ethical considerations

As the candidate had no previous familiarity with the NP Service, a decision to start with NP observations was based on the fact that observations would allow the candidate to observe the NPs in their natural settings. The aim of this study was to gain an understanding of the early implementation of the NSW NP Service in 2008. The design of this research was an intrinsic case study.

3.10 Site Selection

Following the first phase of the Australian NP project (AUSPRAC, 2007), all authorised NPs in Australia were invited to submit an expression of interest to take part in Phase 2 of the study. This phase consisted of two components: work sampling and case study. To be eligible to participate in the case study component, NPs first had to be selected to participate in the work sampling component. Expressions of interest were received from 144 NPs. From this group, an AUSPRAC investigator implemented a method of stratified random sampling by state and geographical location (metropolitan or non-metropolitan) and selected 37 NPs who were invited to participate in the work sampling project in Phase 2 of AUSPRAC (Gardner, et al., 2010a). Of these, the NPs who provided a similar service were placed together in the same tier to ensure a tiered division of non-overlapping types of NP Services. Nine tiers were created (emergency, mental health, sexual health, women's health, orthopaedics, haematology, neonatal, renal and rural/remote) (Gardner, et al., 2010a). Ten NPs from across Australia, one from each tier plus an additional NP from the mental health tier, were recruited for the case study component. The outcome of this process resulted in a convenience sample of

three study sites located in NSW, which were then allocated to this candidate by the AUSPRAC team.

3.10.1 Undertaking Researcher Training

Prior to entering the case study sites, the candidate underwent an intensive period of training at a similar site not involved in this study. The training consisted of observing a highly qualified and experienced nurse investigator in case study methods undertake observation of a clinician in a practice setting. During the period of observation training (n=40 hours), valuable insight was gained into how to observe and record NPs performing duties during their normal rostered shifts. Other activities observed by the candidate included how to take detailed field notes, interviewing techniques, and how to describe the interactions of other health professionals associated with the NPs and the NPs' patients. Undertaking researcher training also provided valuable information and strategies regarding the process of medical record audit.

During the observational training sessions, the candidate was provided with an opportunity to practice the activity under the supervision of the more experienced investigator, check the accuracy of the initial findings and discuss any discrepancies. In addition, the candidate gained experience and became familiar with the use of a digital voice recorder, how to provide a friendly and safe environment for interviews, and how to clarify any misunderstandings that may occur during interactions with people in the study sites. The candidate worked to refine the skills associated with observation by taking field notes and observing people in populated settings such as universities, airport lounges and shopping centres, prior to undertaking the research.

3.10.2 Entering the Study Sites

A key task to enable this study was to gain access to the sites of the NP Services where the NPs worked. Hammersley and Atkinson (2007) and Patton (2015) agreed that gaining access was a crucial aspect of case study research, yet evidence as to how the

researcher undertook this activity was relatively absent in contemporary research methods literature. Patton (2015) suggested this lack of information implied that gaining access was a straightforward process and not in need of investigation, while other researchers argued that gaining access to research sites could be anything but straightforward (Hammersley & Atkinson, 2007; Høyland, Hollund, & Olsen, 2015).

In this study, the candidate found the latter experience was more realistic, as gaining access required many ongoing and interrelated processes. The first part of the process consisted of the candidate building trusting relationships with key participants in each study site. Once relationships were established, the candidate engaged in continual dynamic interactions, negotiations and re-negotiations to remain in the study site.

3.10.3 Participant Recruitment

Following confirmation from the AUSPRAC team that the NPs associated with the three NSW sites had agreed to participate in the case study component, the contact details for each of the three NPs were emailed to the candidate.

Nurse Practitioners

As this study was a component of AUSPRAC, the numbers of participating NPs were pre-determined by the AUSPRAC team. As indicated earlier, the case study component of AUSPRAC (part 2 of Phase 2) targeted a purposeful sample of 10 authorised NPs who had previously participated in the work sampling component (part 1 of Phase 2) of AUSPRAC. These 10 NPs across Australia were selected because they represented geographical and service diversity (Gardner et al., 2010a). There were four NPs from NSW involved in the case study component and three were assigned to the candidate. All three NPs were authorised and endorsed by the Nurses Registration Board of New South Wales at the time of data collection. The three NPs within each of the three study sites were contacted via email to arrange a mutually agreeable time to speak to them by phone about possible starting dates for this study. Following the initial phone contact, a visit to each site was undertaken. During this visit, NPs were asked about the feasibility

of their practice being observed over a continuous period.. Each NP then sought permission from their individual hospital managers for the candidate to enter the hospital and the particular study sites.

After talking with each NP, the candidate was able to negotiate a convenient period during which each NP would be rostered on duty and could be observed at work. A follow-up formal letter of confirmation was then sent to all three NPs. This letter was to ensure that the agreed dates and times for observation were still suitable prior to the candidate entering the field for data collection. Following the observation component, the three NPs participated in the interview component.

Health Professionals

The number of health professionals ($n = 15$ or five associated with each NP Service) participating in the case study component and required for the interview component was also pre-determined by the AUSPRAC team. For this study, the group of health professionals consisted of members of the existing health care team working with the NP Service, including medical practitioners, nurses and midwives. There was one exception for NP Service 1, where one of the health care participants was a clerical assistant who supported NP1 with clinic booking and follow up on a part-time basis. While the NPs were being observed, a list of health professionals observed having contact with each of the NPs at the three sites was established by the candidate, from which the lists of potential participants for the interview phase of the study were selected. Participants from the health professional category were purposefully selected considering maximum variation of characteristics within each site to ensure the views of the existing health care team were represented. The health professional participants consisted of eight nurses, five medical practitioners, one midwife and one clerical assistant.

Patients

The AUSPRAC team pre-determined the numbers of patient participants ($n = 15$ or five consecutive patients of each NP) for the interview component as well as the number of medical record audits ($n = 30$ or 10 consecutive patients of each NP including the five

patients who agreed to the interview component). Following the observation component, a convenience and consecutive sample of patients was recruited, immediately following their consultation with the NP, for the interview and medical record audit components. For ease of reporting regarding the patients seen by NP3, because they were neonates, the parents of the babies were used as proxy patients, and they will be referred to as patients in this thesis, accordingly. Once the recruitment commenced on each site, consecutive patients were asked to participate until the target number of participants was reached. Those final numbers were 15 patients recruited for the interview component (five from each service) and 30 patients recruited for the medical record audit component (10 from each service). The same 15 patients who participated in the interviews also gave consent for their medical records to be reviewed during the audit process.

The medical record audit (see Appendix 6) for this case study used a data abstraction tool (AUSPRAC Research Toolkit). The tool was designed by members of the AUSPRAC team and structured to help the researcher collect information from consenting patients' medical records to provide a detailed description of the service being investigated.

Recruitment Process

Verbal information about the study was given by the candidate when potential health professional and patient participants were approached. Those who indicated a willingness to take part in the interview component were given a Participant Information letter (Appendix 4a, b and c) explaining the purpose of activities to be undertaken, the measures that would be taken to protect their identity, their right to withdraw from the study at any time and details about the purpose of the study. Potential participants were also given a copy of the individual Interview Schedule for Case Study Participants that was relevant to their group (i.e., NPs, Allied Health Professional or Patient of NP) (Appendix 5a, b and c). To ensure the NP and health professional participants had adequate time to consider the interview questions, there was a time lapse of more than 24 hours between the initial information and discussion

of consent, and the interview. Health professional participants were given an appointment to meet with the candidate in a private room for the interview while the patient participants were interviewed in the consultation room immediately following their appointment with the NP. Participant consent forms (Appendix 3a, b and c) were signed prior to the participant commencing their involvement.

3.11 Data Sources and Collection Methods of the Study

Three data sources and three data collection strategies were used in this study. The data collection processes were participant observation, semi-structured interviews and medical record audit. The data sources were the field notes written at the time of participant observation, interview schedules and a data collection tool developed for the medical record audit. While these strategies will be discussed in a sequential manner, in many cases the actual collection of data occurred concurrently, consistent with the process described by Stake (2006).

During data collection, the candidate watched events, listened to conversations, asked questions to clarify meaning (when it was appropriate to do so) and gathered information that might later assist in understanding the NP Service. Gathering data in these ways assisted the candidate to comprehend events that were happening in each case study site. These strategies for data collection were selected as the most appropriate way to gather in-depth information about the NP Service.

3.11.1 Participant Observation

At each of the study sites, the candidate observed the three NPs in action performing their normal duties, but did not interact in the clinical setting. The candidate used both participant and non-participant observation to gather the data. The observations were recorded as field notes and were completed within six hours of finishing each shift with each NP. When sitting in the reception area waiting for the NPs, the candidate observed

elements such as the general layout of the facility, the types of patients attending the facility and the interactions between the hospital staff and patients. In addition, personal and phone interactions between NPs and other allied health professionals and/or patients were observed. In all the study sites, the candidate was essentially unknown to the NP (other than the interactions to secure the study sites) and their colleagues, and she took on the role of outsider so it was clear to staff and patients that the candidate was independent and separate to the study sites. The candidate sought to develop a deep understanding of the environment, the resources and the role of the NP through the situations and interactions observed.

During participant observation, three levels of data were collected. The first was a superficial level where everything was treated as data (Wolcott, 2009). Elements of observation during this time included the physical environment of the service area, coordinating and scheduling of care activities, role responsibilities, team configurations, patterns of patient attendance/access, and service and care delivery for patients. During this superficial level, the focus was on gathering descriptive data. Therefore, no formal contact was made with patients or the health professional staff who interacted with the NPs. This technique of treating everything as data enabled the candidate to witness events first hand, and document field notes about the daily life of the NP.

As the candidate became more familiar with the NPs' normal daily routine, the superficial level of data collection developed into a second interpretative level, and the observation periods moved to focus on events (Patton, 2015). This technique permitted the researcher to gain a greater understanding of particular events as they occurred. Some of the events included the organisation of care provided by the NP and interactions between the NP and other health professionals. Another concept explored included the outcomes of adding an NP Service to the existing health care model. Focusing on particular events facilitated the candidate's observation of the wider contexts in which interactions occurred between the NPs, other health colleagues and their patients.

The interpretive level was followed by a final, much deeper level of data collection. Here the researcher was able to attach meaning to particular events and begin

conceptualising concepts (Patton, 2015). During this deep level of data collection, observation periods of particular events became much longer as it was then necessary to follow events through to the conclusion. Data collected from the non-participant observation also focused on understanding the values inherent in the NP role, cultural relationships, successes, conflicts and obstacles that made up the daily life of an NP. The movement from description, through interpretation and finally conceptualising impressions allowed the candidate to gain a thorough understanding of the NP Service and the responsibilities carried out by the NPs on a day-to-day basis. During these three levels of data collection, the candidate was also able to identify particular points for further clarification, to verify the actual meaning of events, and to identify other key health professionals and patients for interviews. As a means of becoming partly socialised and thus form a better understanding of an NP Service, the candidate remained in the field for the entire shift while the NPs were on duty.

An essential component of participant observation is recording field notes as a means of documenting what occurred on a day-to-day basis. To ensure accuracy of the information documented in the field notes, they were formally recorded within six hours of the observational period. This time frame was important as the observations were still fresh in the candidate's mind and it was likely that the details could be clearly recalled. The field notes contained no personal identifying information and were primarily used to support and substantiate the data generated from participant observations.

To minimise bias and reflect the diversity of the NP Service, each NP was observed until data saturation was reached, that is, until they were no longer observed doing a new procedure or activity (Patton, 2015) and no further coding of the observation was feasible (Fusch & Ness, 2015). Another method used in this study to reach data saturation and reflect diversity included obtaining enough information to ensure the study could be replicated (O'Reilly & Parker, 2012; Walker, 2012). Spending quality time observing the NP Service and gathering rich and thick information (Geertz, 1973) assists in the process of minimising research bias (Fusch & Ness, 2015). The total number of hours spent at each study site varied. Data saturation for participant observation was reached at study site 1 after 92 hours, at study site 2 after 88 hours and

study site 3 after 80 hours. The candidate undertook a total number 260 hours of participant observation across the three sites.

Data from the field notes collected from the participant observation was incorporated into the background information addressed in Section 4.2.1 the NPs and their services, and triangulated into the concept model (Section 4.4).

3.11.2 Semi-structured Interviews

To complement participant observation data and as a means of generating more comprehensive data, interviews were another collection data strategy employed. The semi-structured interviews were conducted after completion of the participant observation. Interview participants included NPs, health professionals and patients (or parents of child patients).

The candidate provided a safe and non-threatening environment for the semi-structured interviews, providing privacy and minimal disturbance. The selected room was quiet, comfortable with chairs and a table, and far enough from the workplaces of the study sites to be free from interruptions. Prior to the commencement of the interview, participants were offered refreshments (tea, coffee or water) to create a relaxed atmosphere. Any final queries were answered and the interview participants were asked to sign a Participant Consent Form (Appendix 3a, b and c) before proceeding with the relevant section of the data collection. The interviews with the health professionals occurred over a three month period.

Interviews were audio-recorded with participant consent and conducted at a time and place convenient for participants, mostly in the practice setting during or after working hours. At the outset of the interviews, the participants were reminded that the main research focus of the interview was to explore and seek their understanding of the NP Service. Clarification was used judiciously to ensure the interview elicited a true representation of the phenomenon of interest. Occasionally, time constraints and/or participants that engaged more deeply with certain topics providing deeper reflection prevented some participants from answering all the questions. At the completion of each

interview, participants were asked if they had any further comments or questions and were informed again of their rights to withdraw their consent at any time. Each participant was thanked for their time and valuable contribution. The interviews were transcribed verbatim. The interview times varied between participants. The average interview time for the NP participants was 32 minutes (range 26 – 35 minutes), for the HP participants was 16 minutes (range 7 to 28 minutes) and for the patient participants was 9 minutes (range 3 – 18 minutes).

Data from the semi-structured interview component was incorporated into the background information addressed in Section 4.2.1 the NPs and their services and triangulated into the concept model (Section 4.4).

Interview Schedules

The interviews were conducted face-to-face using an interview schedule that consisted of a set of pre-determined questions. However, the interviews remained flexible to allow new questions to be raised during the interview in response to the participant's answers. The three interview schedules were created by the AUSPRAC team with the purpose of developing an understanding of how the NP Service has integrated into the existing health care services through accessing the participants' experiences and the meaning they give to that experience. Each group of participants had their own set of semi-structure questions, which were created prior to commencing the interviews and were designed to explore the following three concepts: organisation of care, team functioning and patient service (see Appendix 5a, b and c).

Nurse Practitioner Interview Schedule

The NP interview schedule consisted of 11 questions. Concept 1, organisation of care, asked the NPs about their perceptions and observations on the influence of their role on care delivery and included continuity of care, patient-centred care, coordination of care, significant challenges facing them in the role and their perception of where the NP role had the most impact ($n = 5$ questions). Concept 2, team functioning, invited responses

on the impact of the NP role on the service team, targeted collaboration and professional development / clinical development issues ($n = 3$ questions). To understand the NPs' views about their role in service delivery, the third concept consisted of questions on topics such as the focus of patient care in the NP Service, the number and type of patients managed per day or per week, the NPs' perceptions of what patients want from the service and the service's aims for patient outcomes ($n = 3$ questions).

Health Professional Interview Schedule

The health professional interview schedule consisted of 13 questions. To gain information about the collateral effect of the organisation of care in NP roles on the rest of the service team, Concept 1 asked about the health professionals' views of how the NP role influences continuity of care and patient-centred care, whether the NP role has any influence on the fragmentation of care or the workflow of the service, and what the outcomes might be for the health service more generally ($n = 5$ questions). To gain an understanding of how the health professionals view the NP Service integration into the existing health care team, questions were related to the NP influence on team workloads, individual workloads, their understanding of the NP role, inter-professional relationships and patterns of collaboration ($n = 5$ questions). To gather information on the health care professionals' perceptions of the impact of the NP Service on patient service, they were asked about patient-centred care, coordination of care issues and their perception of where the NP role has most influenced patient care ($n = 3$ questions).

Patient Interview Schedule

The patient interview schedule consisted of 11 questions. The first questions asked about the patients' or parents of the child patients' experiences of the NP Service and the organisation of their care, such as their experiences of scheduling of activities and care; issues related to care coordination, duplication, and accessibility to the service; the responsive of the NP in providing service; any fragmentation of care; and their level of confidence in NP quality of care ($n = 5$ questions). Questions linked to team functioning included the patients' understanding of the NP role, any experience of duplication, the mix of care providers, and their perceptions of access and waiting time for the NP Service ($n = 3$ questions). To gain information about the patients' experience in the

service, they were asked about their satisfaction with clinical care, the health outcomes they expected and the level of satisfaction with those outcomes, and their expectations of the NP Service on the day of interview as well as over the period they were under the management/care/treatment of the NP ($n = 3$ questions).

3.11.3 Medical Record Audit

Following the patients' consultation with the NP, information related to the visit was abstracted from the documentation written in the patients' medical record by the NP, and recorded on the purpose-developed data abstraction form. The patients' medical records were then reviewed retrospectively for entries made in the past 30 days to identify any previous consultations with the NP.

The instrument used in this study "was adapted from a generic tool used for chart abstractions from a sample of patients in the ACT Nurse Practitioner Trial" (ACT Health and the Nurses Board of the ACT, 2003 p. 138). At the time of the ACT NP Trial in 2000, there were no original research articles published about the models of care provided by NP's. Hence there was a lack of clarity describing the scope of practice of a NP. This trial in the ACT provided an opportune time to investigate the NPs scope of practice (Gardner & Gardner, 2005). A generic data set was established using commonalities identified as key aspects on NP Services. The findings of this trial helped in the development of the specific clinical protocols used by NPs when undertaking the state regulated authorisation process (Gardner & Gardner, 2005).

The tool was validated by members of the AUSPRAC team who used a modified version of the Delphi technique (Hasson, Keeney, & McKenna, 2000). The data abstraction tool was designed to record information on the type of clinical care provided by the NP, such as the presenting issue as indicated by the patient; the number of times the patient consulted with the NP in a 30-day period; specific types of pathology tests recommended by the NP, and the number of times these tests were recommended over the 30 days; the types of X-rays ordered by the NP; other diagnostic tests recommended by the NP; medications prescribed by the NP; therapeutic interventions performed by

the NP such as counselling, monitoring or social assistance; and referrals made or received by the NP. This information reflected extended practice activities and is defined as activities undertaken by the NP that differentiates their role from other nursing roles (Gardner, Chang & Duffield, 2007). For example registered nurses cannot authorise pathology, X-ray and medication orders as part of their scope of practice yet NP can.

The data from the medical record audit was used in this study was added to background information to the NP and their services (Section 4.2.1) and to contextualise the work of the NP (see Section 4.3)

3.11.4 Exiting the Study Sites

Exit from the study sites was also a critical point in the research process (Patton, 2015). The actual decision to exit the study sites came once data saturation occurred and no new patterns of understanding were observed (Wolcott, 2009). Data saturation is said to complete and anchor the accuracy of a study, implying strength within the research process and enabling the researcher to withdraw from the field with confidence (Miles, Huberman, & Saldana, 2013). In all three sites, the candidate used a staff meeting to inform the group that the data collection phase had been completed and that she was leaving to write up her findings. The length of time spent in each study site by the candidate to collect the three components of data varied from 8 weeks in study site 1, 6 weeks in study site 2 and 6 weeks in study site 3. The data collection took place from November 2008 through to April 2009.

3.12 Data Analysis

This section provides details on data analysis and how data were triangulated. Analysis of data in this thesis included thematic analysis of qualitative data and descriptive statistical analysis of the medical record audit. Data from the medical record audit were entered into SPSS (version 18) and a descriptive analysis techniques were used to

summarise and enhance understanding of the data (Tashakkorie & Teddlie, 2010). Descriptive analyses techniques were appropriate for this study, as the aim was to gain an understanding of the service provided by the NPs through the provision of a summary of the extended practice activities undertaken by each NP. As the analysis was descriptive in nature, results are presented as numbers and percentages. Reporting of this descriptive analysis materialise in Section 4.3 titled the work of the Nurse Practitioner in the introductory component of the findings chapter (Chapter 4).

The quantitative data were triangulated with the qualitative data to provide validation for each other and create a solid foundation against which to draw conclusions about the work of the NP. Five key strategies were used in preparing the qualitative analysis of data: 1) transcription, 2) computer software packages, 3) theme building, 4) coding and developing meaningful themes, and 5) data interpretation. Reporting of this qualitative component using thematic analysis appears onwards from Section 4.4 the Concept Model in the findings chapter (Chapter 4).

3.12.1 Transcription

The interviews were transcribed by the candidate close to verbatim, although some minor editing was undertaken to improve readability; however, the intended meaning was retained. For example, small pauses and utterances were removed to provide flow within the dialogue. To distinguish between the candidate's and the participants' voices, indented italics were used. Other editing strategies used to ensure readability included: three dots ... to convey long pauses, square brackets to convey emotions [laughing], empty parenthesis () to indicate words missing or inaudible, and capital font to indicate loudness relative to other words spoken. As identified by Poland (1995), these editing approaches improve the quality of transcription and validate the meaning of the words used by the participants. While every participant interview was coded separately by name, line and session, for readability, these identifying features are not included in the thesis to maximise participant confidentiality. Each individual's interview and transcript data were both listened to and read multiple times to improve the candidate's familiarity with the content. Immersion in the data occurred while attempting to identify the

participant's key messages, focusing on the words they used, and sometimes identifying unspoken content. To minimise transcription errors in this study, and because of the candidate's familiarity with the setting and language, the candidate transcribed the interview records.

The structure of the narrative, the ways in which participants spoke about the NP Service and any potential conflicts and contradictions were recorded, deliberated and reflected upon. Moving between data collection and transcription provided an opportunity for deeper reflection, new thoughts to be developed and valuable insights to be considered to assist the analytical process. A fundamental component of data transcription is data integrity where information provided by the participants is checked for accuracy and authenticity through ongoing validation processes (Patton, 2015). Data integrity was achieved by maintaining an audit trail of all data documentation (transcripts of interviews, field notes and medical record audit), coding schemes, decisions made in the analysis and version control.

3.12.2 Computer Software Packages Used

Two computer software packages were used to manage the data collected: NVivo8, and Computer Assisted Qualitative Data Analysis Software (CAQDAS). NVivo8 is designed for researchers working with very rich text-based data where deep levels of analysis on small or large volumes of data is required. The theme building software CAQDAS is used for assistance with qualitative data analysis and management (Bazeley, 2010). CAQDAS enhances the development of codes and their subsequent themes, partly as a result of its flexibility for multiple coding and capacity to promote complex pattern building (Silver & Fielding, 2008). The candidate's use of NVivo8, in conjunction with use of CAQDAS, enabled the production of a chronological decision-making audit trail and effective management of the data that consequently contributed to study's trustworthiness (Bazeley, 2010; Silver & Fielding, 2008).

3.12.3 Theme Building

Thematic analysis for this thesis was used to identify recurring themes, events and patterns in qualitative data (Lofland et al., 2006; Patton, 2015). NP observation, field notes and participant interviews were analysed following Braun and Clarke's (2006) approach to thematic analysis and the six steps of suggested by Braun and Clarke (2006) were followed (see Table 3.2).

Table 3.2: Thematic Analysis Process

The Six Steps According to Braun and Clarke (2006)	
1	Familiarising yourself with your data
2	Generating initial codes
3	Searching for themes, collating codes
4	Reviewing themes
5	Defining and naming themes
6	Producing the report

To summarise the data, a second level of analysis was performed both within and across the three embedded sub-units. This was undertaken to identify new themes, compare responses from individual participants and then categorise issues raised by the participants (Braun & Clarke, 2006). It was intended that understanding these relationships and patterns would help identify the complexity of the case allowing a coherent and focused analysis of information about the exploration of the NP Service.

For this study the candidate became familiar with the data through transcribing (see Section 3.12.1), listening and reviewing the data obtained from the field notes and participant interviews to develop ideas and interpret the data into meaningful words that would generate codes. Due to the large volume of data collected this was undertaken with the assistance of two computer software packages (NVivo8, and Computer Assisted Qualitative Data Analysis Software (CAQDAS) (see Section 3.12.2) to help with data management and assist with data analysis. The data analysis followed the Braun and Clarke (2006) Thematic Analysis Process (see Section 3.12.3). The initial

coding was identified mostly using words expressed by the participants and meaningful themes started to emerge (Section 3.12.4). Terms such as evolve, nursing links, adapting, co-operating, acceptance and sustainability were used by the participants. Categories started to appear such as the information on the NPs background as a RN, how the NP Service was created, why the NP Service was required, such as the need to fill health care service vacancies, the association between the NP and the health care team and the NP and their patients. As these terms and categories were considered, It was noted that many of them were consistent with biological concepts previously associated with Darwin's theory of evolution. With further conceptualising on how all these terms and categories fitted together, the candidate developed a concept model based on the four main themes of speciation, adaptation, co-operation and succession. This lead to the sub-themes associated with each main theme. The sub-themes associated with speciation were ancestral heritage, and cladogenesis. The sub-themes for adaptation were defining their space and filling a niche. Co-operation had the sub-themes of symbiotic practices with the health care team and working with patients whilst succession had the sub-themes of acceptance, consistency and sustainability. Conceptual diagrams were used to assist with depicting the concept model and labelling of the themes used in this thesis (see Section 3.12.5). The data sources from the participant observation and interviews were triangulated (see Section 3.12.6) and the final concept model of evolution was developed to interpret the findings.

3.12.4 Coding and Developing Meaningful Themes

Data reduction using descriptive and topic coding commenced following the initial stage of data organisation and management (QSR International, 2008). These codes were either descriptive codes containing information about events and participants, or topic codes that emerged from the data (Braun & Clarke, 2006). The topic codes were free codes (QSR International, 2008) in the first instance, and reflected evolving preliminary thoughts based on verbatim participant statements, participant observation and frequently encountered ideas (Sandelowski, 2015). The repetitive process continued until no new codes emerged and clarity of code definition was ensured (Braun & Clarke, 2006). Detailed descriptions of the codes were developed and recorded in

NVivo8 to form mutually exclusive categories that made possible useful and meaningful codes (Braun & Clarke, 2006). Refinement of the themes was achieved by reading and re-reading transcripts to identify consistency and logic of argument between the inductively reasoned themes, to ensure the coherence of their relationships and the accuracy of the textual and numerical data. Throughout the process of thematic analysis the candidate met regularly with her co-supervisor (RH) to validate coding to theme development and to confirm the themes were reflected in the collected data, thus increasing the trustworthiness of the data and study. Conceptual diagrams, the interpretation of findings, and finally the concept model of evolution, developed from this process (Sandelowski, 2015). Conceptual diagrams can provide a valuable means of reducing data, organising themes and presenting the findings of data (Sandelowski, 2015). Used traditionally in social science research (Stewart, Van Kirk & Rowell, 1979), conceptual diagrams assist the researcher in generating a visible orientated framework representing the interview responses of the study participants (Wheeldon & Faubert, 2009). When interviewed, participants used similar to verbal remarks and these remarks reinforced the terms allocated to the concept model suggesting there is a relationship between them (Wheeldon & Faubert, 2009).

Data immersion and the repetitive process facilitated further examination of codes and nodes, the NVivo term for an idea. During this flexible process, some of the codes, the content coded at particular nodes and the description of the nodes themselves changed. Patterns and relationships between the codes were expanded and clarified, leading to the development of a conceptual model identifying the key themes. In this study, the applications of themes (unifying ideas or motifs derived from the codes; Sandelowski, 2015) are not necessarily verbatim data extracts. Themes were conceptually developed to describe and interpret the phenomenon of interest (Saldana, 2009) by aggregating codes into concepts of commonality and visually displaying them with the use of a concept model. As the data grew, emerging themes were illustrated using a concept model. As the analysis continued, the transcripts were continually reviewed to check for supportive statements and, where appropriate, further refinements were made to the concept model. The process of adjustment continued until no new information was revealed from the data. This process verified the usefulness of the model in interpreting the data (Braun & Clarke, 2006). This required in-depth analysis, which lead to further

refinement of the model in order to fully describe the dimensions of the early implementation of the NP Service, and resulted in the development of this model of the evolution of the NP Service.

3.12.5 Data Interpretation

Case studies produce a vast volume of data, which can make systematic analysis cumbersome (Baxter & Jack, 2008; Creswell, 2014; Yin 2009). To capture the richness of the data, throughout the period of analysis, diagrams were sketched to visually depict the relationships between the categories in order to create themes (Braun & Clarke, 2006; Charmaz, 2011). The intention of creating a model was to graphically and visually demonstrate the code relationships found within the multiple data sources (Charmaz, 2011). Concept maps are embedded, in part, in epistemological ideas expressed by constructivists, wherein concept meanings are created through human perceptions and interactions with situations and events associated with the phenomena of interest (Charmaz, 2011).

3.12.6 Triangulation

For this study, data were gathered from participant and non-participant observation, and semi-structured interviews. Consistent with Stake's methodology, data collection and analysis commenced simultaneously and continued concurrently. Concurrent data generation and analysis strengthened the study by fostering the traditional testing for consistency of findings. Data were cross-checked within each data source for consistency, integrity and completeness by regularly checking the data source. Testing for consistency, in order to validate the data, included the scrutiny of the similarity or differences between what participants said and the information contained in the field notes (Hammersley & Atkinson, 2007; Morse & Niehaus, 2009). This process was then repeated across a variety of data sources derived from different phases of fieldwork and at different times. The acknowledgment and inclusion of inductively derived, evolving themes is consistent with the process of discovery in qualitative case study (Stake, 1995) and the construction of the

intrinsic case study. Importantly, there is confirmation that the findings and interpretations are founded on sufficient evidence and a transparent analytic process, ensuring they justifiably reflect the case. The triangulated findings, from the observation and semi-structured interviews, were woven together at the point of data interpretation and presented in a narrative (Fetters, Curry, & Creswell, 2013). Apart from being a method to increase validity and credibility, triangulation of the data at the point of data interpretation ensures a rich and comprehensive account (Morse & Niehaus, 2009) of the evolution of the NP Service. In this study the field notes from the observation component were initially analysed within and across the study sites and the semi-structured interview data was added to the observation component to provide a different level of detail in the findings (Fetters, Curry, & Creswell, 2013). The semi-structured interviews, being a one to one interview, extracted a deeper level of understanding of the issues associated with the evolution of the NP Service. These findings appear in the concept model (Section 4.4), the theme components (Sections 4.5, 4.6, 4.7, & 4.8) and the enablers and constraints to the early implementation of the NP Service.

Connections between the evolving themes were made and are presented in the findings chapter (Chapter 4).

3.13 Ethics Approval and Considerations

Ethical approval for this study was granted through the Australian Catholic University Human Research Ethics Committee (see Appendix 9) and the Area Health Research Ethics Committees where the participating NPs were working. These committees were Sydney South West Area Health Service, South Eastern Sydney Illawarra Area Health Service, and Hunter New England Area Health Service. Preserving the anonymity of participants was a priority, not least because researching the NP Service where the numbers of NPs are limited was challenging. Researchers are required by ethical standards to ensure research integrity of data management and the treatment of research participants related to confidentiality, privacy, autonomy, anonymity and respect (de Wet, 2010).

The candidate de-identified information including names and workplaces to honour participant privacy and anonymity. The study locations have been labelled as *Hospital 1*, *2* and *3*, and pseudonyms have been assigned to participants. To protect the identity and information related specifically to the gender of the NPs, the relating data have been de-identified and the three NP's will be considered as female.

To reflect the diversity in responses within and between the embedded sub-units, each participant has been allocated initials and a number (see Appendix 2). A Participant Consent Form was signed (Appendix 3a, b and c) before proceeding with the relevant section of the data collection, which indicated the participant's right to withdraw at any time, regardless of the reason. Because of the anticipated depth of self-disclosure, participants were advised that they could withdraw consent at any time up to the data analysis phase. The candidate assured participants of their confidentiality, reiterating that identifying factors such as names and specific locations of practice would be removed. The transcripts and the audiotapes have been retained in secure and separate locations only accessible to the candidate, consistent with ethics requirements.

3.14 Summary

Theory of the method, Section 1 of this chapter, presented the case study as the strategy of inquiry for this study. Other points discussed include the key elements for designing and implementing case study research, including commentary about the background, defining a case study, an outline of the process for identifying the case and an overview of the types of case studies, advantages and disadvantages of case study research, and discussion of the methods of data collection and analysis.

Section 2 of this chapter, Application of the method, relates the theory to practice, investigating selecting the study sites, entering and exiting the sites, and data sources and gathering methods. Approaches applied to gain insight into the NP Service through observing the three embedded NPs were discussed. Strategies used for interviewing were described. Face-to-face semi-structured interviews were conducted and three distinct pre-determined sets of specific questions were used to develop new understanding of the NP Service, as well as to access information from participants who

either provided the service, were associated with the service, or who were experienced in the service, to find the meaning of that interaction. The method of abstracting data from the medical notes of 30 patients who had consulted the NPs was also explained.

The final segment of this chapter discussed data analysis and ethical considerations. These included quantitative and qualitative methods of analysis. The next chapter contains the findings of this intrinsic case study, provides the thematic analysis result and the descriptive statistics from the medical record audit and triangulates these to create findings.

Chapter 4: Findings

This study sought to gain an understanding of the early implementation of the NP Service in NSW through the investigation of three services using an intrinsic case study approach. In this chapter, the data sources of participant observation, interviews and medical record audit will not be presented sequentially since they have been triangulated in order to report a more comprehensive understanding of the early implementation of the NP Service. The findings were guided by five research objectives: to understand the physical environment and organisational characteristics of the NP Services, to investigate the patient care provided by the NP Service, to examine NPs' views about their role and its integration into the existing health care team, to investigate health professionals' views about the NP Service and its integration into the existing health care team, and to examine patients' experiences of the NP Service. These research questions were aligned with the elements of the concept model, described in Chapter 3 (Section 3.12.4), and considered within the construct of that paradigm.

The findings pertaining to research objective 1—What were the physical environment and organisation characteristics of the NP Service?—relate to Theme 1, Speciation (Section 4.5.2 Cladogenesis); Theme 2, Adaptation (Section 4.6.1 Defining their Space); and Theme 4, Succession (Section 4.8.1 Acceptance of the NP Service). Speciation is defined as the evolutionary process by which a new species can be developed or created from the ancestral group (Merriam-Webster Dictionary, 2016) (i.e., NPs developed from RNs), and cladogenesis is the process of creating the new species (Gould & Eldredge, 1977). The findings pertaining to research objective 2 about the patient care provided by the NP Service is related to Section 4.3 (The Work of the NP) and Section 4.9.1 (Scope of Practice). Findings pertaining to research objective 3 about NPs' views about their role and its integration into the existing health care team relates to all four themes: Speciation, Adaptation, Co-operation and Succession. Findings pertaining to research objective 4 about the health professionals' views about the NP Service and its integration into the existing health care team can be found under Theme 3, Co-operation (Section 4.7.1 Symbiotic Practices with the Health Care Team)

and as a constrainer (Section 4.9.2). Finally, findings pertaining to research objective 5 related to the patients' experiences of the NP Service can be found under Theme 3, Co-operation (Section 4.7.2 Working with Patients).

Following a brief discussion of the study sites, the study participants are identified. The results of the medical audit are discussed, and the findings are discussed under the four main themes of speciation, adaptation, co-operation and succession, supported by the concept model that was developed to explain the evolution of NP Services. Finally, factors that either helped (enablers) or hindered (constrainers) the early implementation of the NP Service in NSW will be presented. The data sources have been triangulated and are presented together, where relevant, in these findings.

4.1 Study Sites

The description of the study sites and the depiction of participant quotes to support the themes derived from the data of this thesis provided the basis for rich data collection. All three services had been established for more than three years, were integrated into the NSW public hospital system and all were located within 200 kilometres of the Sydney metropolitan area. Each NP Service functioned with an endorsed NP. All three NPs were employed in acute care units within major NSW public hospitals, were endorsed by the NSW Nurses Registration Board, were the only qualified NPs in their immediate work environment, and were employed on a full-time basis. All three NPs were known to their colleagues after working full time in the same speciality area at the same hospital, in senior clinical nursing positions, for a substantial period of time prior to their appointment as an NP. However, each NP had a different focus of practice and their interface with existing hospital services differed. Other differences included their work hours, the reason their positions evolved and support for their new position. More information about the characteristics of the three NPs is provided in the following section (see Section 4.2).

4.2 Study Participants

The study participants for this thesis included the NPs associated with each site, health professionals associated with each NP Service and patients who have experienced the NP Service. The description of study participants has been deliberately limited to avoid identification of individuals and to comply with ethical requirements for confidentiality and anonymity. These requirements were very important because of the relatively small numbers of authorised NPs working in NSW at the time of data collection. In addition, all participants are presented as female.

4.2.1 Nurse Practitioners and Their Services

The three NPs who represented each NP Service in the observation component also participated in the interview process. Information in this section was obtained through the observation component, the medical record audit as well as the individual NP interviews at each study site. An overview of each NP Service and some relevant information about each NP will now be discussed to provide background information on each of the three study sites.

NP Service 1

NP Service 1 was located in a large metropolitan tertiary referral hospital within metropolitan Sydney, where a mental health NP (NP1) worked in the ED. The service had existed for three years prior to the data collection. NP1 was engaged to integrate mental health services within mainstream medical services for mental health patients who entered the health system through the ED. NP1 had been an RN for 16 years, including four years as a mental health clinical nurse consultant in the ED before being endorsed as an NP in 2004. In 2003 NP1 completed a 'generic' Masters in Nursing and in 2012 completed a PhD that comprehensively described the implementation of his service.

Patients seen by NP1 presented to ED and may have been suffering from anxiety, depression, psychosis or suicidal attempts. NP1's duties included completing a mental health risk assessment, arranging admissions after consultation with a consultant medical officer, coordinating patient discharge arrangements from hospital to community-based services, including social welfare referrals. NP1 also conducted outpatient consultations. Other than an occasional discussion with the senior medical officer (SMO) on duty in ED to provide an update of her patients' status and checking with ED staff regarding potential or actual referrals, NP1 appeared to work autonomously within the ED.

NP Service 2

NP Service 2 was located in a large regional teaching hospital south of Sydney where the NP (NP2) worked in the ED, alongside local GPs and junior medical staff to provide care for a range of patients with non-life threatening conditions. The service had existed for three years prior to the data collection. NP2 had been an RN for 24 years and was a Clinical Nurse Specialist in the ED for eight years before being endorsed as an NP in 2004. In 2005 NP2 completed a 'generic' Masters in Nursing (Nurse Practitioner).

NP2 also worked in the ED but, unlike NP1, provided care to patients with a wide range of conditions that the triage nurses had designated Australasian Triage Scale (ATS) category 3, 4 or 5 (indicative of the severity of the patient's condition) and allocated to the 'fast-track' (subacute) area. Fast-track is a model of care used to 'stream' patients with non-urgent complaints to a dedicated treatment area. The intent is to decrease waiting times and length of stay in ED, reduce ED overcrowding and increase satisfaction of patients and staff.

The range of conditions seen, assessed and treated by NP2 included hypertension, diabetes, lacerations and fractures, mild haemorrhages, miscarriages, ear, nose and throat trauma, fevers, dehydration, foreign body, mild concussion, and wounds for review. More information on the ATS in EDs can be found in the Glossary of this thesis.

NP2 was observed treating people of all ages from babies and children through to adults and the elderly. In the ED of Hospital 2, the GP and NP2 were considered the senior staff on the fast-track roster. Local GPs were employed on a part-time basis and most worked just one shift per fortnight. NP2 worked a 40-hour week on a rotating roster, but was most commonly assigned to the evening shift. Unlike the GPs who were assigned an RN to assist them with their patient care, NP2 worked without assistance. Prior to discharging or transferring patients, NP2 was observed discussing the case and the intervention provided with the GP or emergency SMO on duty. Unlike NP1, NP2 was frequently observed interacting with other staff in the ED. Sometimes she consulted with medical staff on elements of patient care, as NP2 indicated she was “not as confident” dealing with the management of orthopaedic fractures, and on other occasions she provided support or education for less experienced medical staff, including GPs and nursing staff, both in fast-track and in the main ED.

NP Service 3

NP Service 3 was located in a large regional referral hospital north of Sydney where the NP (NP3) worked in the Neonatal Intensive Care Unit (NICU). NP3 provided intensive care support for new-born babies within the NICU. NP3 filled a vacancy on the registrar roster. The service had existed for four years prior to the data collection. NP3 had been an RN for 25 years and was a Clinical Nurse Specialist in NICU for eight years prior to being endorsed as an NP in 2003. Just prior to her endorsement NP3 completed a Masters in Nursing (Nurse Practitioner), specialising in neonatal intensive care.

NP3 was responsible for the provision of care to new-born babies, predominantly in the NICU and in the Special Care Nursery (SCN). The NICU provided intensive care specialist nursing and medical care for new-borns, including sustained ‘life support’ such as mechanical ventilation. The SCN was commonly used as a ‘step down’ area for NICU babies who still required specialist care prior to discharge, and for high-dependency care for babies who required high-level care, but not intensive care. The clinical environment was highly familiar to NP3 as she had worked there for 20 years.

Of the three NPs observed, NP3 was observed to have the most interaction with colleagues, both nursing and medical.

Unlike her medical colleagues who often left the ward during a shift to pursue other activities within the hospital, NP3 remained predominately on the ward for the duration of her shift. The only times NP3 was observed leaving the ward area was when she was asked to attend a difficult birth in the birthing suite or to assess a baby on the postnatal ward. NP3 was observed undertaking daily rounds with the medical and nursing staff, admitting babies to the unit/s, attending complicated births, completing daily physical assessments on each baby, ordering medications, X-rays, blood tests, reviewing results/orders and generally managing the care of the babies. NP3 was also observed keeping the parents up to date through daily meetings. Unlike the other two NPs whose patient interaction was generally of a short duration (consultation time only), many of the babies NP3 looked after remained in the NICU or SCN from days to months.

Information about a typical shift for all three NPs is presented in the Appendices (see Appendix 7a, b and c).

4.2.2 Health Professionals

Participants from the health professional category were purposefully selected considering maximum variation of characteristics within each site to ensure the views of the existing health care team were represented. Twenty-two health professionals, working with the three NPs, were approached to ascertain their willingness to participate in the interviews. Seven health professionals (doctors, $n = 3$, and nurses, $n = 4$) refused to participate. The reasons cited were that they were not interested in participating in the study ($n = 3$, all were doctors) and, at one particular hospital, some refused on the basis of an employer-imposed mandate preventing staff from participating in work-related research studies ($n = 4$, all were nurses). This left 15 health professionals eligible to participate in the interview process—five associated with each NP Service. Table 4.1 contains a list of the Health Professionals (HP) interviewed and their characteristics.

Table 4.1: Characteristics of the Health Professionals Interviewed

Number	Position	Characteristics **
HP1	Clerical Assistant in Emergency	Administrative support person for booking of NP appointments for past 3 years. Worked in full time ED for 15 years.
HP2	Senior Staff Specialist Emergency	Panel member for implementation of NP Service. In charge of ED for past 6 years. Person who supported implementation of NP Service 2 following NP proposal.
HP3	Triage Nurse	Informed potential patients of NP Service on arrival at ED. Notified NP of any potential patients. Worked full time in ED for 3 years.
HP4	CNS Emergency	Informed potential patients of NP Service. Notified NP of any potential patients. Worked full time in ED for 5 years.
HP5	CNS Emergency	Informed potential patients of NP Service. Notified NP of any potential patients. Worked full time in ED for 8 years.
HP6	CNS Emergency	Informed potential patients of NP Service. Notified NP of any potential patients. Worked full time in ED for 4 years.
HP7	Senior Staff Specialist Emergency	Panel member for implementation of NP Service. In charge of ED for past 6 years. Initially not supportive of implementation of NP Service in Fast-track but wanted improved communication between GPs and hospital.
HP8	Triage Nurse	Informed potential patients of NP Service on arrival at ED. Notified NP of any potential patients. Worked full time in ED for 4 years.
HP9	Triage Nurse	Informed potential patients of NP Service on arrival at ED. Notified NP of any potential patients. Worked full time in ED for 5 years.
HP10	Senior Resident Medical Office / GP	Local GP on duty with NP in Fast-track. Position equal to NP. Worked 1 shift a fortnight with NP. Worked in ED for 8 months.
HP11	Neonatal Consultant	Panel member for implementation of NP Service. In charge of NICU/SCU for past 5 years. Person who proposed NP Service be implemented as had trouble recruiting medical staff to area.
HP12	Neonatal Fellow	On roster with NP. Position equal to NP. Had 5 years NICU experience. Been a fellow for almost 2 years.
HP13	Midwife	Informed potential patients of NP Service on arrival in Midwifery. Notified NP of any potential patients. Worked full time in midwifery for 18 years.
HP14	CNS Neonatal Nurse	Worked full time in NICU/SCBU for past 8 years.
HP15	CNS Neonatal Nurse	Panel member for implementation of NP Service. Worked full time in NICU/SCBU for 22 years.

** Data obtained for the characteristics of the Health Professionals interviewed came from the semi-structured interviews of the individuals.

4.2.3 Patients

Patient recruitment for the interview process and medical record audit commenced immediately following the NP observation component and involved the candidate approaching 10 consecutive patients following their consultation with one of the NPs. The recruitment process continued until five patients from each NP Service had agreed to partake in the interview process and medical record audit. Recruitment then continued until an additional five patients from each NP Service agreed to partake in the medical record audit only. This made a total of 10 medical records to be audited per NP Service. From the consecutive list of 10 patients to be interviewed, six patients refused. The reasons cited were lack of time ($n = 4$) or poor understanding of English ($n = 2$). No patients refused to partake in the medical record audit. A total of 15 patients were interviewed, 5 seen by each NP. The medical record audit was undertaken on 30 consecutive patients, 10 seen by each NP including the 15 patients interviewed.

In summary, a total of 33 participants were involved in the interviews and included the same three NPs who were involved in the observation component; 15 health professionals, 5 associated with each NP; and 15 patients or parents of child patients, 5 associated with each NP. The interviews ranged from 10 minutes to one hour in duration with the longer ones mostly associated with the NPs and health professionals and the shorter duration with the patients. The total number of medical records audited was 30 medical records. Data saturation occurred in this thesis after a total of six months in the field.

4.3 The Work of the Nurse Practitioner

To understand the work of the NP in the clinical setting, the profile of the NP's clinical care was compiled using a medical record audit following the patient's consultation with the NP Service. The instrument used to collect this data was provided by the

AUSPRAC team and collected data about the scope of practice of each NP. Clinical care is classified as an enabler through its association with the individual specialty scope of practice of the NP, and this is discussed in more detail under the sub-theme Scope of Practice (see Section 4.6.1).

4.3.1 Presenting Issue of Patient

Those who consulted NP1 presented with a mix of mental health issues such as depression, anxiety and self-harm. The primary presenting issue for the patients consulting NP2 was trauma and included conditions such as fractured ankles, sliced fingers, fractured wrists, a fractured clavicle and a lacerated forehead. With respect to NP3, the presenting cases were mostly associated with prematurity where the gestational age was 30 weeks or less. A summary of presenting issues can be found in Table 4.2.

Table 4.2: Summary of Presenting Issue of Patients Consulting NP Services

NP Service	Presenting Issue	Number of Patients (<i>n</i> = 10 patients per service)
NP1	Depression	4
	Anxiety	3
	Self-harm	3
NP2	Fractured ankle	4
	Sliced finger	2
	Fractured wrist	2
	Fractured clavicle	1
	Lacerated forehead	1
NP3	Preterm birth 25 weeks	2
	Preterm birth 26 weeks	2
	Preterm birth 29 weeks	1
	Preterm birth 30 weeks	3
	Low birth weight @ 36 weeks	1
	Macrosomic baby # clavicles	1
	TOTAL	30

4.3.2 Ordering Diagnostic Tests

Diagnostic tests help health care providers review disease probability for their patients. These tests are generally ordered to answer a specific question about the patient's presenting condition. For example, in this study, NP3 worked in the NICU with neonates that required blood tests to determine haemoglobin levels to verify the severity of anaemia, white blood cell counts to determine infection and bilirubin levels to ascertain the severity of jaundice. NP 3 also ordered chest X-rays as many of the neonates under her care had respiratory disorders. Being in Fast-track meant NP2 was required to order X-rays on patients who presented with bone injuries to determine the presence of any fractures or breaks.

Historically, ordering diagnostic tests was the domain of medical staff as they had the prescribing number against which a Medicare payment could be claimed to recover costs. NPs are endorsed to order diagnostic investigations such as X-rays and blood tests. Acceptance of this endorsement by other health professionals has been a common area of conflict described by all three NPs. While the NPs were able to initiate care including a range of diagnostic studies, it was often done in a convoluted and inefficient manner (Field Notes Hospital 2, 3). The inefficiency usually involved the NPs having to contact the doctor to seek permission for the test to be performed. The prime reason for this was that the ordering was tests needed to be authorised by a medical practitioner. In study sites 2 and 3 the NPs had not received authorisation so doctors needed to sign off on the NPs requests. In the absence of the doctor being on site, there was further inefficiency as required paperwork was sent from site to site for necessary signatures.

According to the medical record audit, NP3 was the only NP to recommend and order pathology. NP3 reported that when she commenced her position, the hospital pathology department would not recognise her requests as she was not a doctor: *“so after many hours of heated discussions and debate between the Head of Pathology and XX [the Neonatal Consultant], finally I got the OK”* (NP3). A summary of the pathology ordered by NP3 appear in Table 4.3.

X-rays were ordered by NP2 and NP3. HP15 recalled that when NP3 *“first started she wasn't allowed to order X-rays as she wasn't a medical person but that has been*

changed and she is allowed to do that now” (HP15). NP2 explained the reason for the change in their hospital came about when “the SMO intervened and got localised hospital permission” to allow NPs to authorise these requests. A summary of the X-rays ordered by NP2 and NP3 appear in Table 4.3.

4.3.3 Prescribing Medication

All three NPs described being able to prescribe medications within their scope of practice as a positive attribute in the NPs’ skill set. The medical officer in charge of the respective unit at each site authorised a list of medications that could be prescribed by each individual NP and the local hospital site pharmacy would authorise the release of the prescribed medication. Since the inception of the NP position, there has been a gradual increase in the number of medications approved for prescription by NPs (Gardner et al., 2009a). As verified by the summary of the data abstracted from the patients’ medical records (see Table 4.3), all three NPs recommended/prescribed one or more medications to the patients at the time of consultation. The most commonly prescribed medication during the audit period was narcotic analgesia (7/30) followed by vitamins and minerals (5/30), respiratory stimulants (4/30) and antibiotics (3/30).

NP1 indicated that most of the patients she saw did not require medications but there were some occasions when she did *“prescribe medications to assist patients who presented in acute states of distress”*. Despite the provisions for ordering medications, there are still limitations, which were reported by NP3 and appeared to be an ongoing source of frustration; mainly because of the *“perceived inconsistencies in the application of prescribing rules at hospital 3”*. A situation was described by NP3, who indicated that she *“could not prescribe anything, even a vitamin, on an ordinary regular medication chart but could prescribe stat doses of quite dangerous medications such as dopamine, fentanyl and morphine”* that needed to be countersigned by a doctor within 24 hours of ordering the drug.

There were a few prescribing issues highlighted by health professionals (HP14, 15), when referring to NP3. A nurse (HP14) revealed the irony of the situation stating, *“the*

NP can order on the Friday night but we may not see a doctor until Monday morning to sign for them". HP15 further highlighted the perceived restrictiveness of the hospital policy adding, *"NPs can do everything that the registrars can do except order vitamins, which makes no sense"*. Overall, a medication, or combinations of medications, was recommended/prescribed by the NP during 15 (50.0%) of the consultations.

4.3.4 Therapeutic Interventions

In this audit, therapeutic interventions were classified as procedural, counselling and education, social assistance, implementing a care regime, monitoring and provision of aids. The most common therapeutic interventions provided by all three NPs were counselling and education, with 96.7% of patients receiving at least one of these interventions. Procedural interventions were also frequently prescribed and were performed on 70% of patients. Procedures were performed on all 10 patients seen by NP2 and NP3; however, NP1 only performed one procedural intervention. All three NPs provided social assistance interventions to 26.7% of their patients and 20% of patients were monitored. The NPs rarely provided aids to their patients at the time of consultation. Care regimes were only provided by NP3, and this reflected the longer duration of admission for patients seen by NP3. Fundamental to many of the therapeutic interventions was the communication skills of the NP. The communication skills of the NPs were identified by numerous participants and this concept is followed up further in symbiotic practices (see Section 4.7.1)

4.3.5 Making and Receiving Referrals

Referral was another skill reflected in the NPs' scope of practice, differentiating them from their nursing colleagues and aligning them with the skillset of their medical colleagues. None of the NPs indicated that this was problematic for them, with NP1 saying, *"it doesn't really matter ... if I get a written referral it's great but if not, I don't worry ... I just paraphrase the request and who made it in the beginning of my written*

notes or report on the patient ... so either way, the details are recorded” (NP1). Referrals to NP1 came from medical or nursing staff in the ED. If the NP was on duty *“the triage nurses alerted her to potential patients either through her pager or verbally informing her when she visited the triage area”* (NP1). If the NP was not on duty, the patients with mental health issues would go through the normal triage process but a list would be created of potential patients that staff felt would benefit from a follow-up consultation at the NP’s outpatient clinic. When the 8 am staff handover occurred, the medical officers gave the NP the patient list (as per Field Notes Hospital 1).

NP2 indicated that most of her referrals came from the triage nurses, who appeared to be *“fairly au fait with the kind of patients I would see ... they will often flag those patients to me ... so that they [the patients] can be treated quite quickly”*. Triage nurse HP6 confirmed this by stating *“the patients she [NP2] can see can be many and that’s why I usually alert her [NP2] of impending patients ... it’s what her workload allows her to do”*. The number of patients that came to the ED and met triage categories 3, 4 and 5 generally far exceeded the number of patients that NP2 could see in a shift, so the triage nursing staff tried to select the most appropriate ones for her to see. This comment was confirmed by HP6 who also acknowledged that *“time constraints and the NPs workload limited what XX [NP2] could do”*. NP2 was not observed asking patients to return to the ED for a follow-up consultation with her. Consistent with ED practice, patients were either admitted or referred back to their primary carer, usually the local GP. The NPs indicated that they were well aware of the type of patients they were able to see and did not mind setting those boundaries with colleagues. NP2 said, *“if I get one that should be seen by the doctors, I just put it [the file] back, tell whoever is on triage and take another file”* (NP2).

Referrals to NP3 mostly came from the birthing area or operating theatre where the midwives requested neonatal medical assistance *“for a newborn baby that’s required resuscitation ... or needs an acute admission to NICU or SCN that’s when I would contact the NP”* (HP13). Most patient referrals to the NPs were noted to come from the doctors, triage nurses and midwives. However, none of the health personnel were heard advising that there was an NP available if patients would like to see them (Field Notes Hospital 1 and 2).

On two occasions, the word ‘research’ was used by participants. Two participants (HP10 and HP13) alluded to the knowledge base of the NPs with HP13 stating “XX [NP3] reads a lot and is always referring to evidence-based research for up-to-date practice”, while HP10 indicated “... she’s [NP2] up on the latest research and keeps me [a GP] informed” (HP10). Of note, no comment was made about the NPs instigating research projects. During the observation process, the candidate noticed research being conducted by medical staff in hospitals 1 and 3 but the only mention of the NP being involved in research was when NP1 stated she “was going off site to complete a research paper with a colleague” (NP1).

Table 4.3: Summary of Extended Practice Activities of the NPs

	NP1 (n = 10)	NP2 (n = 10)	NP3 (n = 10)	Total (n = 30)
Pathology ordered				
Haematology	0	0	8	8 (26.7%)
Biochemistry	0	0	8	8 (26.7%)
Microbiology	0	0	3	3 (10.0%)
X-rays ordered				
Chest	0	0	12	12 (40.0%)
Ankle/foot	0	4	0	4 (13.3%)
Wrist	0	2	0	2 (6.7%)
Lower arm	0	2	0	2 (6.7%)
Shoulder	0	1	0	1 (3.0%)
Medications ordered				
Analgesia	0	7	0	7 (23.3%)
Benzodiazepines	2	0	0	2 (6.7%)
Vitamins and minerals	0	0	5	5 (16.7%)
Respiratory stimulant	0	0	4	4 (13.3%)
Antibiotics	0	0	3	3 (10.0%)
Antifungal	0	0	3	3 (10.0%)
Therapeutic interventions				
Counselling, education and information	10	10	9	29 (96.7%)
Procedural interventions	1	10	10	21 (70.0%)
Social assistance	4	1	3	8 (26.7%)
A care regime	0	0	7	7 (23.3%)
Monitoring	0	2	4	6 (20.0%)
Provision with aids	0	3	0	3 (10.0%)
Referrals made by NP				
Allied health professionals	10	2	2	14 (46.7%)
GP	0	10	2	12 (40.0%)
Other health professional	4	4	0	8 (26.7%)
Medical specialist	0	0	2	2 (6.7%)
Other agency	0	0	1	1 (3.3%)
Referrals made to the NP				
Triage nurse	6	6	0	12 (40.0%)

4.4 The Concept Model

As identified in the methods chapter (Chapter 3) of this thesis, a concept model can assist with the data analysis, and one was designed during exploration of the preliminary data. A model, the evolution of the NP Service, was constructed for this thesis to assist with the management of the data and presentation of the findings. The word evolution was appropriate because it captured the holistic, dynamic, integrated and highly contextualised properties of the process by which the participants in this study verbalised their ideas on the process of change that involved the NP Service. The word 'evolve' was used by three of the participants (NP1, HP6, HP11) and seemed to capture the essence of what the participants identified when asked to discuss the integration of the NP Service into the existing health care team.

The concept model derived to explain the findings from this study underwent multiple modifications before arriving at the linear model illustrated as Figure 4.1, which uses terminology consistent with to the modern terms of Darwin's evolution theory. It may be considered a metaphor, and exemplifies the four key themes of this thesis. Data analysis was strengthened by the linear concept model.

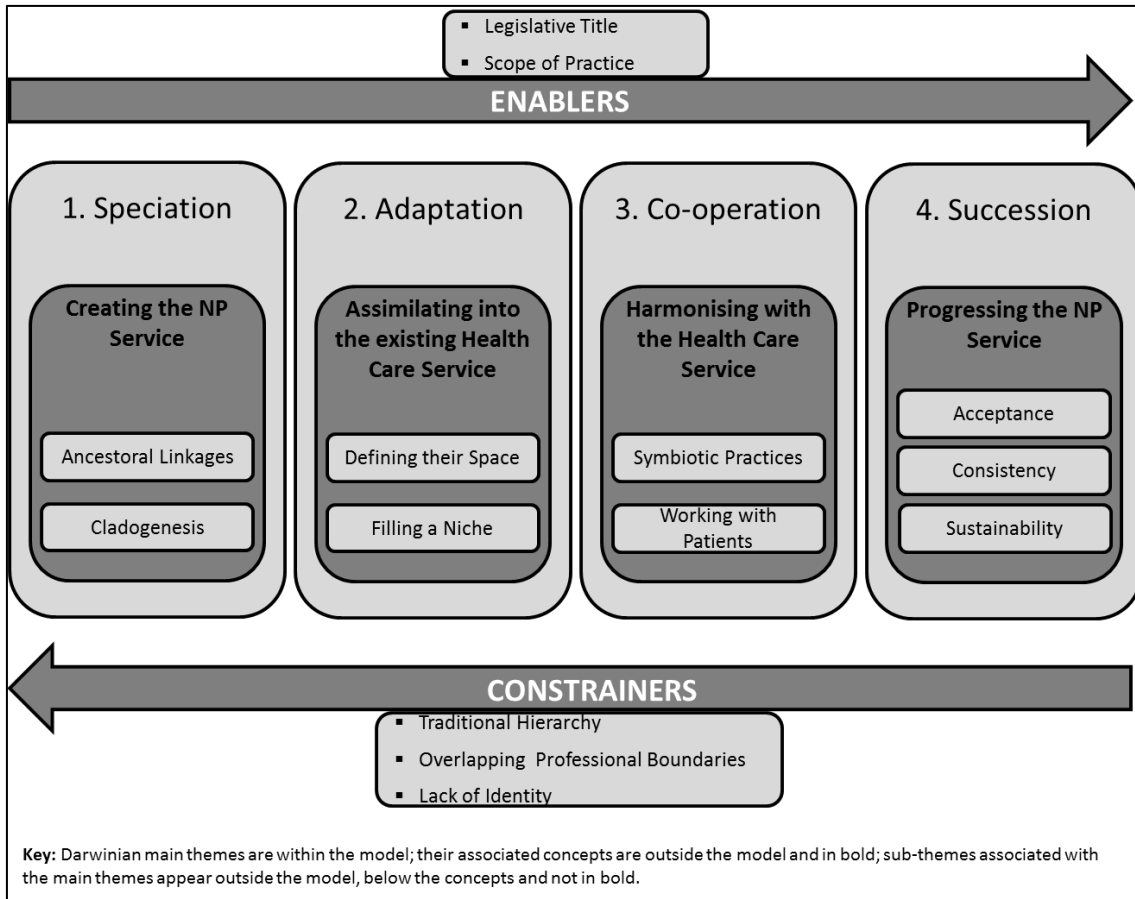


Figure 4.1: Model of the Evolution of NP Services

Evolution can be defined by the four interrelated biological themes associated with Darwinism: speciation, adaptation, co-operation and succession. The capacity for evolution is realised where these four interrelated themes occur consecutively, and sometimes concurrently. This relationship is described in the model by the arrows that move in a linear direction, beginning with speciation and progressing through adaptation, co-operation and succession. Although they will be discussed separately for the purpose of explaining the theme, they are not mutually exclusive, and findings can overlap between the themes. Each of the Darwinian key themes is described by the participants' views, which were identified by the analysed interviews. In the model, the main themes are identified in bold and attached to these are the sub-themes. Each will be defined and the key themes will be described, with particular reference to nuances that shed further light on individual themes and sub-themes. From the data collected, factors were identified that influenced the evolution of the NP Service in both enabling

and constraining ways. In the concept model, the enabling and constraining factors appear on the inside of the model with arrows to demonstrate their relative impact on the theme (i.e., does it assist evolution to move forward [enablers] or cause stagnation or regression to the process [constrainers]?).

The first key theme, speciation, addressed the creation of the NP Service. The sub-themes for speciation were the ancestral heritage of the NPs and the process of creation of the service, known as cladogenesis. The second key theme, adaptation, exemplified how the NP Service assimilated into the existing health care services through the two sub-themes of defining their space and filling a niche. The third key theme, co-operation, represented the harmonising of the NP Service with the existing health care services through the sub-themes of symbiotic practices and working with patients. The fourth and final key theme, succession, characterised the survival of the NPs and was represented by the sub-themes of acceptance, consistency and sustainability. In the context of finalising the concept model, the data were analysed to identify enabling and constraining factors that impacted the four key themes. Enablers such as legislative title and scope of practice affected all four themes, as did constrainers such as traditional hierarchy, overlapping professional boundaries and a lack of identity.

4.5 Theme 1: Speciation—Creating the Nurse Practitioner Service

The first theme was speciation. The Darwinian biologist, Orator Cook, was the first person to use the term '*speciation*' to describe the evolutionary process by which a new biological species arises from an ancestral group (Berlocher, 2010). As described by HP participants in this study, NPs are the new species that have advanced from the generic group of RNs, to create their own distinct group of APNs. This theme examines the findings associated with creating the NP Service.

Speciation can only occur where the conditions are conducive to allow it. In setting the context for the creation of the NP Service, it will be seen later in this chapter that some health facilities were very supportive of creating an NP Service, while for others the support was less obvious, or even absent. One reason for the creation of the NP Service

was an identified gap in health care provision and the need to fill that gap. Cladogenesis, or the process of differentiating from the NPs ancestral heritage, facilitated the speciation of the NP Service. The sub-themes of ancestral heritage and cladogenesis will now be described.

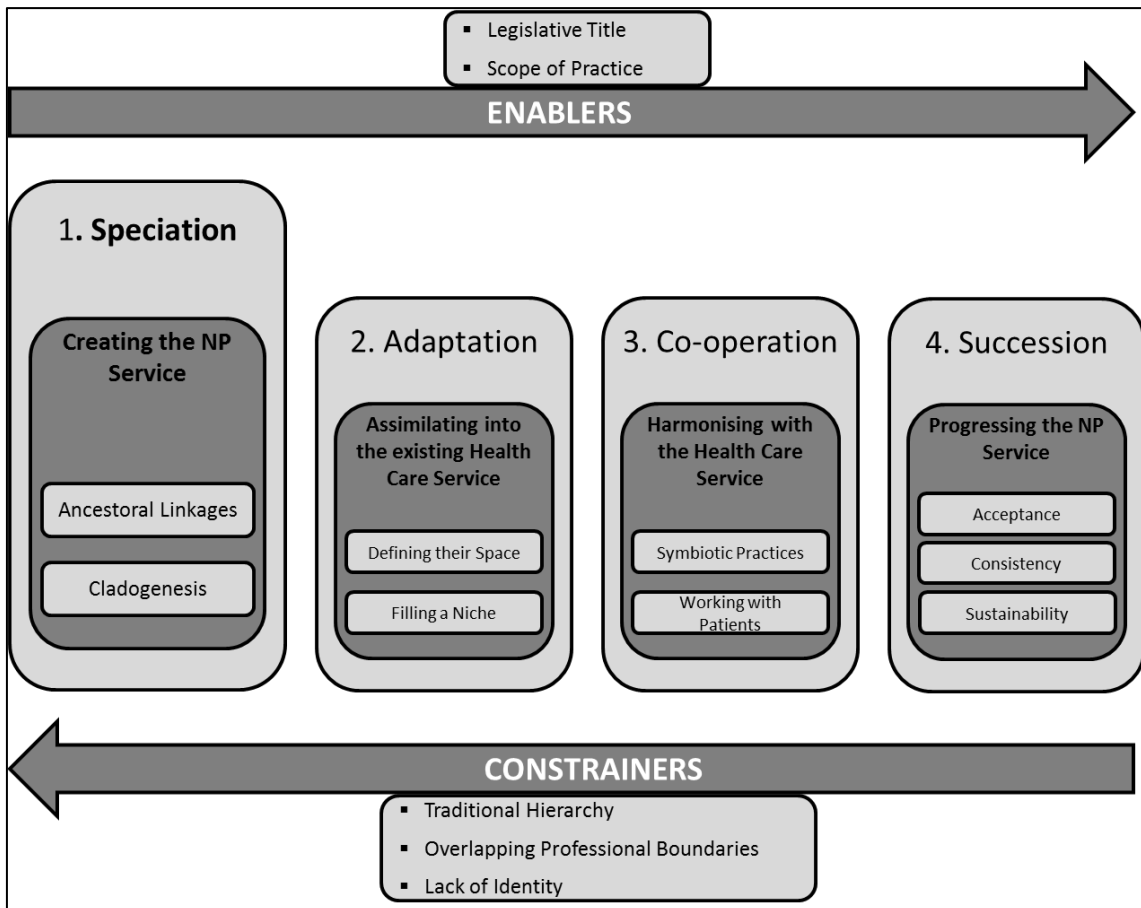


Figure 4.2: Model of the Evolution of the NP Service—Identifying Speciation

4.5.1 Ancestral Heritage

Sometimes, speciation requires the creation of new features to assist survival, while at other times, survival comes from refining and strengthening existing traits. Many of the health professionals interviewed reflected on the NP’s training and past experiences of being an RN, and its positive impact on their current role and performance as an NP. They linked the NP’s expertise in the NP position to their nursing background, particularly with respect to their skills. This new position was, as NP1 stated:

... grounded in the nursing profession's values, knowledge, theories and practice to provide an innovative and flexible model of health care delivery to complement other health care providers (NP1).

The majority of nurses interviewed appeared proud to identify with the NPs and attributed many of NPs' positive characteristics they identified to their common nursing background.

All health professionals who participated in the interviews fundamentally recognised the NP position as an evolved nursing position through comments like "*it's great to see XX*" (NP1), "*such an experienced nurse ... still engaged in clinical nursing*" [HP4]. Other comments, referring back to the NPs ancestral heritage, included: "*XX [NP1] never pretends to be someone other than a nurse*" (as opposed to posing as a junior doctor) and "*her values and skills can be linked to her nursing background*" (HP3), while HP9 commented that NP2 "*sees things from a different point of view because of her nursing background*". HP14 noted that while NP3 was experienced at caring for babies "*she's [now] got these extra responsibilities and she still knows in the back of her mind the nursing care basics for the babies*". HP13 remarked NP3 was "*able to look at a more holistic picture of the babies ... based on her nursing background [more] than anything else*". HP4 noted that NP1 "*is still a nurse ... she doesn't present herself as anything otherwise*", and "*[NP1] ... totally nurses these people,*" added HP4, with strong emphasis placed on the word *totally* by HP4. One of the medical consultants also attributed the values and skills demonstrated by the NP to her nursing background:

XX [NP3] has ... a nursing background where there is a lot of structured nursing. You have your patient, you care for that patient, you provide all the care for that patient, observations, feeds, assessments you ... get the right tests and make sure everything happens, talk to parents etc. All those sorts of things ... so when you become a nurse practitioner they provide all that in addition to all the advanced practice. (HP11)

HP11 attributed the high standard of the NP's work, regarding assessment, examination and documentation to the "*ingrained training*" nurses traditionally receive.

With an understanding of the ancestral heritage of the NP Service, the process of creating the NP Service or, in biological terms, cladogenesis, will now be explored.

4.5.2 Cladogenesis—Process of Creating the Nurse Practitioner Service

In biological terms, the actual split of a species from the ancestral group is called cladogenesis, which is an evolutionary mechanism that leads to the development of a greater variety of related species. Cladogenesis usually occurs when a few organisms end up in new, often distant, areas, thus creating an ecological position for the new species (Gould & Eldredge, 1977). The NPs were, in a sense, a new ‘species’ of nurse. There were various workplace conditions that occurred to allow for the implementation for the NP Service, including workforce deficits and consumer demand.

Each of the NP Services under study had their own processes of implementation of the NP Service, and it was not clear from the interviews with health professionals or NPs exactly how or why particular staff were invited to the respective implementation committee meetings. What was common across all three sites was the fact that there were very small numbers of clinical nursing staff involved: from Hospital 3 it was only the NP herself, the neonatal consultant and a senior RN; and from Hospital 2, a senior staff specialist indicated that he had been involved in the establishment and was directly involved in the implementation of the NP Service in the ED. At Hospital 1, NP1 seemed “... *unaware of any committee or process to establish the NP Service*”. She reported “*meeting with the ED director to describe a new service model*” that she was well positioned to lead, having been endorsed as an NP. After a short period of time, the service model was accepted by the hospital and NP1 commenced working on the new model.

Engagement of senior staff on the implementation committee did not in itself imply support for the position, particularly with respect to medical staff. The senior staff specialist (HP7) associated with Hospital 2 reported that he wanted to be involved as he “*was sceptical about how the NP Service would evolve in [his] ED*” (HP7). At Hospital 3, there was a range of opinions expressed by the participants who were involved in

founding the NP positions, with some being in favour of the new nursing structure, while others were reluctant to support the change. According to HP11, NP3 was approached to transition to the first NP position because “*she was the most senior neonatal nurse who was highly skilled, qualified and respected by all staff*”. One senior nurse involved in the setting up of the service expressed her discomfort: “*I wouldn’t want to do that [be an NP herself] ... I was concerned how they [NPs] would cope with all that responsibility*” (HP15).

Only some of the health professionals at the three sites interviewed supported the creation of the NP Service, thus creating an environment in which an NP could adapt and survive. Despite initial opposition, each site in this study eventually endorsed the NP position. As HP6 stated “*nurses who met the registration criteria for the NP role were appointed*”, and the NP Service was created in these three sites. All three services were created because the nurses had broken away from their ancestral group to become part of the recently created species of NP. NP2 indicated she was “*required to adapt to their new position within the existing health service*” in order to interface with the range of health professionals comprising the health care team. Where the environment is unstable and subject to change, particularly where those changes adversely affect a species, the ability and willingness to adapt is vital. The next section will address the process of adaptation.

4.6 Theme 2—Adaptation: Assimilating into the Existing Health Care Services

The second theme focused on adaptation of the NP Service into the existing health care services. Adaptation is the ability to change or modify oneself to meet and master changing situations (Merriam-Webster Dictionary, 2016). Adaptation also includes the acquisition of modifications by an organism, which enables them to adjust to life in a new environment. It can also refer to an advantageous change in the function of an organism enabling it to survive in its new environment (Mayr, 1982). To understand the adaptation of the NP Service, it is important first to understand the context in which the

service evolved—just as in order to understand the survival or extinction of a species, it was important for scientists to understand its environment.

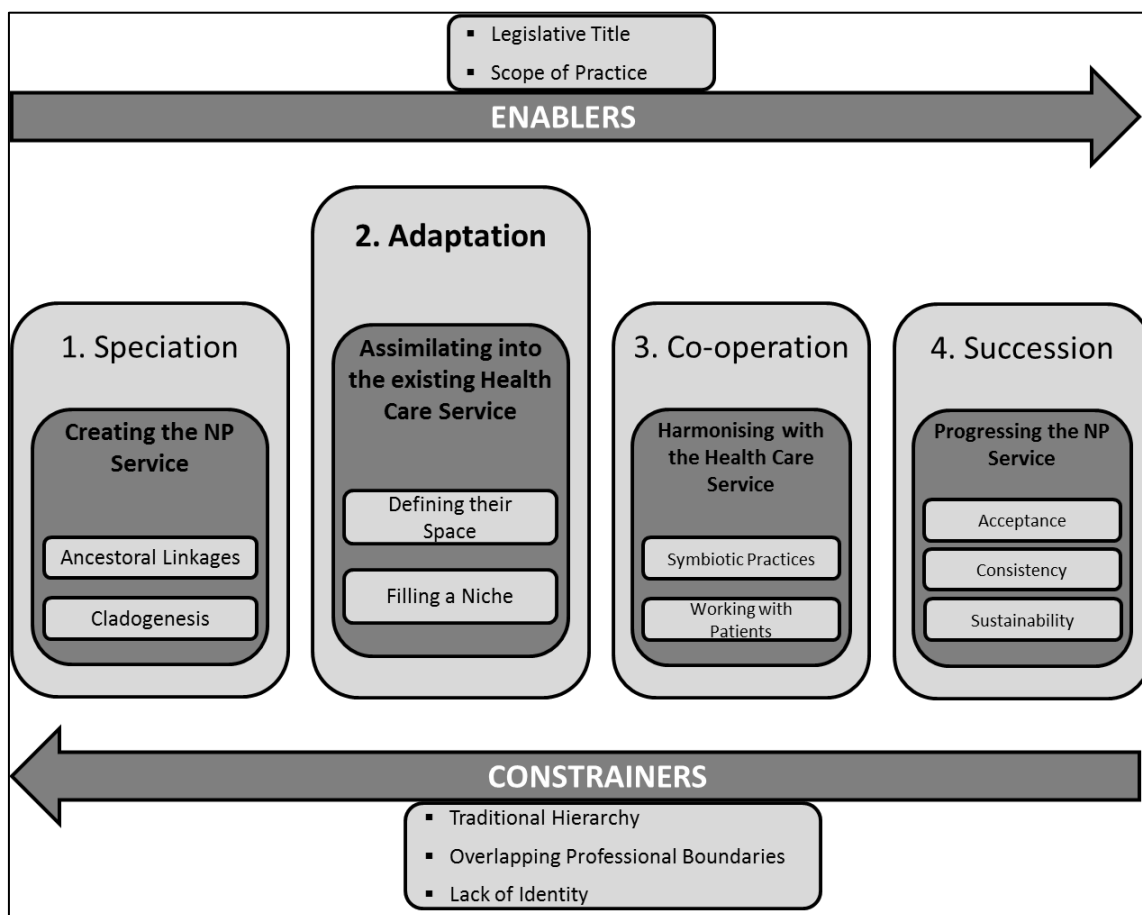


Figure 4.3: Model of the Evolution of the NP Service—Identifying Adaptation

NP1 recognised the potential for conflict but felt that her “*colleagues from outside ED did not consider her a threat as she did not work in the same clinical space*” as they did, and within the ED, she supported the staff in an area they considered was their clinical weakness. NP1 was very clear about what was and was not her role in the ED. If there was an issue about capability, NP1 said she “*had to be quite firm about clarifying [her] position*” (NP1).

Just as habitat affects adaptation in the natural world, it can also be a major influence in the clinical setting with respect to the ability of the NP to adapt to the existing health care service. The sub-themes of defining their space and filling a niche will now be presented.

4.6.1 Defining Their Space

It is important to understand the habitat allocated to the NPs in order to understand their adaptation in the workplace and their ability to distinguish their space. From observations in the field, the habitat of the NP Services in which they attempted to distinguish their own clinical workspace included wards, clinics and administrative areas.

In all three cases, the NPs established three workspaces as their own: the business space, consultation space and staff office. Often, these spaces were opportunistic, rather than planned for optimum service provision. As NP1 indicated, “*these were the only spaces available so I grabbed them ... they are not ideal but better than nothing*”. Despite claiming workspaces as their own, very few of them were clearly identified for all to see and understand the physical boundaries of the NP Service. Commenting on her staff office, NP3 stated “*I was lucky to get a space, so I am quite happy to share*”. Diagrammatic figures of the business space for each NP Service appear in the Appendices (see Appendix 8a, b and c).

The term *business space* is used to describe the space where the NP performed employment-related activities. NP1’s business space was primarily the ED, which was divided into different sections based on the condition and/or acuity of the patient. NP2’s business space was based along a corridor consisting of eight single consultation rooms located adjacent to the main ED area and was defined as a subacute area, commonly referred to as fast-track, where non-urgent cases were seen. For NP3, the business space consisted of two main ward areas—the NICU or SCN “*both areas were linked by an open passageway*” (*Field Note Hospital 3*).

The *consultation space* is where the NP conducted patient consultations. Separate to the general business space in the ED, NP1 had a combined consultation space and staff office adjacent to the paediatric ED where she conducted her outpatient clinic. NP1 conducted her outpatient clinic from this staff office. NP2 shared the eight consultation

rooms with the GP on duty (Field Note Hospital 2). NP3 spent her time either at the general *staff station* or attended to a baby at its bedside (Field Note Hospital 3).

The *staff office* is used to describe the space allocated to the NPs for administrative tasks. Distinct from most nursing staff, all three NPs had access to a staff office within close proximity to their work space. NP1 and NP2 had individual offices while NP3 shared a staff office with three other ‘transitional NPs’. None of the NPs had their name, title or status on their doors, unlike their senior medical colleagues. The staff offices of NP2 and NP3 were located in the same area as other medical and nursing offices at their site and were used for administrative tasks only. The staff office belonging to NP1 was the only office in proximity to the business space and was used constantly by NP1 as a consultation space for the outpatient clinic. The need to establish themselves within already defined habitats was facilitated where there was a niche to be filled. The next section will describe the niche that each of the three NP Services found to fill within their existing health service.

4.6.2 Filling a Niche

Survival of a new species is dependent on being able to fill a niche. If the NPs just do the same work that they did before the introduction of the new service model, it is unlikely that a niche for the NP Service would remain viable. Similarly, if NPs were to do something that was not supported by the local environment, they would struggle to remain viable. In identifying a niche within the health service, NPs had to be able to offer something to the health service that no one else delivered to maximise their chance of survival.

Each of the NP’s Service models evolved in different ways, either through substitution or innovation, and evolution was based primarily on the needs of the organisation and the available resources. The health care participants were divided as to whether the role of the NP was ‘more of the same’ and simply a substitute for a medical officer or whether creation of the new positions filled discreet niches within the health care infrastructure.

NP1 had been able to identify the service gap in her work as a clinical nurse consultant. Establishing the NP position gave her *“the ability to modify the service model to address the need” (NP1)*, that is, fill a niche. The notion of ‘niche’ can also be related to the concept of geography, as described by NP1 who explained the need for her position to be located within the ED to maximise the efficiency of the position. NP1 indicated that *“mental health patients presented quite differently to mainstream medical or trauma patients and the ED staff did not really have the skills required to meet their needs and so mental health patients were often allocated a low triage category”* and made to wait for review. Because of the nature of mental health patients, this approach often caused exacerbation of their symptoms.

The need to be located in the ED department was reinforced by NP1’s comment that her colleagues *“report not feeling confident in how to interact or engage, let alone assess someone, with a mental health problem” (NP1)*. The new clinical service was created to *“give mental patients a safe place to receive their care, both in the acute phase and also during follow-up” (HP1)*. One of NP1’s medical colleagues indicated that the ED had *“a lot of people coming in with ongoing anxiety problems that we as doctors can’t really do all that much for” (HP2)*. HP2 continued by describing the benefits of the NP who was able to assist by offering a particular type of care *“quickly and efficiently and actually give targeted therapy to their particular problem” (HP2)*.

HP2 identified the niche filled by NP1 and the uniqueness of the position by indicating that the position *“could not be filled by any of the other staff currently in ED” (HP2)*. This uniqueness appeared to be a double-edged sword, as this left a gap when the NP was not at work:

... it actually makes it a lot harder to manage these patients, they have longer waiting times, and more of them need to be referred to formal psychiatric services, which increases our workload and probably isn’t very good for the patients as well (HP2).

One health professional compared the position of a generic ED NP with a specialised NP position such as NP1’s mental health position in the ED, and identified that it was harder for the generic ED NP to find a niche, but easier for NP1 as NP1 *“filled deficits*

in both the nursing and medical staff space” (HP2). HP3 commented that a generalised emergency NP would be “doing a little bit of nursing stuff, a little bit of doctor stuff but they don’t have their own little niche like XX [NP1] does” (HP3).

Another dimension of the niche filled by NP1 was related to NP1’s recognition that *“some patients fell through the gaps of the health care system by not being followed up after discharge”* from ED. This was a critical element incorporated into NP1’s model of care. The outpatient service represented an extension of her previous role, enabling NP1 to see the patients after discharge from the ED. These people may or may not have known her as they may have been in ED over the weekend or after hours when NP1 was unavailable. Implementation of the clinic was *“intended to minimise the delay in follow-up experienced by people presenting at ED with mental health problems” (NP1)*. A further niche was recognisable in the ability of NP1 to transfer the care of frequently presenting patients to more appropriate services beyond the ED.

At Hospital 2, prior to the creation of the NP position, the part-time GPs worked alongside junior medical officers in the fast-track area of ED. The issue with staffing fast-track in this way was the infrequency with which the GPs worked and the rotational nature of the junior medical officers, creating instability, which affected communication and corporate knowledge. The NP position *“was created through additional funding to provide some long-term senior staffing stability” (NP2)* and to improve communication between hospital staff and GPs in the community. The senior staff specialist (HP7) indicated: *“I was frustrated by the lack of effective communication between the GPs and the hospital employed doctors when dealing with people requiring hospital admissions” (HP7).*

HP10 identified *“the hospital wanted someone to be permanent in the zone rather than ... the GPs who come in to do occasional shift and are perhaps less invested in the ED team” (HP10)*. As a means of improving communications in the ED, HP10 also commented on how she:

... relied on XX {NP2} to keep [her] up to date on new hospital policy and procedural information as well as ... learning new skills together, developing those skills and that interaction is really the value [of the NP] for me. (HP10)

Hospital 3 had experienced a long period of difficulty recruiting and retaining middle level doctors (i.e., registrars) to staff the NICU and SCN. The hospital had “*a number of very experienced registered nurses who were looking to expand their role*” (HP11). Looking at the resources they had available and the clinical need they had to address, the hospital decided to create the NP Service, and replaced one line on the registrar roster with the new NP:

We were short of registrars and they [Unit Directors] wanted to try and find some way of getting and keeping staff. The paediatric registrars didn't want to come [into NICU & SCN] and no one was interested so we looked at expanding the nurse's role to fill in the gap ... I suppose in-between the medical role and the nursing role and hence the nurse practitioners' positions evolved (HP15).

The action taken by “*the health service to divert funding to enable the creation of the NPS*” (HP15) was controversial for some colleagues. According to HP11 “*the counter argument [for employing NPs] from the medical point of view is that they take away the experience of the junior doctors*”. This view was supported by HP12 who seemed conflicted about NPs:

... occupying half the places for doctors in the new-born units; you know that is taking away the place for doctors who should be working in their places. When there is a shortage of doctors I think the NPs are a very good thing but when you've got a shortage of doctors you should be training more doctors (HP12).

During each shift, NP3 worked alongside a registrar or a transitional NP. Commonly, the Consultant Neonatologist identified NP3 as the senior ‘medical’ position on duty. A number of participants from Hospital 3 identified strengths in having both NPs and medical staff on the roster. HP11 noted that the strength of the model was related to the fact that they each brought “*different skills to the position*”. HP15 indicated she preferred working with the NP than working with the registrars:

... the unit definitely runs smoother when the NPs are on. She goes about her business in a smooth and quiet way and she does whatever she was going to do. The registrars get to that point after they have been here a while but it certainly

takes quite a few weeks to months and sometimes it never clicks and it never works as well (HP15).

Similar sentiments were also expressed by HP13. While NP3 was essentially working in an existing position that once was filled by a medical officer, NP1 and NP2 filled new positions, filling unmet needs in the system. Regardless of how the positions came into being, all three NPs sought to be recognised by and accepted in their new role by the colleagues and the health system more broadly. Once the new species has adapted to their new environment they need to work out how to exist alongside other wildlife in order to survive. This idea aligns with research question 4 regarding how the NPs harmonised with the existing health care services. This will now be discussed.

4.7 Theme 3—Co-operation: Harmonising with the Health Care Service

Theme 3 is co-operation. Co-operation is the act of working together for a common purpose or benefit (Merriam-Webster Dictionary, 2016). Combining co-operation and teamwork promotes survival of a species. In this study, NPs were observed working co-operatively with other health professionals and patients to benefit both the patient and the health service. Co-operation of the NP with other health care providers, particularly the medical staff, was underpinned by the knowledge that a paradigm shift was required to create support for the niche the NP was trying to fill. Without the paradigm shift, the creation of a harmonious workplace was unlikely, and conflict caused by the overlapping of boundaries between the NPs and their colleagues would only lead to negative effects upon the members of the health care team and the patients they were meant to assist. To this end, the NPs recognised the critical need for co-operation.

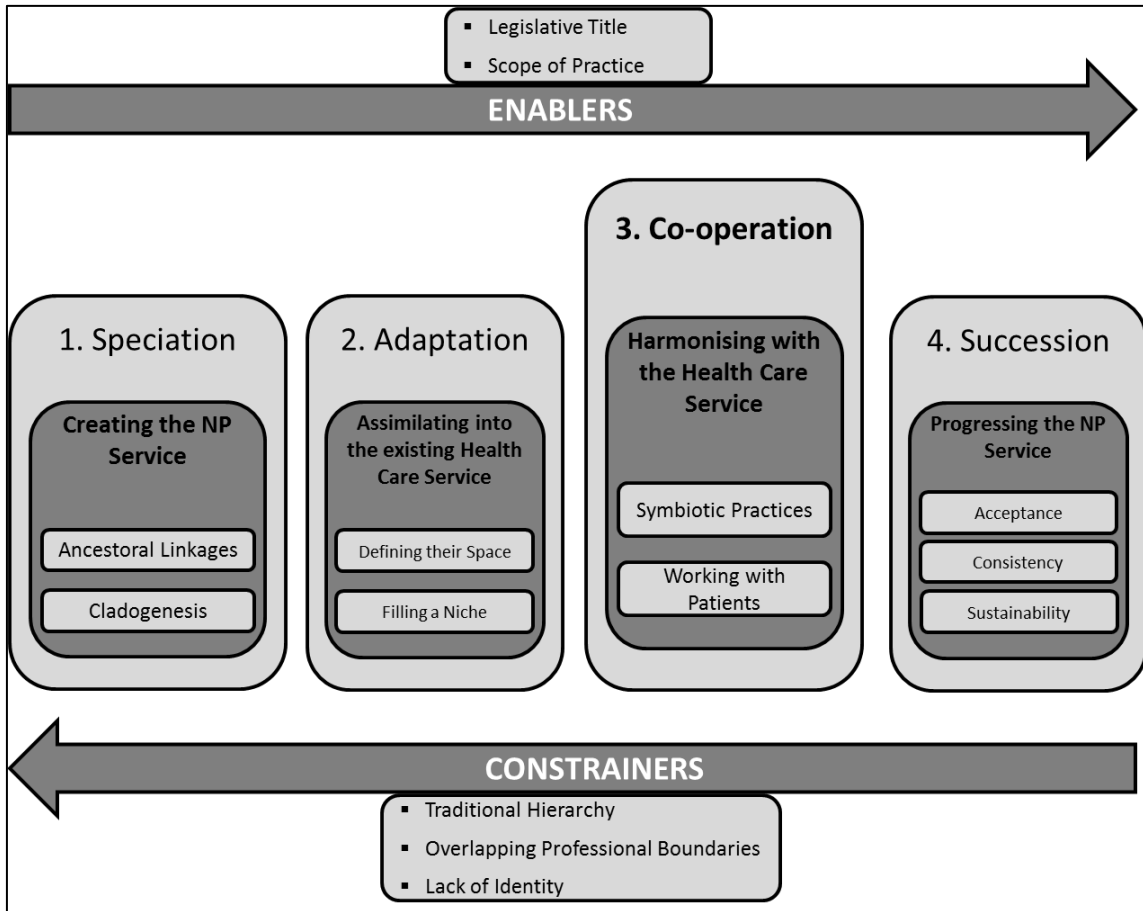


Figure 4.4: Model of the Evolution of the NP Service—Identifying Co-operation

In a complex workplace such as a hospital, there are times when the ability to work harmoniously is challenged—this might be because of change being introduced, avoidable duplication, insufficient human resources to meet demands or particularly complex inter-relationships. Almost all associated health professionals who participated in this study believed the NPs improved the team’s ability to meet patients’ care needs:

XX [NP1] has a great understanding of what the patient care needs are for a person with mental health concerns whereas individually the staff in this unit realistically only want to care for the emergency cases (HP1).

Positive perceptions of team effectiveness were expressed, regardless of how the NP Service evolved. Participants believed the patient care was more complete and carried out in a timelier manner because of the existence of the NP in the health care team; for

example, HP14 commented “*baby discharges were smoother because XX [NP3] was on the ward to assist with this*” (HP14).

Participants believed that the addition of the NPs to the existing health care team affected the overall team functioning. Some participants highlighted the positive interactions between the NP and the team “*you don’t have to check up on XX [NP2] as you know she would have followed hospital policy ... you do need to follow up with the new GPs working in fast-track*” (HP9). The expanded decision-making capacity of NPs related to medical and psychosocial issues contributed to the team’s perceptions of improved team effectiveness: “*having XX [NP3] on the ward is a huge plus. This is a plus for the staff as well as the quality and safety of patient care*” (HP13).

The co-operative sub-themes of symbiotic practices and partnerships with patients and/or parents will now be presented.

4.7.1 Symbiotic Practices with the Health Care Team

Symbiosis can be defined as a close, usually obligatory, association between two organisms of different species living together for their mutual benefit (Martin & Schwab, 2013). For patients to enjoy the improved service delivery described above, the NP relies on the medical staff to resolve issues outside of the NPs’ scope of practice, and medical staff rely on NPs to practice within their full scope of practice. If these dependencies are met, the patients and other members of the health care team enjoy a more positive, and often more timely, experience within the health service.

Most of the health professionals interviewed supported the introduction of the NP Service and identified the benefits associated with the uptake of this service. From field note observations, many medical specialists appeared to appreciate and value the NPs they were working with, demonstrated through the highly collegiate dialogues that were observed. When observing all three NP Services, “*both nursing and medical staff, would seek out the NPs to consult about a patient’s concern*” (Field Notes Hospital 1, 2 and 3). HP10, a GP working along NP2, was very enthusiastic about the NP Service

saying, *“it’s like having another senior doctor here working with me”* (HP10). Her reason for *this support was that NP2 had “all of that nursing experience and all of the procedural skills and ... she knows a lot of things that I don’t know”* (HP10). NP3 added that her role also involved the *“welfare of the medical and nursing staff by ensuring they feel safe and informed”* in the unit.

Harmony between members of a team working together is fostered where there is a reasonable and proportionate distribution of work. The concept of workload that was explored was two-fold: it was about the amount of work the NP did, as well as the way in which work was assigned to other members of the team. From observations (Field Note Hospital 2), an inconsistency was noted looking at the distribution of workload between the GP and NP2. Although NP2 was *“restricted by her scope of practice with the type of patient she saw”* (NP2), it seemed that *“both the GPs and NP appeared to ignore the process of seeing the patients whose notes were top of the pile and instead appeared to select any patient”*, based on signs or symptoms (Field Note Hospital 2). Observation revealed that the GPs preferred to deal with the quick turnover patients or patients that required minimal management, whereas NP2 was noted to *“avoid patients that presented with a mental health issue”* and preferred to deal with trauma cases (Field Note Hospital 2). While ignoring the conventions around patient review, the way in which NP2 and her medical colleagues managed the workload meant that all were satisfied with the way patients flowed through the unit.

NPs were *“technically competent”* and that’s why HP11 thought the NPs have been *“so successful at fitting into the team”*. HP4 commented that it was NP1’s ability to *“de-escalate staff and patients”* that she found beneficial. HP3 also commented on NP1’s *“ability to reduce patient agitation and thus reduce patient violence towards the staff”*. There also appeared to be an appreciation of the workload relief afforded to the team by the inclusion of an NP, as this permitted a more efficient use of available skill sets, particularly within the ED. HP6 stated one of the main benefits of having an NP was to take *“some of the workload off the doctors”*. This sentiment was echoed by HP4, HP8 and HP9. HP2 noted the NP reduced the workload of medical staff through NP1’s ability to liaise with other health professionals:

... through bypassing the emergency doctors and streamlining the referral process to the appropriate health care services for her patients ... ensuring the emergency doctors were available for the emergency cases (HP2.)

NP3's role was somewhat different to the two ED-based positions. The significant difference was the altered timeline that NP3 could work on, because her patients were already admitted, and many of them were likely to be so for many days and weeks. In contrast, NP1 and NP2 were under constant pressure to assess, treat and move their patients along as there was a constant inflow of patients to the ED. That was not to say that NP3 did not have time pressures given the acuity of her patients' health status.

While some respondents indicated that the NP improved the flow of patients, there were some that felt the NP worked slower, thus reducing flow through the unit. HP7 commented that NP2 *“did not turnover patients as quickly as a GP”*, but noted that the package of care provided by the NP *“was more thorough and covered more angles than people seen by a medical officer”*. NP2 felt she could see more patients if she was also given the assistance of a nurse but also acknowledged the *“nurses were already flogged out and because [she was] also a nurse”* she felt she should not impose upon the nurses.

Communication is one of the lynchpins in the health professionals' repertoire and is strongly linked to fostering teamwork and co-operation. Based on the responses from participants, the skill of communication remained prominent in the NPs' day-to-day work practice, whether that was in terms of explanation, listening, or advocacy. HP15 commented NP3 *“was empathetic when communicating with the new parents; her explanations were always down to earth, and she always had time to answer their questions” (HP15)*.

Communication in writing was also addressed by the participants. Effective written communication is essential for writing notes and needing to pass on information to help other colleagues deliver safe, coordinated and effective care. Commenting on the way the NP composed her reports in the patient notes, HP11 stated, by *“reading a baby's notes I knew that the baby was extremely well looked after when nurse practitioner was on duty” (HP11)*. HP10 also commented on the depth of information written in the

patient notes by NP2: *“taking over care of a patient from XX [NP2] is great ... from reading the notes I can see exactly what has been done for a patient”*.

Participants who were health professionals believed communication between team members was facilitated after the NP was introduced into the team:

XX (NP2) has made a big impact especially where communication between the team members is concerned. Before she started the communication between the ED team and the GPs was poor (HP10).

Some associated health care participants believed the introduction of the NP changed the focus of the patient’s notes making them clearer and more informative:

... with the doctors ... they would write the patient “was progressing well ... had a good day”, and it was it. With XX [NP3] you get a whole story, a breakdown of the entire shift, so I really knew what was happening, which made my job easier (HP15).

Health professional participants described the ability to communicate effectively as an important factor for team efficiency and believed: *“poor communication can impact on the delivery of effective patient care” (HP4)*. One participant indicated the NP played a significant role in effective team communication, as she (NP1) *“kept all team members informed” (HP1)*.

Most of the health professional participants indicated the addition of the NP Service had allowed more efficient lines of communication with other health professionals. They added *“since XX [NP1] started here I think she has made our team more efficient because she is such a good communicator” (HP1)*. Another health professional participant expressed it simply by indicating *“We are glad XX [NP1] is working here, she complements our team” (HP4)*. One health professional participant described how the NP *“was always available if you needed help and was always willing to listen to our concerns” (HP)*. According to HP1, these contributed to a greater sense of team unity and encouraged other health professionals to seek advice and guidance from the NP.

4.7.2 Working with Patients

This study sought to discover the working relationships and interactions between the NPs and the patients they consulted and how the HPs saw these relationships and interactions. These relationships will be explored using two lenses, the first looking at how the NPs viewed their role with patients and what the HPs thought, the second lens looked at how patients and/or parents experienced care offered by the NP and the multidisciplinary team from the HPs perspective.

The ability of the NP to deliver holistic care was referred to by all participants in this study. *Patient-centred, holistic care* and *hands-on care* were terms used by all three NPs to describe how they viewed the care they provided. When interviewed, all three NPs spoke about their patient contact with excitement. NP1 mentioned their ability “*to change perception on mental health*”. NP3 spoke of her “*joy at seeing these little people survive and go home*”. Important to what she saw as her main role, NP3 discussed “*the numerous education and counselling session [the NP gave] to keep the parents informed*” of the baby’s condition. The NPs all described their role as integral to “*enhancing the continuum of care for our patients*” (NP3), and “*to promote their successful journey through the health system or service*” (NP1). One of the most frequently described parts of the NP role was patient care. NP1 described an extended facet of this:

... aspects of interaction with patients and history taking ... I spend a lot of time doing and listening to patients, getting an understanding for the situation ... conducting a bit of an assessment (NP1).

The focus on the patient and the family permeated almost all the interviews with the associated health care professionals and NPs. This was a primary concern of team members. Participants described how the NPs became “*a familiar face to patients and families*” (HP14). NP3 was always available to speak with family members and answer their questions. HP14, a nurse, explains:

Keeping family members informed is a big priority in NICU. It's great having XX [NP3] because she knows the families and knows what is going on with the babies (HP14).

Almost all associated health care participants believed that the introduction of the NP created more opportunities for all members of the team to have a greater voice in problem-solving because of the way the NP engaged with the team. Like the NPs themselves, HP11 also saw the NP role as “*being holistic by covering the entire spectrum*” of care, from:

... antenatal counselling to seeing patients, ... counselling them about prematurity or birth ... looking after them during the resuscitation; ... caring for the baby; discharging the baby; it's about planning; it's about everything to do with the care of the patient. That person is a fantastic NP (HP11).

As a means of establishing a long-term support network for the patients, NP1 indicated that a large part of her role was about “*coordinating referrals for the patients as well as assisting them to navigate the health system*” to access different services available. NP1 pointed out that “*coordinating care for a mental health patient could take days*” and she sometimes found it difficult to find the time to call the number of organisations that needed to be involved. NP3 added that a major part of the role was “*interacting with the constant flow of people connected with the unit*”, including patients, parents, nurses, medical staff and domestic staff.

HP13 and HP15 both addressed the benefit of having an NP who could “*provide the full spectrum of patient care*”. Remarks from HP6 and HP8 were related to the “*patients only needing to see the one practitioner and not having a million people coming at you for different things*” (HP8), as the NP was “*a one stop shop*” (HP6). NP2 stated that “*being seen in a timely manner was also important to patients*”. HP10 remarked that NP1 took the patient from the waiting room, worked out the main issues, carried out any necessary procedures and discharged the patient mostly “*without anyone else's input*”. HP6 and HP9 concurred, adding, the “*smoothness of this process benefitted the patient, GPs and the nurses*”. NP2 felt that patients don't really care who they see:

... most of the time they [patients] just want to be seen and sorted and to get home or admitted or whatever the appropriate thing is. They just don't want to be sitting in our waiting room, they don't care who they see (NP2).

This was supported by PT20 who stated, *"I'm just very grateful to be seen so quickly"* (PT20).

Reduced waiting times was also identified by HP6 who commented that without the NP Service, patients *"would have to wait hours for a doctor"* but now with this new service the RNs inform the patients there is an NP on duty who can *"see only certain cases but for those patients she can see, it is a big advantage for the patient"* (HP6). PT11 was *"dreading sitting waiting for hours"* and commented that the consultation was *"a lot quicker than I expected. She [NP1] was really quick"* (PT11). HP2 added *"it improves the waiting time for a lot of people who would normally need to wait a while to see a doctor"* (HP2). HP5 summed it up by stating:

... it is expediting these people care in the department. They are not clogging out department. It gets them in, gets them seen and gets them either discharged home or referred to an appropriate service whether it be admission or back to community teams (HP5).

One area where NP3 was able to significantly reduce waiting times was with respect to facilitating the discharge process. In SCN, once a baby was cleared for discharge on the morning round, *"families often had to wait many hours for the junior medical staff to complete their morning hospital ward routine, before they would return to complete the discharge documentation"* (HP14). NP3, being on site with little external tasks to draw her from the unit, was able to complete the discharge documentation sooner.

HP3 stated *"having her [NP1] here seeing her treat patients before they escalate is essential"* (HP3). This was supported by HP1 who indicated the patients with mental health disorders who arrive in ED *"don't usually need medical input but they do need reassurance and to be referred back to their usual services"* (HP1).

HP1 commented that having the NP Service “means that for the patients that require hospital admission, the NP can accelerate the process through ED” (HP1) to find a bed, which NP1 stated “is quite difficult for the lack of beds around Sydney” (HP1). Almost all respondents commented on the positive benefits for the patient and the continuation of care. The NP Service “is the whole package providing holistic care and the patients get seen sooner” (HP8). As an integral member of the ED team, HP4, commented about the impact of NP1 on the patients, stating “she [NP1] does a very good job of making patients feel like ... their mental wellbeing is an important health issue” (HP4). HP15, speaking about NP3 and her interaction with the parents, said:

... parents like it because they see XX [NP3] a lot and they examine the babies every day. If the parents are there they will talk to them... if a parent comes in who hasn't seen the doctor for a while or who is worried about their baby [NP3 will] talk to them and there is no hesitation or anything. They are very, very good with parents and they can tell the parents far more than the bedside nurse can (HP15).

Patients and/or parents were keen to share their experiences with the NP Service when asked to participate in this study. Communication was an aspect of care that the parents PT21 and PT23 identified as a notable difference between the doctors and the NPs. PT21 stated, “I felt comfortable that I was getting a professional proper answer [from the NP] that I can understand” in comparison with some of her conversations with doctors, where she said, “they might as well be speaking a foreign language”. PT23 stated that she often pulled the NP aside after a conversation with a doctor to find out in “simple language” what was going on. In the clinical setting, NPs were sometimes described by parents as the doctor’s translator. PT23 stated that she felt the NP:

... understood what she wanted and following the ward rounds XX [NP3] would help me understand what the doctors were saying, encourage me to speak up about what I wanted ... sometimes I would forget to say things and XX [NP3] would remind me... which I really appreciate (PT23).

In this capacity as ‘translator’ for parents, NP3 was influencing the harmony of the unit, as well as the relationships between treating team members and the parents.

The term ‘*simple language*’ was also used by PT6 when asked about the outcome of her consultation with the NP. PT23 added that the NPs were able to give “*more information than the nurses but put it in a more simplistic way*” than the doctors. When she asked questions of the doctor, PT22 also felt she was “*disrupting them from I suppose more important things*”. However, she indicated that she “*felt very comfortable approaching the NP [NP3] to ask questions*”. PT 25 identified NP3s’ ability to put large words into simple terms and continued by saying “*sometimes they [the doctors] will be very jargony in their speech*”. The word ‘*jargon*’ also was used by PT3 who felt the doctors’ language and communication skills were “*sometimes very difficult for him to follow and understand*”.

PT4, a frequent attendee of the ED, said that NP1 spoke to him “*on a more equal level like I’m a person rather than a patient*”. Another patient (PT23) remarked on the way NP3 spoke to her “*she gave the facts calmly; they don’t need to sugar-coat it but say it in a simple non-threatening way*”. PT2 passed a similar comment and added that NP1 “*explained the situation to me in a simple way ... was a good friendly ear and a listener*”, while PT3 indicated communication with NP1 was “*just like having a chat with your mate she’s not like the stuffy doctors*” (PT3).

Confidence and trust in the NP was identified by parents when PT23 stated:

XX [NP3] knows your baby ... she is so conscious of her as a little person and they always talk about her ... she offers us so much comfort ... I trust her [NP3] to look after my baby (PT23).

Both patients (PT4 and PT23) also commented on their amazement that NP3 attended to every care requirement for them, with PT13 commenting “*I was surprised that I didn’t need to see other doctors*”, while PT4 remarked the NP Service was “*value for money and a complete care package*”.

Rather than be drawn on commenting on the differences, both NP2 and NP3 indicated that for the patient, “*it didn’t matter whether they were seen by an NP or a doctor, all the patient wanted was to be professionally managed in a timely manner*”. NP3 identified that it was less important to parents whether their baby was seen by a doctor

or NP, as long as the person providing care was “*confident enough and can explain things to them in their simple terms ... they [the parents] are quite happy with that*” (NP3).

As important as, or perhaps more so than adaptation and assimilation within a service, is its succession, or in other words, the NP Service’s ability to thrive and survive.

4.8 Theme 4—Succession: Progressing the Nurse Practitioner Service

The fourth theme is succession. The word *succession* means the order in which one person after another succeeds to a position or a title (Merriam-Webster Dictionary, 2016). Succession describes the attributes that have enabled NPs to thrive and survive in the health care system. Following speciation, there must be a willingness to fight for survival, and a capacity to impart survival skills to the younger members of the group in order for the new species to survive. All the NPs in the study had sought to prove themselves in their new role before they could think about succession planning.

For the NP Service to survive over time, three components are needed for succession: acceptance, consistency and sustainability. Acceptance is concerned with the approval of the NP Service into the existing health care system, consistency is the agreement or harmony between the health care professionals and sustainability is the enduring capacity of the NP Service into the future.

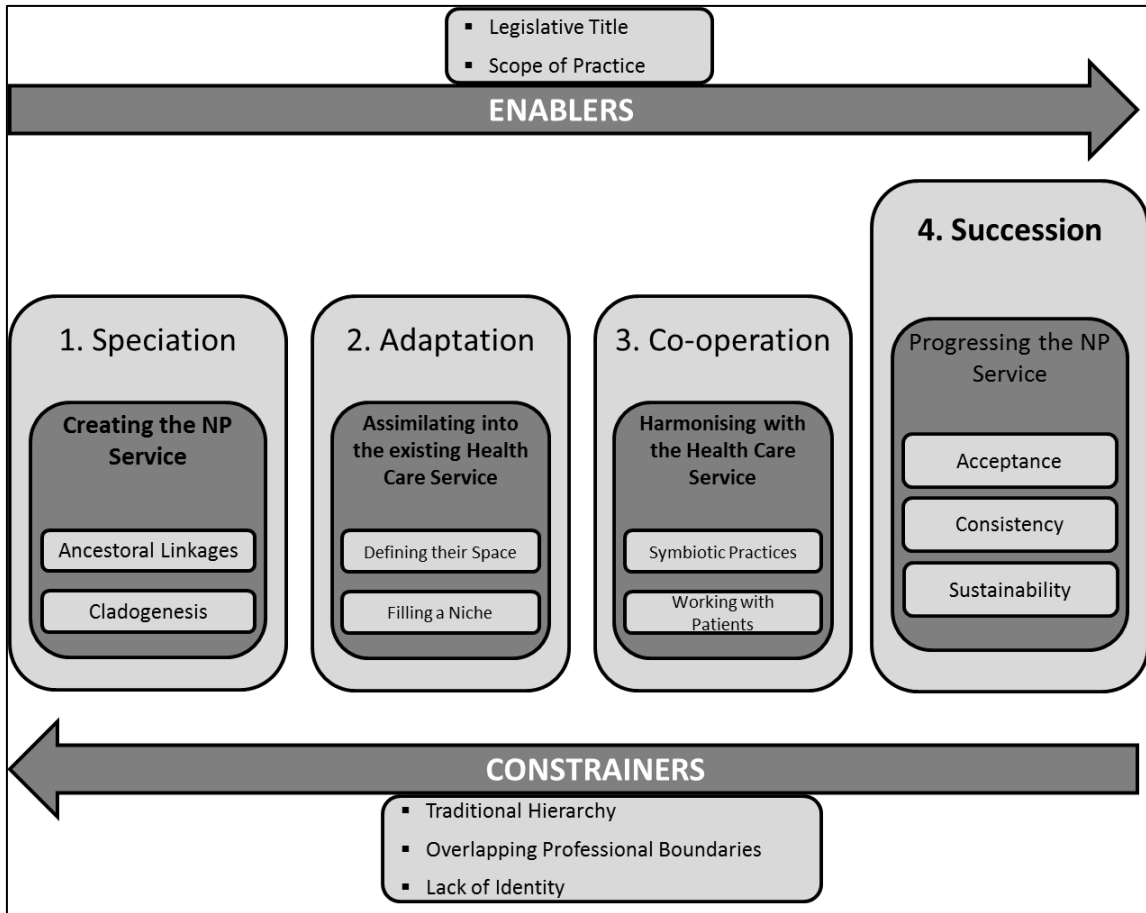


Figure 4.5: Model of the Evolution of the NP Service—Identifying Succession

The succession sub-themes of acceptance, consistency and sustainability of the NP Service will now be discussed.

4.8.1 Acceptance of the Nurse Practitioner Service

As identified previously in the literature review chapter (Chapter 2), critics of the NP Service believe the NP role to be superfluous to the existing medical services. For some NP Services, the struggle for acceptance was easier or shorter than for others. Frequently, the proficiency of the NP role has been judged in the clinical setting through a comparison with medical professionals.

Comparisons with Medical Professionals

Many of the HPs expressed opinions about the differences between the NP and their medical colleagues. HP10 identified the value of NP2's skill set saying "*XX [NP2] contributes skills that in many cases are at a higher level than junior doctors and in some cases at a higher level than senior doctors*". HP10 (a GP) attributed this to the NP's confidence and indicated she "*often had to ask the NP for guidance*" with certain skills. She remarked by indicating "*if the NP was not on duty I would need to get a consultant to assist me with skills such as suturing as I have had limited training in this skill*" (HP10). HP4 also commented on the importance of being accepted as a team member, as NP1 has been required to "*break into particularly the doctor's perspectives to prove themselves*" (HP 4).

HP4 emphasised the specific skills NP1 demonstrated when meeting the needs of the patient cohort and the way in which she assisted ED staff in their patient management, particularly in times of high-pressure when they did not have the time (or sometimes skills) necessary to deliver the care required for the mental health patients: "*[they] might not necessarily get the care like the best care that I could give because I have got eight other patients*" (HP 4). HP3 commented on how easy it was for the medical staff to just offer sedation to the patients who have a "*habit of presenting here every time they feel anxious in the hope that we will give them some medication*", rather than address the fundamental reason for the repeated re-presentations, offering that when NP1 was on duty "*these patients didn't actually need to see a doctor, nor did they need sedation*" (HP3).

Three health professionals (HP5, HP9 and HP13) commented on the different traits displayed by doctors and the NP working in their area when confronted with a stressful situation. Both HP9 and HP13 remarked how the NP "*was always willing to listen*" and HP13 added that the NP "*respected nurse's opinions and took them on board*". HP5 passed a similar comment about how he "*preferred to be with XX [NP1] rather than an ED doctor if an unstable mental health patient was brought into ED*".

Regarding NP1, HP2 commented that she could provide “*a direct, complete patient assessment of treatment service*”, as well as providing “*the liaison and the kind of a more rapid access for people*”. The rationale for this was that NP1 could:

... turn some of them around, manage them entirely by herself, which is great because she’s got the expertise that we don’t have. Otherwise she can rapid track their assessment of treatment by linking with us in this department or the other department of psychiatry (HP2).

From observations in the field, the difficulty of decision-making for the NPs described by the (predominantly) medical respondents was not witnessed by the candidate. In fact, observation of all three NPs revealed that they were frequently approached by medical staff seeking their opinion and advice, commonly with respect to issues of patient management. In Hospital 2, consultants or senior registrars who were requested to review a patient in the fast-track area sought out NP2 first before speaking to a GP or ED doctor (Field Note Hospital 2).

Irrespective of the skills of adaptation that the NPs acquired and demonstrated, they still needed to prove themselves to their peers and the health system, and be accepted by them, in order to be effective in their new positions. NP3 indicated that she had initially encountered resistance and denial of her role from medical staff. One doctor in particular continually bypassed the NPs, preferring to communicate directly with the consultant. The main issue with this was that after hours, when the only staff on duty were the NPs, “*the consultant got contacted [by some of the junior medical staff] for more trivial matters, such as babies that required hospital transfers*” (NP3). It took many months to change those preferences. Despite the passage of time since the establishment of the NP position, while most health professionals and patients interviewed were very accepting of the NP Service, not all health professionals appeared to have accepted the NP Service into the existing service structures. The reasons for accepting (or failing to accept) the service differed depending on their link to, and past experiences with, the service.

HP3 spoke about when NP1 commenced in her position, “*the biggest challenge was probably dealing with the medical staff*” who had created a “*wall that was there about*

blocking the NPs". This virtual wall was felt within the ED and throughout the hospital. The comment from HP3 was that the NP role was more widely accepted and "*most of the medical staff are fairly supportive and finally the wall has started to come down*" (HP3). After a start that was viewed with scepticism and uncertainty, gradually the NP Service was starting to be accepted by professional colleagues. HP11 added: "*their [NP3's] desire and energy to succeed and prove themselves should be commended*".

Overall, it appeared that even the most *sceptical* clinicians (HP5, HP7, HP9 and HP15) in the early days modified their opinions after the NP position was established, and had become supportive of the position. HP7 stated "*I have changed my mind on NPs. There is a role for them in low-risk emergency*" (HP7). When asked to explain why the NP Service in Hospital 1 has been so effective, HP4 commented:

... she is known, she is accepted, she has made those hard yards and you know you can see that the doctors come to depend on her as well, which is a really a great example of having that whole team work going on across disciplines (HP4).

While many participants described the need for NPs proving themselves, HP4 had a different perspective, saying that as NP1 "*had been doing her role for many years she didn't need to prove herself to the doctors*", thus the NP had been "*strongly accepted*" as part of the ED team in Hospital 1.

HP6, a doctor, indicated that he thought that NPs "*had had a hard time being accepted initially,*" but believed that NP2 had become more widely accepted "*because she [NP2] works under guidelines, it's not like they are taking over from the ED doctors*" (HP6). This response reflects the issue of competition for resources. If the medical staff had felt that the NP was competing with them for patients or indeed their job, it is unlikely that the NP would ever be able to prove themselves.

While NP2 experienced some positive attitudinal changes from medical staff within the hospital, she indicated that she "*constantly experienced problems with the GPs who worked in the community*". Initially the GPs "*did not want to liaise with her, preferring to speak to another doctor*" (NP2). This lack of willingness to work with the NPs

demonstrated the GP's lack of understanding of the role of the NP within the multidisciplinary team. Their resistance continued for *"at least 12 months until the director of ED intervened and the situation partially settled"* (NP2). NP2 justified the situation by stating *"it was really a matter of time for the doctors to get used to us"* (NP2).

Despite the passage of time in the role, NP2 still felt on occasion that she had minimal support from the community GPs and that she needed to be extra vigilant with her discharge letters as a means of earning support and recognition in her position. NP2 remarked that *"I sensed the medical staff in the unit always had me under the microscope and always felt I had to prove myself more than the medical colleagues I work alongside"*. When NP2 was observed writing a patient follow-up letter to a community GP (Field Note Hospital 2) the detail was fastidious compared with the GP working with her, whose letter was obscure (Field Note Hospital 2).

4.8.2 Consistency of the Nurse Practitioner

To describe consistency, the Merriam-Webster Dictionary (2016) uses terms like *permanence, continuity, stability, longevity* and *constancy*. The consistency of the NPs was described by respondents in both the health professional and patient groups. Unlike their medical counterparts who were often responsible for a range of wards and outpatient areas, the NPs were more visible, consistent and permanent members of the care team on the ward. Health professionals (HP9, HP13 and HP14) who worked in Hospitals 2 and 3, described the disruption to the team and workflow of the unit caused by the repeated turnover of the junior medical staff every three to six months, a problem overcome by the consistency and permanency of the NP position. HP13 remarked on the turnover by stating it was *"good that she [NP3] is here to stay and she is not regularly changing"*, and that this has *"helped create stability"*.

HP14 commented that the strength of NP3 was her specific interest in being in the clinical area, as opposed to some of the junior medical staff who merely mark time as they progress through their rotational schedule *"XX [NP3] has chosen to work in NICU"*

whereas some of the transient registrars ... aren't that interested ... and you know they are just putting in their time" (HP14). HP15 also indicated that the NPs "want to be here and this is why the NP Service ... has been so successful" (HP15).

Staff (HP6 and HP9) from Hospital 2 described issues related to the GP working in the fast-track area only working one shift per fortnight. This issue was raised in the context of the consistency that NP2 was perceived to bring to the unit, with HP6 remarking about *"the positive difference it made having someone full time in the area"*. Related to the discussion on the stability NPs brought to the unit, respondents also highlighted the quality of the care provided by the NP: *"XX [NP2] is consistently here, which improves patient flow and patient care. She [NP2] doesn't rotate around [like the medical staff] so patient care improves" (HP6)*. Similar statements about stability of staff creating better patient outcomes were also made by HP4, HP8 and HP14.

Patients also perceived a level of consistency and continuity in the NPs' involvement in their treatment. PT23 stated she would rather deal with the NPs as she *"found the doctors very inconsistent"*, especially when implementing patient management plans. She (PT23) found this *very daunting*, particularly considering that these plans affected her newborn daughter, and she continued:

... one doctor will apply a certain strategy and then another doctor has obviously a different approach or a different vent so things chop and change quickly without asking you ... I even see the nursing staff asking the NPs for support when they are not happy with a treatment the doctor has prescribed (PT23).

Parents (PT22 and PT23) also commented on the stability brought about by the NPs on the treating team, citing this as *very positive*. PT22 expressed her *"frustration with the medical rotation"* and indicated her satisfaction in the continuity of the NP role. HP23 indicated she found it hard when the doctors changed, and:

... having the XX [NP3] around all the time has made a huge difference because you sort of think okay the doctors are only here for that two weeks and they've only got a short amount of time with you and you only see them for five minutes

on rounds and it's like bang, bang, bang, they've done this baby, they've done that baby ... and I'm confused (PT23).

Study participants readily expressed their recognition of the clinical expertise of the NP with which they worked. NP2's perseverance was attributed to her passion and expertise related to emergency care, and her intricate understanding of the mechanisms that operate within the ED. The NPs' visibility made them more readily accessible to patients and their families and to the ward staff that they worked alongside. HP7 commented that NP2 *"could be easily found as she was always seen around the emergency ward"*. HP15 also acknowledged it was *"great to have the NPs on duty, as they didn't leave the floor they were visible for all staff and parents"*.

Linking access to visibility, four of the five parents associated with NP3 (PT21, PT22, PT14 and PT25) commented on *"how nice it was to have XX [NP3] who you could see on the ward, especially when we wanted an update of the progress of our baby"*. PT21 added she had *"a lot more access to the NP [than the doctors]"* when she needed to ask questions as they were *"always visible on the unit"*. Regarding high visibility, HP11 said that NPs:

... should have a visible presence on the ward to support the clinical staff [junior doctors and nurses] because most of the time the junior staff need help and support with performing clinical procedures (HP11).

Ready accessibility was a concept raised by a number of participants and was related to the consistency of availability of the NP. Access was also, in part, related to the hours of service provided by the NPs, although these varied across the three sites. NP1 provided an eight-hour service from 8 am to 4.30 pm on Monday to Friday. NP1 did not work public holidays, and was not replaced when she was off duty. NP1 *"determined her own work hours to best address service and patient needs after consultation with the Director of Emergency"*.

NP2 worked a rotating roster, mostly on evening shifts. As a means of *"ensuring adequate coverage when the greatest number of subacute patients attended the ED"*

(NP2). NP2 was rostered to work evening shifts, including weekends. NP2 commented that the hospital administrators originally allocated her:

... a 9 to 5, Monday to Friday, but they then discovered that doesn't cover our busiest hours [in fast-track] ... so if the position was going to be of value as far as me being here during peak periods [afternoon shifts and weekends] and trying to help patient flow through, then we [the ED Director and NP] felt that it was probably better if I worked a rotating roster during more peak times (NP2).

When NP2 was not on duty, a part-time GP was rostered on.

NP3 reported filling a 'registrar' position on the medical roster and worked in either the NICU or the SCN. NP3 worked a rotating 12-hour roster (8 am to 8 pm) if assigned to NICU, or an eight-hour roster (7 am to 3 pm, 3 pm to 11 pm or 11 pm to 7 am) if assigned to SCN. HP11 said, "*where possible he tried to put an NP on duty with a registrar as their skills would complement each other but due to a shortage of registrars ... the nurse practitioner [mostly worked] with a transitional nurse practitioner*" (HP11).

4.8.3 Sustainability of the Nurse Practitioner Service

Sustainability refers to the principle that everything needed for survival and wellbeing depends either directly or indirectly on the natural environment (Merriam-Webster Dictionary, 2016). In the case of the NP Service, the environment in which the NPs worked created and maintained the conditions under which they can co-exist with other members of the health care team. Sustainability and survival of a species requires traits that promote resilience. For the NPs, traits that promote and demonstrate resilience include leadership and motivation. Five health professionals (HP1, HP3, HP8, HP9 and HP13) commented on the importance of the clinical leadership role the NP plays in their units. HP13 continued "*XX [NP3] has worked hard to earn the respect of the staff ... she makes informed decisions, delegates appropriately, resolves staff conflicts and acts with integrity*" (HP13). Motivation generally refers to the internal and external factors

that stimulate an individual with the desire and energy to be continually interested and committed to a job (O'Neil, 1994). HP1 commented *“the positive attitude and great enthusiasm XX [NP1] shows about her patients is a reminder to her colleagues who, I feel, mostly have a poor attitude towards this type of people [patients with mental health issues] attending emergency department” (HP1).*

Sustainability is about creating a long-term, intergenerational service that others see the value of and wish to work with (Considine & Fielding, 2010). The NPs recognised that being a role model for other nurses was an important influencing factor towards sustainability. NP3 claimed it was because other nurses saw her *“holistic patient involvement that they were encouraged to consider a clinical career on the NP pathway”*. NP3 reported that other nurses had said things like *“oh I think I want to get my children out the way and really do this” (NP3)*. HP11 commented on how empowering it was for nursing staff in the NICU when colleagues from outside the unit said, *“I can do this [become an NP], I can get those skills, I can get that ability and how they ... desperately want to become an NP”*. The visibility of NP has promoted the position to more nurses so HP5 felt that in the future there will be *“nurse practitioners across the board ... it would be fantastic” (HP5).*

Succession Planning

The concept of succession planning was evident at Hospital 3, with an additional four nurses already assigned the title of transitional NP. These nurses worked alongside NP3 taking on elements of the NP role (with more supervision than that received by NP3) while they worked towards formal endorsement. There was no indication as to whether there would be additional positions created once the transitional NPs are endorsed:

... the four transitional people we have are all at the stage of completing; having completed their Masters of Nurse Practitioner programme and all their clinical training and all they now have to do is submit to the [Registration] Board their paperwork (HP11).

Looking forward, the next logical step identified by HP14 was “*to see positions created for the transitional NPs*” (HP14). HP4 would like to be able to employ “*more nurse practitioners with different specialities*” (HP4) to work in and alongside ED staff. HP4 not only attested to acceptance of NP1’s position, but also suggested the position should be enhanced and offered for extended hours on the current role thus “*going beyond the Monday to Friday 9 to 5 and including weekend and evening/night shifts*” (HP4).

A few HPs had interesting suggestions for the future of the NP Service. HP10 would:

... like to build on what we have got [the existing NP Service]. We also need a transitional nurse practitioner here ... I would like us to be able to also use nurse practitioners in the acute area. There would be plenty for a nurse practitioner to do and then again, especially for junior doctors, and the benefit to the patients would be really substantial (HP10).

One of the ED doctors expressed a desire to have more NPs in the ED and felt the NP Service had to “*play a big role in the future ... especially now with them [the NPs] being accepted by doctors and others*” (HP6). HP3 brought up the issue of maintaining the NP standards and looking at creating further steps in the NP pathway “*because you can’t just end people’s training, you’ve got to continue to educate, provide service and provide the ability to move off in that position as well*” (HP3).

At Hospital 1, it appeared that the lack of succession planning meant that if NP1 was to resign, the service she had established would be vulnerable to dissolution, potentially requiring a return to the pre-NP Service model. How well a new service model integrates within and alongside existing services influences its sustainability. HP14 felt the transition of the NP Service at Hospital 3 into the existing health system had generally been “*really smooth; it’s been a really welcome change. I know the last two or three Transitional Practitioners were really excited because two of them had been here forever anyway as CNSs*” (HP14).

4.9 Enablers and Constrainers to the Early Implementation of the Nurse Practitioner Service

The triangulated data revealed several factors that either helped or hindered the early implementation of the NP Service. In some circumstances, a single element could be both a constrainer and an enabler, depending upon the context in which it was examined.

4.9.1 Enablers

In terms of evolution, the enablers are possessions or traits, mostly in the external world of a species that helps them in their quest for existence and viability (Merriam-Webster Dictionary, 2016). In the pursuit of establishing the NP Service in NSW there were a number of factors that assisted in the development of the services to emerge from the data. These were the creation of the legislative title and the specification of a new specialist scope of nursing practice.



Figure 4.6: Model of the Evolution of the NP Service—Identifying Enablers

Legislative Title

As identified in the literature review chapter (Chapter 2), NPs have a protected professional title. Professional titles hold significant value, for they define a role, an employee's area of responsibility, and convey authority and responsibility (Harmer, 2010; MacDonald, Herbert, & Thibeault, 2006). In addition, professional titles are important because they describe what the person does, to assist in minimising confusion with other similar roles. The protected title enables the NP to perform an enhanced

range of skills and, as was the case for NP1, to develop a new model of care to complement the care already provided by the ED and broader hospital setting.

The protected professional title could be classified as a potential enabler yet to be realised. In reality, the endorsement of the NP title did not automatically endow participating NPs with the full scope of practice conferred by the legislation. NP2 stated: *“we have a title that cannot be used by any other nurses but it does not mean everyone here knows who I am ... what I can do”*. NP2 further explained *“my qualification says that I can do certain things ... advanced practice ... but for me to be able to do what I do has been a hard fight ... I still don’t think I work at the level that my qualification should allow”* (NP2). NP1 did not indicate the same level of frustration, and the candidate’s field notes described a higher level of independence and autonomy in NP1.

Scope of Practice

As described in the literature review chapter (Chapter 2), the protected title for NPs resulted in the need to implement a context-specific scope of practice. The scope of practice underpinned the development of each NP Service and, as such, was a driving force or enabler. NP1 commented *“my scope of practice is so important to me. It defines what I can do clinically, how I can work safely and determines my degree of autonomy”*.

Unfamiliar with the scope of practice of an NP, two patients (PT4 and PT23) commented on their amazement that NP3 carried out every care requirement for them, with PT13 stating *“I was surprised that I didn’t need to see other doctors”*, while PT4 remarked the NP Service was *“a complete care package ... this is the first time I have experienced this”*.

Although the scope of practice has supported the NPs’ consistency in the clinical area, it has also been a barrier to the early implementation of the NP Service. The flip-side effect of the scope of practice will be described below.

4.9.2 Constrainers

There were several factors that had the potential to constrain the evolution of the NP Service in NSW. These included the historical and traditional hospital hierarchy, the overlapping of professional boundaries, and a lack of identity. In this circumstance, *identity* refers to external visual signposting and cues regarding the NP, and will be described in more detail later in this section.

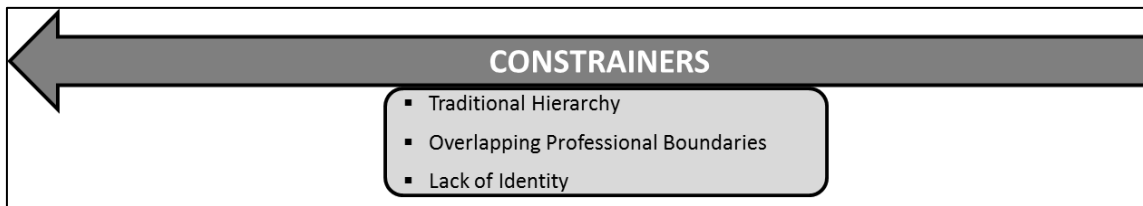


Figure 4.7: Model of the Evolution of the NP Service—Identifying Constrainers

Traditional Hospital Hierarchy

In the natural world, the more dominant species will resist the intrusion of newcomers or competition to protect what is theirs, their food and their water, and to strengthen their own chances of survival and prevent a weakening of their own species. Given the dominance of the medical profession in the history of health care policy, it was not surprising that medical personnel wanted to ensure they would be part of the change process that accompanied the introduction of the NP and influence the process of cladogenesis. This was often an attempt to ensure that the NP Service would become no risk to the traditional dominant hierarchical status of the medical profession regarding clinical practice.

It was this steeped history that often caused conflict and impacted upon the NPs' autonomy. Some medical officers appeared to want to maintain the historical relationships that had existed between nurses and doctors. HP12, a medical fellow, considered himself as "*in charge of the NPs and in the morning [medical] handover I go around with XX [NP3] to make sure she is medically caring for the babies correctly*"

(HP12). Further, he indicated that his interactions with the NPs included: “*giving them some new ideas on ... changing their management and try to guide them ... and supervising them and ... teaching them as they lacked a medical degree*” (HP12).

Although the NP positions were described within the organisational structure as senior positions, none of the three were members of the managing executive within their clinical specialty. This meant that there were still potential threats to the survival of their position as they were not involved in discussions and decision-making related to the clinical specialty at a level where they could influence decisions regarding funding and service delivery models, in the present and for the future. They had a voice only through a medical officer or a nursing administrator. In all three cases “*the NPs reported directly to the Medical Director of the unit where they worked*” (Field Notes Hospital 1, 2 and 3), unlike their ancestral group where it was almost unheard of for a nurse to report to a doctor for professional issues. Despite the fact that they were nurses, the NPs did not appear to have any formal links with nursing administration. NP2 revealed “*I am not sure the nursing director would know who I was or what I do*”.

For many years, doctors provided nursing training. At Hospital 3, the process seemed to have gone full circle, with two doctors (HP11 and HP12) both claiming responsibility “*for the NP training programme*” with both doctors asserting that “*the training they provided was more relevant than other nursing or academic training given*” (HP11). This was another expression of the patriarchal approach. With that said, these two respondents appeared to deliver contradictory responses, going on to say that while they identified the knowledge deficit of NP3, both were more than willing to allow NP3 “*to teach the new doctors rotating through the unit*” (HP11), with HP12 saying that the NPs “*are good enough to teach junior doctors the skills needed in NICU*”. There appears to be some confusion over whom is teaching whom in Hospital 3, with HP15 stating:

... the new doctors rotating through the ward got a more thorough orientation and unit experience as they were mostly buddied to the NP who showed and supervised procedural skills ... that previously they would have missed out on because no doctor was available to assist them (HP15).

The changes to the traditional hierarchy with the introduction of the NP into the health service structure meant that responsibility for decision-making shifted from the medical staff to NPs for some patients whose presentation fitted within the NP scope of practice. These shifting or overlapping boundaries were a cause for concern for some health professionals and patients.

Overlapping Professional Boundaries

It was important that the NPs and their colleagues recognised the boundaries of their scopes of practice. However, defining their space through the application of the scope of practice was also a source of potential (and in some cases, actual) conflict between professional groups. Decisions that were once the responsibility of medical staff were delegated to the NPs, within their scope of practice. The shifting of this boundary was seen as positive by the NPs, but it was not necessarily a position supported by all.

In the early days of the NP movement, medical staff postured in an attempt to dissuade policy changes that would blur the boundaries they had marked out for themselves. In the same debate, NPs postured and breached those previously established medical boundaries in the quest to be recognised in their own right, under their protected title. NP3 described her journey as an NP:

... people here think that getting recognition with the scope of practice is the end of a process ... but honestly, it was the beginning. When I started to assert my professional judgement because I had a document that legitimised me I got a lot of push-back ... from everyone ... sometimes I doubted myself ... I have come a long way ... everyone has ... I am now making decisions that a few years back I would have asked a doctor to make ... there are still days or situations when my position is questioned (NP3).

Some participants, particularly nurses, described their medical colleagues as territorial. But the workspace of the medical staff and the NPs could better be described as the *home range* rather than territorial. Sometimes, the blurred boundaries made it difficult

for staff working alongside the NPs to really know and understand what “*the NP could ‘legally’ do*”. The SMO in ED (HP7) said that the NPs’ “*scope of practice had created tension*”, which made it hard for the nurses working in triage to know the types of cases NP2 could consult on, implying that the boundaries were perhaps not as clear or consistent as they needed to be:

There is lots of difficulty in getting a clear picture of what the nurse practitioner role should be because a) it’s new and b) messages coming from other hospital medical specialists can make it difficult to actually clarify precisely what the NP can actually do (HP7).

To address the situational tensions, NP2 described various strategies used to “*promote the new position in my hospital, which included attending workshops and area meetings*” with other NPs to debrief and “*talk about our practice, and promoting awareness of the new position*”.

Among the health professionals interviewed, there was a lot of confusion over what an NP could and couldn’t do and most of the health professionals and patients interviewed for this study incorrectly believed NPs were dependent on medical staff to indemnify their practice. HP8 saw the role of an NP “*as being a doctor’s assistant*”, and adding “*doctors need a lot of help ... if a nurse practitioner helps them by doing nursing skills that gets a patient through quicker and the doctor can move on to see the next patient*” (HP8). HP1 identified the NP role as “*aiding the doctors by performing the initial observations on a patient before calling the doctor to perform the mental health examination*” (HP1).

For the NP, the concept of autonomy seemed to be a relative term, with varying degrees of understanding demonstrated by colleagues. While some nursing colleagues (HP3, HP5 and HP8) seemed to view the NPs as working autonomously, this was not a view shared by all nurses, as HP9 shared “*the NP can see patients more independently ... but still needs to consult a doctor before discharging a patient*”.

When asked to quantify the level of their autonomy in everyday practice, the three NPs interviewed all believed they “*had almost 100% autonomous practice*” (NP1, NP2 and

NP3]. Commentary by several health professionals seemed to indicate that some NPs did not really perform autonomously, even within the described scope of practice, and were instead still very much under the ‘control’ of their medical colleagues. HP7 indicated that the NPs “*deliver care in a different spectrum to the care that is delivered by medical officers and [he] sees the NPs as ... certainly not functioning autonomously but functioning semi-autonomously in the department*” (HP7).

Because NP3 filled a line on the registrar roster; it seemed inevitable that there would be confusion about the standing of the NP, with the position likened to that of a doctor. HP13 stated the NPs:

... do work as doctors in that they are responsible for the hour to hour running of the nursery and for looking after the babies ... it is like working as a registrar but then XX [NP3] is also expected to help educate all the new registrars that rotate through and educate the nurses and it’s a big job (HP13).

The lack of understanding of the role of the NP may have contributed to the NPs not being able to fully explore their scope of practice, while on other occasions it may have led to the NPs being asked to do more than their scope of practice allows.

Lack of Identity of the Nurse Practitioner Title and Role

The lack of identity of the NP title and role was related to the virtual camouflage or invisibility of the NP Service in the clinical setting. Defining the word identity in this chapter included the qualities, skills and characteristics displayed by the NP that made them different from other health care professionals (Merriam-Webster Dictionary, 2016). The individual NPs were recognised but they were unknown by the specific title and role they played in the health care team. The NPs appear to have contributed positively to patient care yet their title and role was virtually unknown; this lack of identity is why this is classified as a constrainer to the evolution of the NP Service. The NPs camouflage was essentially provided by their ancestral heritage because of their intimate understanding of the health service in which they worked.

Unknown to Patients

Despite clear and open declarations of who the NPs were, they were frequently incorrectly identified by the patients of their service. All three NPs were observed to introduce themselves as an NP when they greeted patients/parents or health professional for the first time. The most common introduction used by all three NPs was “*Hello, my name is XX. I am a nurse practitioner working at this hospital*”. Despite this formal identification, patients, parents and on occasion, other staff still did not identify the NP as an NP. NP3 was observed constantly correcting this misnomer but there was no change—“*she was still referred to as doctor*” (Field Note Hospital 3). NP2 stated she tried to “*make them aware that I’m not a medical practitioner but when they [the patients] are going to leave, they say ‘oh thanks doc’*”. PT21, PT22, PT23 and PT24 all assumed initially that the NP “*was a medical doctor*” and it took them between one and three months to stop identifying the NP as a medical doctor.

Most of the patients who attended ED at Hospitals 1 and 2 indicated that they believed they were waiting to see a doctor. Even though people frequently identified that they were not sure where the NP fitted into the health care team, this did not seem to affect their willingness to have the NP look after them or their children. A triage nurse (HP6) indicated she explained to patients “*it might speed your process through the department if you agree to see the NP*”, with the result being they agreed to see the NP.

Parents of babies associated with NP3 also initially thought the NP was a doctor, and “*it took a good few weeks for me to realise she [NP3] was not a doctor*” (PT23). As NP3 was working as a ‘registrar’ in Hospital 3, it was reasonable that there was confusion created over who she was as she was not dressed in a uniform, because she “*worked different hours to the nursing staff and ... was listed to work on the medical roster*” (NP3). NP3 explained:

I know parents don’t know I am an NP which is a real shame. I keep reiterating it when meeting new parents. I introduce myself and say I am a nurse practitioner. Sometimes they will ask what that means, sometimes they won’t, but I always say nurse practitioner so that they know I’m a nurse actually

looking at their little baby or going to talk with them around in delivery suite (NP3).

When patients were interviewed following triage to determine if they were offered the services of an NP, they said such an offer had not been made by the triage nurse. PT12 was advised by the triage nurse *“a doctor would be seeing me today”*, while another patient (PT2) was told *“I needed to wait to see a doctor. I didn’t know I could see anyone other than a doctor”*. By contrast, when the triage nurses were interviewed, they often indicated they offered patients the services of an NP to treat them. HP5 commented she *“strongly suggested to the patients that they see the NP”*. A similar comment was made by HP3 and HP5.

There was a lot of conflicting information provided by all participants when they were asked to describe their understanding of the NP’s role. When asked if they had heard the term ‘nurse practitioner’ before, 13 of the 15 patients interviewed had *“never heard of a nurse practitioner”* and did not know what they did. Parents were able to describe what they saw the NP do for their baby, even if they could not necessarily describe it in terms of an NP. Two patients (PT11 and PT15) acknowledged they knew something about NPs, although their response showed a significant lack of true understanding about the role of the NP. PT11 said that *“they’re [NPs] going to help ambulance officers to be more like doctors”*, while PT15 thought NPs were *“doing things that doctors used to do like clean and dress wounds, take temperatures and give dietary advice”*.

Like most of the patients interviewed, PT12 believed that she *“had consulted a senior doctor”* because NP2 had *“explained things to both her and the nurses”*. Although she had never heard the term nurse practitioner before, PT13 was aware she had seen an NP as she *“saw it written on her uniform pocket”*. When asked about what NP3 was doing with her baby, PT21 responded with the comment *“what normal doctors do like procedures, ordering medications and tests, and checking the baby each day”*. HP11 shared their perception of the situation saying:

The parents are happy because we [the health care team] provide good care for their babies and so long as they get the answers to their questions, good communication and the babies are cared and loved in the nursery, then I really

believe that they don't often know what a nurse practitioner/registrars is or who they are (HP11).

Unknown to Colleagues

It was not just the patients/parents who seemed unable to correctly identify the NPs by their title and role. This lack of identification of the NPs extended to colleagues who worked alongside them. In Hospital 3, the NP was observed to be in charge of the daily medical ward round in SCN for three periods of five consecutive days, Monday to Friday. A medical record audit revealed that not once did the junior doctors who were writing up the patients notes identify the NP was in charge of the ward round or even that an NP was present for the ward round. All other staff members present on the ward round were identified by name and position in the patients' notes, including the nurse unit manager.

This made it difficult trying to collect data from patient notes, or to determine the NP input to the patient care plan as there was nothing written in the patient notes to indicate that the NP had seen the baby or spoke to the parent based solely on the patient notes, it would be possible to draw the conclusion that the NP did not attend the daily round (Field Note Hospital 3).

Although HP9 understood an NP was a nurse with more advanced skills, she still classified her as “*working as a doctor*”. HP9 also thought the NP role was “*becoming more like a medical role*” but noted the NPs “*have a lot of training; a lot of extra education, more than the doctors*”. HP6 remarked the NP could do “*things that the GP couldn't do*” and maintained that the NP was “*basically working as a doctor*”. HP8 also identified that the NP was working as a doctor but commented the NP “*still had to pass the patient onto a doctor to tidy up and to discharge the patient*”. Another aspect contributing to the relative invisibility is related to being able to be mapped or found in the hospital. Interestingly, with all the signage around a hospital there was no signage observed for an NP Service at any of the three hospitals.

4.10 Summary

In summary, the aim of this study was to gain an understanding of the early implementation of the NP Service in NSW in 2008. The specific research objectives were to understand the physical environment and organisational characteristics of the NP Services, to investigate the patient care provided by the NP Service, to examine NPs' views about their role and its integration into the existing health care team, to investigate health professionals' views about the NP Service and its integration into the existing health care team, and to examine patients' experiences of the NP Service. These research objectives were aligned with the elements of the concept model, described in Chapter 3 (Section 3.12.4), and considered within the construct of that paradigm.

The use of an intrinsic case study using the NP Service as the case and the utilisation of multiple data sources enabled the story of the early implementation of the NP Service in NSW to be captured. The concept model initially assisted in managing the data and the final linear model of the evolution of the NP Service organised the data into a meaningful arrangement to capture the participants' views of the early implementation of the service. Findings from the medical record audit were used to contextualise the work of the NP.

Through thematic analysis of the observation and interview phases, four themes were developed from the data. The first theme, speciation, presented participant responses about the ancestral links of the NP to the nursing profession and how the NP Service was created. The second main theme exemplified how NPs adapted and assimilated into the existing health services through defining their space and filling a niche. The third theme, co-operation, illustrated the participants' views on the harmonising of the NP Service with the health services through symbiotic practices and working with patients. The final theme described the features required by the NP Service for succession, including acceptance, consistency and sustainability. Enablers such as legislative title and scope of practice affected all four themes, as did constrainers including traditional hierarchy, overlapping professional boundaries and lack of identity of the NP title and role.

While the role of the NP was generally poorly understood in terms of the position description, patients or parents of babies seemed less concerned by the title, and more focused on what the NP did and how it made them feel. The success of a species survival is related to a number of factors connected to their assimilation into the new habitat, such as defining their space and filling a niche. Further, succession of the NP Service is dependent upon the full potential of the NP being realised so that they can operate to the full extent of their defined scope of practice, and ultimately provide the best-practice patient experience and outcomes, as well as upon organisations putting in place models that allow the development of 'trainee' NPs.

The evolution of NP Services is analogous to the Darwinian theory of evolution. The intrinsic case study design enabled a comprehensive examination of the aim and the five research objectives. NPs reported positive perceptions of working as part of a multidisciplinary team, despite challenges posed by the traditional hierarchy and differing perceptions about their roles. The determination and resilience of individual NPs was crucial during the evolution of these models of care, especially when there was less support from health care organisations. The triangulation of the data sources, observation and interviews strengthened these findings as the different data sources together gave more comprehensive insight into the early implementation of the NP Service than could any single data source.

The next chapter is organised around answering the five research objectives related to this thesis. Contemporary data will be used to compare what was found in this thesis to what has changed in the eight years since data collection for this thesis.

Chapter 5: Discussion and Conclusion

NP Services are playing increasingly important roles in the delivery of modern health care to all Australians (Middleton et al., 2011). Since their inception in 2000, NP Services have evolved across Australia, albeit at different rates and in different ways. Evolution is not a static process; it is a state of continual change as species seek to survive in a changing world. This study has focused on the early implementation of a new type of service, namely, the NSW NP Service, identifying both how it has integrated into the existing health care team and the experiences of the health professionals and patients associated with the service. At the time when the data were collected (November 2008), NSW was in the relatively early stages of implementing NP Services, and all three NPs interviewed for this study described varying degrees of difficulty in exercising their full scopes of practice. Although there has been a hiatus of eight years since this study was conducted, some aspects of the NP role and service development have continued to change and evolve, while others have not. These issues will be discussed in this chapter.

This study was one of the first studies in Australia to investigate comprehensively the early implementation of the NP Services in NSW within the existing health care service. In this chapter, a brief summary of the evolution of the NP Service, the five research objectives are discussed, comparing the key finding of this study with the contemporary literature. The strengths and limitations of this study are also reported before outlining the thesis recommendations for the workplace, for policy and future research.

5.1 Summary of the Evolution of NP Service

The evolution of the NP Service is analogous to the Darwinian theory of evolution, and has mirrored similar challenges to those described in the animal kingdom with respect to viability and survival. The first stage of the Darwinian process is speciation: the development of the new group that is similar to the original species but different in some way. Speciation (Theme 1, Section 4.5) primarily contributed answering to the

first research question, describing how the services were created and how they fit in. This theme detailed how each NP evolved from their ancestral heritage, that being a registered nurse; and how the NP services evolved – an ecological process known as cladogenesis. NPs evolved from the ancestral group of nurses, but changed enough to be acclaimed as new and different group, defined by their legislated title and protected scope of practice. Consistent with its biological analogy, the speciation of the NP occurred over many decades, and was influenced by many forces (clinicians, academics, consumer demand, government, and industrial groups) both nationally and internationally; some in support of the differentiation and some strongly opposed to it. As Chapter 2 has indicated, the establishment of the NP Service in NSW from conception to implementation was a detailed and lengthy process requiring legislative changes to support its viability and sustainability, by addressing the issues of education requirements, registration, and the development of a competency framework to allow NPs to practice in designated areas. Despite the legislation, the development of the service has been variable between facilities in NSW, and across the country.

Adaptation (Theme 2, Section 4.6) highlighted what the NPs needed to do in order to assimilate with the existing health service, namely: define their space and fill a niche. Given the variable support for their differentiation, NPs had to strengthen or develop skills to enable them to persevere during a period of incredible change, and often resistance. The majority of participants described the skillset bought to the position by the NPs that supported their evolution, and how that skillset influenced the NPs role within the healthcare team.

Co-operation (Theme three, Section 4.7) built on the notion of assimilation and explained how the NPs harmonised with the health care services through symbiotic practices with other health care professionals and in working with patients. During the early evolution of the NP Service there was substantial concern amongst policymakers about the effect that NPs would have on other health professional roles within the health care setting (Jennings et al 2015; Sangster-Gormley, Martin-Misener, Downe-Wamboldt, Dicenso 2011). Embedded within the discussion of advanced practice is the concept of collaborative practice. In Darwinian Theory, many species survive because of a co-operative or symbiotic relationship where two groups each have

something that the other needs to make survival of both more likely. In the animal world, each species recognises the need to establish these relationships in order to facilitate their survival, and works to promote the relationship.

Succession (Theme four, Section 4.8) examined the survival of the NP Services through validation, consistency, and sustainability of the NP Service. If a species cannot find a way to adapt and plan for succession, it will not survive. The varying acceptance and uptake of NP services across NSW and a relative lack of research to prove the value of existing services highlights the need for such research to occur as well as the need for targeted strategies be put in place in order to sustain NP services. Such strategies include making positions available; creating transitional positions for nurses aspiring to become a NP; securing a budget to support the NP service, and research that proves the value of the NP service to patient outcomes.

Enablers, such as legislative title and defined scope of practice; helped the evolution of the NP Service (Enablers, Section 4.9.1). Some enablers were overt such as the legislative title and scope of practice that described what and how NPs could practice. There were other enablers that were more subtle and included support from administration and colleagues, clinical demand, and the persistence and resilience of the NPs themselves. Factors that hindered the NP Service (Constrainer, Section 4.9.2) including traditional hierarchy, blurred professional boundaries and lack of identity were addressed. New and old roles co-existed and this led to blurred professional boundaries. This was demonstrated by the NPs moving back and forth between the traditional role of nurses as assistants to adopting traits of doctors as dominant care providers and solo clinicians. These enabling and constraining factors will be discussed in more depth later in this chapter.

In summary, the intrinsic case study design and the use of mixed methods research that underpinned this study enabled a comprehensive examination of the aim and the four research questions. NPs generally reported positive perceptions of working as part of the multi-disciplinary team, despite the challenges posed by some of the traditional hierarchy and differing perceptions about their role. The determination and resilience of individual NPs' was crucial during the evolution of these models of care, especially

when there was less support within the healthcare organisation. The next section is organised around the achievement of the research objectives.

5.2 Achievement of the Research Objectives Using Key Findings and Contemporary Literature

Research objective 1: To understand the physical environment and organisational characteristics of the NP Services. The key findings in this study associated with this objective were the variable involvement of the NP in the implementation process, the need for formal organisational change management, the loss of a senior nursing position to create the NP position, the blurred professional boundaries, the impact of the NP Service, invisibility of the NP service and organisational contingency planning for sustainability of the NP Service. These findings will now be discussed using contemporary literature.

It is unlikely that introducing a new service alongside and within existing health services would have no impact, for with change comes impact. Impact can be felt both positively and negatively; and is generally felt by both sides where the interface occurs. Promoting the concept of healthcare reform and active consumer involvement, NP Services were initially developed to improve service efficiency (Comiskey et al., 2014) and / or address resource limitations within a health service (Gardner, et al, 2016; Dunne. 2009). The method and speed of service establishment has varied, and based on the three study sites in this thesis, the degree of consultation has also varied. What was common across all three sites was the fact that there were very small numbers of clinical nursing staff involved in the implementation process. While the establishment of a locally agreed need for a NP Service required consultation with stakeholders such as hospital management, professional groups (including nursing and medical practitioners) who were likely to be affected or involved, relevant industrial representatives and consumers, there was often no planned process for integrating and monitoring the progress of the pioneer NPs into the health system (Chiarella, 2008; Foster 2010). For the most part, the implementation of the NP Services into the Australian clinical settings was largely undertaken on an ad hoc basis relying on the initiative of managers within

organisations (Chiarella, 2008). Wintle and colleagues (2008) identified the importance of an inclusive and collaborative approach to implementation when describing implementation of a NP Service in Victoria.

From an Australian perspective, NPs were initially implemented in Australia predominately to fill a much needed gap in health service delivery in rural and remote areas (Mills, Lindsay, Gardner, 2011). However, since inception, there has been slow growth of rural nurses willing to work at this advanced practice level and the rate of endorsement has been varied with the majority of NP employed in metropolitan settings (Middleton, et al., 2011; Hain & Fleck, 2014). The three NP Services explored in this study were all linked to acute care units within major NSW public hospitals. Middleton et al (2011) found almost two-thirds of their participants were employed in a metropolitan area and almost 75% associated with acute care. This was different to the United States and Canadian NP models where the most common clinical practice field was reportedly the family practice NP (Shaffer, 2012). Family NPs serve as primary and specialty health care providers under the indirect supervision of a medical physician (Doan, Hooker, Wong, et al 2012).

Common across all three study sites in this study was the very small numbers of nursing staff reported as being involved in the planning and implementation of each NP Service. According to Chiarella et al., (2008b), the successful establishment of locally agreed NP Services required consultation with stakeholders, including hospital management, professional groups who were likely to be affected or involved (such as nurses and doctors), representatives from relevant industrial groups and consumers. Despite this awareness, the implementation of NP Services in clinical settings in Australia was largely ad hoc, relying on the initiative of individual managers within organisations with no planned process to integrate and monitor the progress of pioneer NPs in the health system (Chiarella & McInnes, 2008a; Foster, 2010; Wintle, Newsome, & Livingston, 2008). Despite the evidence for including the NPs in the implementation planning process, participants in this study reported that the NP Services of interest were primarily initiated by individual medical managers and implemented with minimal planning, collaboration and discussions. Only one of the three NPs in this study was involved in the implementation process.

All three NPs in this study described the various degrees of difficulty encountered when the NP Service was introduced into the existing health care service, where consultation and communication appeared non-existent. Two NPs started in their positions without first planning the introduction of change and partaking in the communication strategy to accompany it. Organisational change management is important when implementing new service models and the introduction of change often presents challenges to the system into which the change is introduced (Braithwaite, 1995). Even where the change is believed to be good, even desirable, the process of affecting the change can be fraught if all stakeholders are not engaged and consulted prior to its introduction (Braithwaite, 1995). Varying the practices of health care providers, as has occurred with the introduction of the NP, continues to be a challenge (Morris, Wooding, & Grant, 2011). For practice change to occur, specific implementation strategies need to be evident, the creation of evidence-based practice guidelines need to be employed and any potential issues need to be identified and solved in the planning stage (Grimshaw et al., 2004; Grimshaw et al., 2006). Effective change management strategies include the development of an evaluation strategy to determine if the change has affected the desired outcome(s) (Grimshaw et al., 2004; Grimshaw et al., 2006). Despite the evidence for such practice, none of the three NP Services in this study appeared to have been supported by such organisational planning.

The blurred professional boundaries was created as new and old roles co-existed. This was demonstrated by the NPs moving back and forth between the traditional role of nurses as assistants to adopting traits of doctors as dominant care providers and solo clinicians. As a consequence of finding new routines and defining new identities, blurred professional boundaries were not only found in this study but is consistent with other research, both qualitative and quantitative. A study in the UK (Main et al., 2007) interviewed health professionals about how they perceived the current and potential role of NPs in primary care health care. Respondents (GPs and senior RNs) indicated blurring of professional boundaries was a problem because it negatively affected role understanding, agreement on scope of practice and responsibility by restricting the NPs autonomous practice. The integration of a NP into an existing healthcare team is not always smooth and they are not always understood or accepted. NP2, in this study, described the difficulties she experienced due to resistance by the local general

practitioners and their refusal to discuss patient care plans with her. A recent systematic review of thirteen international studies across all types of healthcare settings reported that the combination of task delegation and medical substitution added to the complexity of blurred role boundaries between NPs and medical practitioners (Niezen & Mathijssen, 2014). The introduction of the NP to the team is said to be easier when the nurse is experienced, already known to team members, and has confidence in the current clinic and healthcare team (Fang & Tung, 2010), but this is not always the case. Goodyear and colleagues (2015) indicated that if the nurses were already working in their clinical settings at an advanced practice level prior to becoming a NP, the disruption that resulted following the NPs authorisation was not anticipated by the pioneer NPs themselves.

Globally, NPs have entered the healthcare system as disruptive innovations (Heidesch, 2008). This term describes an innovative and newly introduced model into the health care system that initially interrupts the routines of service delivery but in the long-term is beneficial to system outcomes (Christensen et al., 2006; Heidesch, 2008). However, restrictive policies in Australia have led to the underutilisation of NPs, slowing their successful evolvment. As a consequence Australian NPs have developed strategies to minimise disruption to existing structures and to maximise their impact when working with their health professional colleagues. As was the case in this study, NPs were all enabled to make autonomous decisions and, consistent with findings of previous studies, valued their enhanced autonomy, and self-directed management of patients (Parker, Forrest, Desborough, McRae, & Boyland, 2011). However, they adopted a level of graded assertiveness that did not threaten or undermine the medical practitioners' position, knowing that pushing for change too fast could challenge the collaborative relationship and ultimately detract from the documented strengths of a new service model.

The addition of NPs to the health care workforce disrupted traditional role behaviour of RNs and medical practitioners. The medical practitioners' routine practice of functioning as the main care provider was interrupted by the NP's ability to practice as an autonomous healthcare provider. Adherence to familiar roles was reflected in the subconscious paternalism of some medical practitioners in this study. Some medical

practitioners in this study were still caught in traditional hierarchies, which were nurtured to some extent by system structures fostering uni-directional authority (Willis, 2006). A number of authors described the potential conflicts that can occur if team members felt a threat to their traditional professional boundaries (Kilpatrick, Lavoie-Tremblay, Ritchie, Lamothe, & Doran, 2012). According to MacLellan (2015), health professionals that feel threatened are more likely to reject the addition of the NP Service into the existing health care services. This was certainly the case in this study where some doctors, including GPs, indicated concern the NPs would negatively affect their hospital clinical experience and restrict ward rotation options.

The ability of the NP to intersect professional boundaries in their clinical practice should serve to provide a better understanding of patient needs. Consistent with a research published by Deshefy-Longhi et al., (2008), this study found NPs have been more likely than doctors to engage in counselling of patients. A case study of a MHNP working in ED described a level of intimacy and informality between nurses and patients that was not common among other health professionals. Further Wand and colleagues (2011) drew a distinction between the medical profession focus on treating diseases and the emphasis on health promotion provided by the nursing profession. Nurses, and by extension NPs, are perceived to be people persons and are perceived to be caring, good listeners, trustworthy, and take their time during consultations (Parker 2013). Participants have also commented on feeling 'comfortable and at ease' with a NP (Elmer and Stirling, 2013).

The relative invisibility of the NP Services found in this study (expressed as a lack of publicly visible acknowledgement of the service in the hospital) has also been identified in other studies (Harvey, 2010; Lowe, Plummer, & Boyd, 2013). Contributing factors to this invisibility of the service could be the lack of a clear communication strategy (Lowe et al., 2013), non-existent signs or posters to explain the NP role within hospitals (Harvey, 2010; Lowe et al., 2013), or lack of signage to indicate their existence within the hospital services. For NP Services to become more visible (and consequently understood), a clear communication strategy is necessary to ensure the distribution of information regarding different options of health care delivery (Burgess & Purkis, 2010; Kilpatrick, Lavoie-Tremblay, Lamothe, Ritchie, & Doran, 2013). The services of these

pioneer NPs were seen as a professional challenge as NPs sought to extend their clinical career trajectory. The pioneer NPs believed that formal recognition of their practice would help to increase the visibility of nurses and nursing in general. Visibility of NP Services is important for sustainability (Considine & Fielding, 2010) because administrators and planners need to understand what the NP Service does and how it contributes (that is, the services' value) to the overall health care team in order to support their continued existence.

In this study, the three NPs had previously been employed as a clinical nurse consultant in the same specialty prior to becoming an NP. After their appointment as an NP, their previous position of clinical nurse consultant was made redundant by the organisation, thus removing a clinical senior nursing position. This has happened to many Australian NPs where their previous senior nursing positions have vanished, probably because of financial constraints in the health service (Raftery, 2013). The NP position was established to add a new tier in the clinical career pathway for nurses (Raftery, 2013; Woods & Murfet, 2015), not to create a deficit of promotional positions for experienced clinical nurses. Extension of the career pathway was one of the drivers that the creation of the NP position was intended to address, with the NP position established, in part, to retain senior experienced nurses in clinical practice. A clinical nurse consultant could potentially be offered an opportunity for higher grade duties (with caveats), acting in the NP role as a way of perhaps encouraging them to seek endorsement in the future because they would understand the scope of the role (Woods & Murfet, 2015). As most NP positions in Australia are currently employed in acute care hospitals, this practice making the clinical nurse consultant position redundant has continued in the health sector (Raftery, 2013).

Organisational contingency planning for the sustainability of the NP Service was implemented only in one hospital in this study where experienced nurses were undertaking further studies to become NPs. These nurses were known as transitional NPs and there were opportunities for them, once qualified and endorsed, to work on the registrar roster, like NP3 in this study. Contingency planning is considered a tactical process involving the development of future leadership within an organisation (Bahouth, Blum, & Simone, 2012; Keating, Thompson, & Lee, 2010; Shirey, 2008).

Additionally, contingency planning relates to identifying and grooming specifically skilled professionals who are essential to the organisation now and in the future (Cadmus, 2006; Keating et al., 2010; Raftery, 2013). Effective contingency planning for NP positions has been identified as a vital component for promoting safe practice, for survival of the NP Services (Raftery, 2013) and for addressing the mismatch between service demand and supply. Other researchers have indicated that poorly executed contingency planning, or omission of such planning as part of the implementation phase, will leave the NP Services vulnerable (Considine, et al., 2006a; Considine & Fielding, 2010). The creation of transitional NP positions is the best way to ensure sustainability, so that there are RNs in training who can be offered the opportunity of higher duties when the NP is absent; at the same time, this will enable continuity of the NP Service when the NP is absent.

Currie (2010) claimed that organisational contingency plans are vital for the success of new models of patient care, and for ensuring patient safety and quality health care delivery. Raftery (2013) suggested contingency plans should be prioritised when setting up NP Services by building a multidimensional nursing team using experienced senior nurses, such as CNCs, who, over time, could train as NPs. Clinical nurse specialists could step up to the clinical nurse consultant position to support further the contingency programme. Once NP numbers are sufficient to address health service gaps, an NP locum model could be offered for short- and long-term relief, thus sustaining the NP model of care (Raftery, 2013; Woods & Murfet, 2015). The biggest barrier to this initiative is the relatively low numbers of NPs in Australia, with these divided across a broad range of clinical sub-specialities, making it very difficult to arrange any short- and/or long-term replacement of individual (highly specialised) NPs (Raftery, 2013). Despite Raftery's proposed solution, Keating, Thompson and Lee (2010) found that there was a lack of interest from clinically experienced nurses wanting to advance to NP positions. Reasons cited included a reluctance to partake in further study and the cost of becoming an NP (Keating et al., 2010; Woods & Murfet, 2015), while for others it was the fearful notion of a scope of practice that extends beyond what an RN is required to perform. This was consistent with the responses of the nurse participants interviewed, where most indicated they were not interested in becoming an NP, despite the fact they possessed the experience and skills. This apparent lack of interest or promotional

incentives for RNs creates a potential threat to the sustainability of NP Services into the future (Woods & Murfet, 2015).

All three NPs in this study reported that when they required short or long-term relief for sick or annual leave, more often than not their NP model of care was put on hold because of an inability to find a replacement with the specific skills and abilities and/or the desire required to continue the service. According to Raftery (2013), many NP Services are compromised and vulnerable when NPs are on annual leave, maternity leave or sick leave, especially if there is a lack of contingency planning and rigorous approach to service planning. Such hiatuses open the door for critics to assert that if the health service can survive for whatever the period is without the NP component of the service, then the NP Service is not something unique or integral to service excellence (Raftery, 2013). When the NP Service is not available, the patients are simply redirected to the traditional services provided by medical colleagues (Woods & Murfet, 2015).

Despite organisational support and investment in new service models, little is known about the sustainability of NP Services in Australia (Considine & Fielding, 2010; Middleton et al., 2011; Middleton, Gardner, Della et al., 2016; Raftery, 2013). This contrasts with the abundance of literature on the sustainability of NP models published overseas (DiCenso, Bryant-Lukosius, Bourgeault, Martin-Misener, Donald, Bryant-Lukosius, Martin-Misener, Kaasalainen, Kilpatrick, et al., 2010; Naylor & Kurtzman, 2010; Pulcini, Jelic, Gul, & Loke, 2010; Roland, Guthrie, & Thomé, 2012). When this study was conducted in 2008, NP Services in Australia were in their infancy, with the first NP endorsed in 2000. In 2014, the Australian College of Nurse Practitioners reported the endorsement of the 1,000th NP (ACNP, 2014) and, by September 2015, there were almost 1,300 endorsed NPs in Australia (Australian Health Practitioner Regulation Agency [AHPRA], 2016). Despite support for the introduction of NP Services at both state and national government levels, individual health services sometimes struggled to establish NP positions (Della & Zhou, 2009). In Australia, available NP positions in health services are limited, meaning there is about one established position for every 2.5 qualified NPs (Middleton et al., 2011). A future challenge for Australian health services is to ensure that the continued growth, sustainability and survival of NPs are matched with adequate employment opportunities

within the Australian health care system (Lowe et al., 2013). In this study, one hospital provided an example of this surplus of NPs in relation to employment opportunities, with only one gazetted NP position available and other experienced nurses preparing to become NPs with no NP positions available for them.

Research objective 2: To investigate the patient care provided by the NP Service.

The key finding in this study associated with this objective was continuity of care. This finding will now be discussed using contemporary literature.

Many of the participants/parents interviewed for this study identified the NP as the person adept in providing continuity of patient care, thus reducing the fragmentation of care. The health professional participants linked this to the NPs nursing background where total patient care is a focus and patient advocacy is a role. A recurrent theme in published research, where the unique contributions of NPs to patient care is identified, is the capacity of the NP to improve coordination and reduce fragmentation of patient care (Masso & Thompson, 2014). Fragmentation of care can be defined as an episode of patient care that is provided by different members of the health care team who fail to communicate effectively with each other or share relevant information (Currie, Chiarella, & Buckley, 2016; Lowe, Plummer, O'Brien, & Boyd, 2012; Masso & Thompson, 2014). NPs in Australia have the ability to improve continuity of patient care and undertake advanced skills, as identified in their authorised scopes of practice (Masso & Thompson, 2014). The addition of diagnostic authority—the ability to request pathology tests and X-rays and, in some cases, to prescribe—demonstrate that NPs can comprehensively care and assist in reducing service fragmentation, suggesting that NPs can be responsible for complete episodes of care (Wand, White, Patching, Dixon, & Green, 2011c). However, in a recently published study by Gardner et al. (2014), the results were inconclusive regarding the beliefs of doctors, nurses and allied health professionals about the reduction of service duplication following the introduction of the NP. Others have noted that “no single discipline can provide continuity of care; however, NPs are well placed to fill the gaps in service provision” (MacLellan et al., 2015a, p. 157).

NPs enhance the overall capability of a multidisciplinary team because of the care coordination and person-centred approaches they bring from their nursing backgrounds (Francis et al., 2014). The essential coordination of care concept is patient advocacy and the customisation of care to meet the specific values, needs and wishes of the patient, including their spiritual and cultural needs (Ehrlich, Kendall, Muenchberger, & Armstrong, 2009). One reason for introducing NPs into the health care team was to improve patient care (Dinh, Walker, Parameswaran, & Enright, 2012; Jennings et al., 2015), an outcome reported in this study by health professionals working alongside the NPs as well as the patients for whom the NPs cared.

As two of the NPs in this study worked in the ED, where the term continuity of patient care was the most common phrase used by most health care participants, it was not surprising the most reported aspects of patient care provided by NPs in the literature were related to improved patient throughput in departments such as emergency (Fotheringham, Dickie, & Cooper, 2011; Jennings et al., 2008; Jennings et al., 2015) where the NP positions were established. Such improvements were most obvious during the times that NPs were rostered on, and a markedly improved continuity of care was created by the inclusion of NPs within multidisciplinary teams (Jennings et al., 2008; Jennings et al., 2015; O'Connell et al., 2014; Wand, White, Patching, Dixon, & Green, 2012).. The distribution of NPs into different service models of care such as emergency, mental health and neonatal is also an indicator of how they have affected the health system, particularly when considered in respect to the original purpose of the position's establishment (Considine & Fielding, 2010; Fotheringham et al., 2011; Jennings et al., 2008).

Research objective 3: To examine NPs' views about their role and its integration into the existing health care team. The key findings in this study associated with this objective were scope of practice limitations, care camouflaged by the health system, research activities and cooperative work practices. These findings will now be discussed using contemporary literature.

Once NPs gained their qualification, they were then faced with developing NP Services that would alleviate pressures on certain parts of the health service, improve patient access to health care, and facilitate evolution of both the position and the service (Fry, 2011). Like the three NPs in this thesis, the pioneer NPs were driven by their belief that the NP Service could provide a better health care service for their patients by improving the quality of, and access to, patient care, and provide a better continuity of care (Goodyear, et al., 2015). Six years after NP2 reported her experiences trying to create a better patient journey, a study by Hain and colleagues (2014) reported the frustration of NPs working in metropolitan hospital ED settings regarding the delays experienced by patients as they waited hours to see a junior doctor for minor ailments. This was a significant driver for those nurses to pursue the NP qualification and set about working with health service administrators and clinicians to change the models of care, and in doing so improve the patient experience and also their own sense of job satisfaction (Fry, 2011; Jennings et al., 2015).

NP1 established her position in a space that no one had really taken ownership of, and with a patient cohort in the ED that caused a great deal of angst for both medical and nursing staff working in the area. NP1's colleagues spoke about the relief they experienced when she was on duty. A study by Wand and colleagues (2014) found having a MHNP on duty significantly reduced the staff stress. Because NP1 took on a workload that was not historically embedded in the domain of the medical staff, her acceptance was more positive than that of NP2 and NP3. NPs in this study indicated their frustration with the limitations placed on their scope of practice by the state registration board. The 2014 release of the new NMBA Standards of Practice was designed to address this issue as they are embedded in practice (NMBA, 2015). Cognisant of similar frustrations expressed in New Zealand, following extensive consultation, the New Zealand Nursing Council made changes to the NP scope of practice and education programmes that prepared their NPs to meet the future health needs of consumers. These changes, which came into effect in 2016, broadened the scope of practice and removed the restricted practice of a specialty area, with the Council believing these changes would allow the NPs greater utility and flexibility to meet the health needs of more consumers (Nursing Council of New Zealand [NCNZ], 2016).

One NP in this study indicated her frustration at being limited to practise in subacute, non-urgent cases in fast-track when her expertise and skills could be used in more urgent cases. Literature related to the use of NPs in EDs, published seven years following the data collection for this study, reflected the concerns expressed by NP2, articulating concerns about limiting emerging NPs to fast-track areas as it restricted the use of their specialist skills and the full potential of the role (Jennings et al., 2015).

NPs in this study expressed frustration that their care was camouflaged within the health system as whole, indicating that their medical colleagues often received the kudos for the care given by NPs because the patients they were treating assumed they were doctors. NPs are in fact nurses, and the NPs in this study wanted to be recognised for the advanced practice and broad scope of practice they brought to the clinical setting. These sentiments were consistent with the findings of a study reported by Chiarella and McInnes (2008a) that indicated that NPs wanted to be recognised for their scope of practice, their ability to make autonomous, clinical judgements and decisions, and to take responsibility for those decisions. The NPs' camouflage was also evident in the way they were addressed in the health care setting. There has rarely been a time when doctors were not referred to or recognised as doctors by patients (Chiarella & McInnes, 2008a). In contrast, the NPs in this study were almost never recognised as NPs—they were referred to as either a nurse or a doctor by the patient.

Considering that research is such an important component of the NP role, it was interesting to note that only one NP in this study was actively engaged in research through primary authorship of sixteen recognised journal articles. NPs are clinical nurse leaders in an emergent service field and, as such, need to engage in research to ensure an evidence base for their extended practices (Gardner, et al., 2010b). AUSPRAC identified that only 1.5% of NP time was spent engaged in research (Middleton, et al., 2011), despite research being identified as an integral part of NP positions internationally (Gardner, et al., 2010a; Middleton et al., 2011; Ruel & Motyka, 2009), as well as an explicit part of the Australian NP standards of practice (ANMAC, 2015; NMBA, 2016).

The NPs in this study reported a range of experiences with respect to their integration within the team and the establishment of co-operative work practices, with two NPs

explaining that their greatest challenge to their role came from the medical officers both inside and outside the hospital. Perhaps this difficulty was related to the lack of a clear communication strategy both within and beyond the hospital setting to ensure that in-hospital medical colleagues and beyond-hospital GPs received the information about the new NP positions and their scope of practice, and how the NPs could relate to existing service providers (Newhouse et al., 2011).

Research objective 4: To investigate health professionals' views about the NP Service and its integration into the existing health care team. The key findings in this study associated with this objective were team function, collaboration, acceptance, health professional confusion over the NP role and opposition to the service. These findings will now be discussed using contemporary literature.

Most participants in this study believed the addition of an NP Service positively affected how their teams functioned overall and added a level of flexibility to the way services were delivered. According to Begley (2009), a shared approach is integral to achieving sustainable and safe patient care. This is also the case for the NP. Begley (2009) emphasised that non-functional teamwork can compromise patient safety and further stressed the need to evolve from a historical hierarchical approach to a flexible multidisciplinary one.

The majority of interviewed participants spoke positively about the integration of the NP Service with respect to professional collaborations and teamwork. Effective communication by all three NPs was identified by most health professional participants in this study as an essential component of team function. Nursing staff identified that they felt comfortable talking to the NPs and asking for assistance. The role of NP requires superior interpersonal skills and high-level communication skills to co-operate effectively within a team, particularly where the role was introduced into an already functioning team (van Soeren, Hurlock-Chorostecki, & Reeves, 2011). The introduction of the role was viewed, at least initially, as a threat to some members of the health care team (van Soeren et al., 2011). Research has indicated that when an NP is successfully integrated into a multidisciplinary team, the leadership qualities displayed by the NP

can motivate nurses in their clinical practices, as well as improve co-operation between health professionals and support more evidence-based health care (Gerrish et al., 2011). Workplace interactions and processes between two or more types of health care professionals can be enhanced by inter-professional collaboration and practice-based interventions (Reeves et al., 2008). Research trials have demonstrated improved outcomes when the multidisciplinary team is able to work as a collaborative & cohesive unit (Gardner et al., 2008; Reeves et al., 2008). A recent integrative review conducted by Schadewaldt, McInnes, Hiller and Gardner (2013) concluded that inter-professional collaboration can lead to positive changes in health care, but that further studies are needed to obtain evidence for the importance of inter-professional teamwork.

Acceptance within a team also seemed to be related to the fixed nature of NP appointments. Many respondents in this study commented on the advantages of continuity. Some senior medical staff commented that the strength of the NP role was underpinned by the fact that the NPs had chosen to work in their specific areas, as opposed to the junior medical staff on a set rotation, who may have little interest in the clinical areas to which they are assigned for a three- or six-month period. According to Andregard and Jangland (2015), NPs brought continuity to clinical work that junior doctors could not because of their temporary appointment in the department. Because of the requirement that they rotate, junior doctors are often likely to be inexperienced in the new clinical area, and patients may benefit more from the expertise and skills of NPs (Keane, Tyrrell, & O'Keefe, 2008). The majority of the health professional interviewed for this study were willing to work with the NP. The NPs in this study had been working as senior nurses in the specialised areas in the same hospital for many years, and therefore were well known to most members of the health care team. The more a health professional team is accepting of an NP, the greater the ability of the NP to undertake their full scope of practice (DiCenso et al., 2010). Research has found that where the NP was accepted by a team, communication was improved both inside and outside the team (Burgess & Purkis, 2010; Kilpatrick et al., 2013; van Soeren et al., 2011).

The role of NP requires superior interpersonal skills and the ability for high level communication skills in order to cooperate effectively on the team. There is a lot of

research that has found that acceptance of a NP in a team led to improved communication within and outside the team (Kilpatrick, Lavoie-Tremblay, Ritchie, Lamothe, Doran. 2012; Soeren, et al 2011; Burgess, Purkis. 2010). Effective communication by and with all three NPs was identified by most participants in this study. Nursing staff identified that they felt comfortable talking to the NP and asking for assistance. This was most likely due to the fact that the nurses recognise, in the NP, the traits of their ancestral group. Studies have reported that when a NP is successfully integrated into a team, the NP can act as a clinical leader who inspires and supports nurses in the clinical routine, improves cooperation and supports more evidence- based health care (Gerrish, Guillaume, Kirshbaum, McDonell, Tod, Nolan, 2010). This notion can be extended with some of the less experienced medical staff respondents in this study also describing their comfort with approaching the NP for assistance or advice.

This study found that some of the health professionals interviewed were uncertain of the role of the NP. Fang and Tung (2010) assigned this responsibility to the NPs themselves, saying that, in addition to the challenges faced by NPs as they sought to establish themselves in their new roles, new NPs needed to take responsibility for informing the team about their role at the hospital. Concurring with Fang and Tung (2010), Masso and Thompson (2014) suggested that this would increase the visibility of NPs as credible and respected members of the health care team.

A number of NPs reported strong hospital medical support, with one NP reporting that referrals from GPs were starting to increase and others observed that support for their roles from medical staff in general was steadily growing as they came to understand the NP position (Chiarella et al 2008). Chiarella et al's (2008) study also identified that it took NPs between six months and three years to feel comfortable and established in their NP role. Whilst none of the NPs in this study had been in their post for three years, all were greater than six months, and indicated that they felt their position fitted in to the existing health service. Some doctors felt relieved of some of their duties by the NP, but the biggest advantage was that NP focused on duties that had not previously been performed satisfactorily (Martin et al. 2008). Similar to responses by participants in this study regarding NP2 and NP3, other researchers reported that some doctors felt

responsible for supervising the NP and thought it took so much time that their workload was unchanged (Fletcher et al, 2007; Martin, et al., 2008).

Inconsistent with the reports of participants in this thesis where the nurse respondents were generally supportive of the NPs, a review of the international literature depicts the variety of involvement experiences of NP Services, including resistance by certain professional groups (Sullivan-Bentz et al., 2010). Miller et al. (2005) reported that some nurses were unsupportive and resentful of the NP position making it difficult for the NP to do their job. In 2008, when data for this study were collected, some of the nursing and medical respondents in this study were opposed to the implementation of the NP position. The second national census (Australia) reported that over half of the NP participants identified a “lack of organisational support” ($n = 105, 52.2\%$), and, more specifically, that a lack of support from within the nursing profession ($n = 117, 58.2\%$) was “limiting” or “extremely limiting” to their practice (Middleton et al., 2011, p. 12). Miller et al. (2005) also reported that some nurses were unsupportive and resentful of the NP position, making it difficult for NPs to do their jobs. Consistent with the experiences of NP2 and NP3 in this study, Sullivan-Bentz et al. (2010) reported that it was more often medical respondents who displayed limited support for NP Services. On occasion, there was an outright refusal by medical professionals to accept that NPs had the requisite skills, knowledge and experience to take on the autonomous role of NP (Chiarella, Thoms, Lau, & McInnes, 2008b; Lumby, Robins, & Woods, 2010; MacLellan et al., 2015b). This resentment seems to have changed slowly over time, with MacLellan et al. (2015a) reporting a growing acceptance of the NP role in the medical profession. One of the reasons identified by the authors for supporting successful integration of NP Services was that the NPs had been working within the health service for many years, albeit in a different role, and they knew the system and the staff working in it.

Research objective 5: To examine patients’ experiences of the NP Service. The key findings in this study associated with this objective were patient experience, work

standards and confusion over the NP role. These findings will now be discussed using contemporary literature.

The patients interviewed for this study indicated an overwhelmingly positive response regarding NPs, an unexpected reduction in waiting times and confidence in the care that was provided to them. Contemporary literature supports these findings (Agosta, 2009; Allnutt et al., 2010; Arbon et al., 2009; DiCenso et al., 2010; Dinh et al., 2012; Gagan & Maybee, 2011; Halcomb, Caldwell, Salamonson, & Davidson, 2011; Jennings et al., 2015). Studies that have sought information from patients about their experiences of the NP Services have generally focused on patient satisfaction, especially associated with reduced waiting times in the ED (Colligan et al., 2011; Considine & Fielding, 2010; Dinh et al., 2012; Fry, 2011; Jennings et al., 2008; Li, Westbrook, Callen, Georgiou & Braithwaite, 2013; Steiner et al., 2009; van der Linden, Reijnen, & de Vos, 2010).

The patient and parent participants in this study commented on the high standard of NP work practice and they espoused the ability of the NP to facilitate and enhance communication and collaboration within and between specialist consultants, other nurses and allied health professionals. In addition, patients and parents described the very positive contribution the NP made with respect to communicating with them, letting them know what was happening and “translating” what the doctors said about their care plan. Numerous studies have indicated that patients value access to skilled care and that NP Services are one model designed to improve access for patients (Edwards, Finlayson, Courtney, Graves, Gibb, & Parker, 2013; Fry, 2009; Jennings et al., 2015; MacLellan et al., 2015b). Through their integral (hybrid) position within a health care team, NPs have been shown to facilitate an integrated continuity of care through the collaborative development of referral pathways, clinical practice guidelines and multidisciplinary protocols (Gibb, Edwards, & Gardner, 2015).

With the introduction of this new mode of care, it was important that the public had a clear understanding of the various nursing roles available to them (Gardner et al., 2008). However, patient and parent participants in this study expressed little knowledge or understanding of what an NP was or the services they could provide generally. Previous research indicates that NPs believe that a lack of public knowledge and understanding about their role is the most significant barrier preventing their effective practice (Hain &

Fleck, 2014). A study undertaken in 2010 found that there appeared to be consumer awareness of the existence of NP Services, with a majority of 115 patient respondents ($n = 75$; 65%) having heard previously of NPs (Allnutt et al., 2010). Thirty per cent ($n = 34$ patients) were unable to describe the roles or functions of NPs, while 45% of patients interviewed ($n = 51$) seemed unaware that they had been treated by an NP (Allnutt et al. 2010). It is not clear whether patients can differentiate between the role of an NP and that of an RN because there have been no specific studies published on this matter.

Although patients in this study couldn't distinguish between the various roles of the health professions, surprisingly they could comment on differentiated communication and approachability styles displayed by NPs when compared with others—in particular, medical staff. A multidisciplinary team approach can make an important contribution to safe patient care. Organisations that include NPs on their teams have been shown to maintain or improve patient quality of care (Kilpatrick, Jabbour, & Fortin, 2016; Newhouse et al., 2011; Stanley, Worrall-Carter, Rahman, McEvedy, & Langham, 2015).

Based on the responses of many patients and parents, the ability of NPs to engage with the patient/parent and include them in the care planning process was a particular strength identified in relation to each of the NPs in this study. Patients can feel intimidated and confused by the complexities of the health care system, which, in turn, can act as a barrier to effective patient engagement in their own care (Deshefy-Longhi, Swartz, & Grey, 2008; NSW Department of Health, 2015; Thrasher & Purc-Stephenson, 2008). Patient engagement can be enhanced by recognising that patients bring their own expertise to the table. If they are supported and recognised for this and given an opportunity to participate actively in the decisions related to their care, they are more likely to engage in their own health management (Deshefy-Longhi, et al., 2008; NSW Department of Health, 2015; Thrasher & Purc-Stephenson, 2008) and, in turn, positively affect their experiences of the health system.

5.3 Strengths and Limitations of this Study

This section provides information about the strengths and limitations of this study. Rigorous quality measures were applied to establish validity of the findings of this intrinsic case study and these were outlined in the methodology chapter (Chapter 3, Section 3.6). These included the adherence to the research protocol, regular discussion of findings with supervisors and data triangulation. An important strength of this study was the method used. An intrinsic case study allowed a detailed exploration of three discreet NP Services (embedded units) to gain a deep understanding of the early implementation of the NP Services.

The similarity between this study and the research literature that has been published since 2008 strengthened the validity of some of the findings of this thesis. One important feature of this study, in contrast with others (Considine & Fielding, 2010; Desborough, 2012; Driscoll et al., 2005; Gardner et al., 2016b; Jennings, Gardner, & O'Reilly, 2014; Lowe et al., 2013), was the inclusion of perceptions and experiences expressed by three stakeholder groups: NPs, associated health professionals and the patients associated with the three NP Services. Therefore, this study gave a voice to the health professionals and patients who interacted and experienced the NP Service, as well as to the NPs. From the direct observation and interview components of the study, subtleties and complexities associated with the implementation of the NP Service were identified and could be followed up to obtain a comprehensive picture and clarify any misunderstandings on the part of the candidate.

Apart from the pragmatics of the candidate being constrained by the AUSPRAC time scheduling, the pre-set interview questions and the pre-set medical record audit tool, the limitations of this thesis are also linked to its methods, where the most common concern relates to methodological rigour, researcher subjectivity and external validity. A potential limitation in this study was the large volume of qualitative and quantitative data collected, and the consequential risk of missing integral links in the data and between data sources of participant observation and interviews. This was addressed through methodical recoding of data and the use of dedicated software to assist in data management. The small number of NP Services that were in existence when the data was collected for this study meant there was a potential for the loss of anonymity and

confidentiality of the participants when presenting findings. This was addressed by assigning codes to all respondents and de-identifying health facilities and services.

The candidates' presence during data gathering, which is often unavoidable in qualitative research, was also a potential limitation in that it was possible that researcher subjectivity could introduce bias, particularly in a study such as this where there was a sole investigator collecting data (Abercrombie et al., 2006). This was addressed by the candidate following a systematic approach during data collecting and analysis (Flyvbjerg 2011).

With case study design, the quality of the data collection and the rigour of the findings is heavily dependent on the individual researchers' skills. The strengths and weaknesses of this study arose from the researcher's roles as both investigator and participant observer. Case study method uses the researcher as a tool and, as such, involves a description of the researcher's interpretation of events. However, this dual role for the researcher undertaking case study analysis can influence the results of the case being investigated through subjective bias.

Because of the purposeful sampling of the NP Service in NSW (with three NP Services as embedded sub-units), the findings may not be generalised or typical of NP Service in Australia, although the findings could be transferable to similar NP models of care in Australia (Flyvbjerg 2011). Hence, there is no way of knowing to what extent the NP Service (including the three embedded units) investigated in this research would produce similar or different findings if the research were to be conducted on other NP Services in NSW or Australia. The data collection from the observations, interviews and medical record audit are specific to that time and place and may not be transferrable to another time period.

In this study, there were several unique and noteworthy factors relating to the candidate. The fact that the PhD candidate was also a nurse could also have influenced the way in which the all participants contributed to the study, both positively and negatively: positively through the familiarity with the context of the work environments, and the ability to interpret nursing practice and interact on a professional level; and negatively through being an 'an outsider'. The candidate's professional background may have contributed to a level of assumed knowledge and understanding between the candidate and the health care participants. This familiarity with the context may have influenced

how the candidate interacted with patients and how she was perceived as belonging to the environment, which may have caused a potential for bias. The assumed knowledge and understanding between the candidate and the health care participants may have been an advantage in terms of encouraging participant responses, but it may also have caused a bias in that participants may not have explored issues in as much depth because of the assumed knowledge and assumed professional alignment.

Having acknowledged the strengths and limitations of this thesis, recommendations derived from the findings are presented in the next section.

5.4 Recommendations

To establish a greater understanding and acceptance of NP extended roles, further work is required within health services if NPs are to work to the full capacity of their legislatively defined scope of practice. The significant contribution of this study to existing knowledge lies in the provision of rigorous evidence on the early implementation of the NP Service.

The findings of this study have highlighted several implications for nursing as a profession, health service planning and patient care. It behoves health service administrators to give careful consideration to the future development of NP Services, particularly in geographical regions where it is hard to attract and/or retain medical and nursing staff to deliver consistent services. The development of NP Services, such as those described in Hospitals 1 and 2, may also assist organisations to manage better their workflow in EDs, particularly in city centres or at times of high demand. Hospital 3 was the only hospital with a succession plan for the employment of transition NPs when this study took place in 2008. Despite the growth in the numbers of NPs and NP Services since the data were collected for this study, the literature published since that time still demonstrates confusion and ambiguity over the NP title and role, delays in the endorsement of localised discipline-specific NP practice guidelines and limited evidence-based research studies to support the sustainability of services (Gardner et al., 2016b; MacLellan et al., 2015b). These gaps give rise to several recommendations for the workplace, policy makers and future research proposals.

5.4.1 For the Workplace

1. There is an opportunity for workplaces to take a lead role in providing better communication with patients about NP Services, the roles of NPs and how NP Services integrate into the existing (more readily recognised) services and align with health care providers, so that patients can make informed decisions about who they work with regarding their health care needs.
2. Health services need to generate short- and long-term workforce strategies to address the unavailability of the NP Service due to NP leave. This will help to address the issue of the continuity of the NP Services within health services. NP Services may lose viability if they simply cease operating during periods of NP leave or if the NPs are covered by medical practitioners.

5.4.2 For Policy

1. Policy makers and individual health bodies need to ensure NP representation on committees dealing with health care services and delivery because NPs are currently underrepresented in decisions involving their profession. There is not enough yet understood about the value of adding the NP role to the multidisciplinary health care team and service redesign.
2. Establishment of an evaluation framework for policy makers, service planners and service managers to gain valuable information about the productivity and effectiveness of the NP Services in meeting the needs of patients would enable them to make informed decisions regarding the funding and growth of services in the future.

5.4.3 Future Research

1. Research trials into the NP Services are needed to validate the added value of NP Services, specifically targeting the quality of care, productivity and the cost-benefits to the health care system.

2. Research trials into the strengths and capabilities of the NP Service are needed to sustain the NP Service. Although the findings of this study are specific to the three NP Services investigated, little is known about the possible strengths and capacities of NP Services. Intrinsic case study design does not lend itself to the generalisability afforded by other research methods as its purpose is to discover the depth and breadth of the single case in focus. The NP Services investigated in this study may not be representative of other NP Services but were examined because, in all their particularity and ordinariness, the NP Services themselves were worthy of investigation and interest.

5.5 Conclusion

The NP Service is playing an increasingly important role in the delivery of modern health care to all Australians (Gardner, et al., 2016b, Middleton, et al 2016). Since its inception at the beginning of the decade NP Services have evolved across Australia, albeit at different rates and in different ways. Evolution is not a static process; it is a state of continual change as species' seek to survive in a changing world. This thesis has focussed on how a new type of service, namely the NP Service, fitted in to existing health care services, and how the people that interacted with these services perceived them. At the time when data was collected (November, 2008), NSW was in the relatively early stages of implementing NP Services, and all three NPs interviewed for this thesis described varying degrees of continued difficulty in exercising their full scope of practice, despite their advancement from CNC to NP.

This study was one of the first studies in Australia to comprehensively investigate the evolution of three NP Service in NSW. This thesis utilised an intrinsic case study using mixed methods research to investigate the evolution of the NP Service using three NSW NP Services (embedded sub-units) within the existing health services by examining the perspectives of the NPs, their medical and nursing colleagues, and the experiences of patients who were connected with the services.

The aim of this research was to gain a rich understanding of the early implementation of the NSW NP Services in 2008. This study employed an intrinsic case study design to explore three embedded sub-units, those being three NP Services in NSW, to gain this understanding. NPs were required to employ adaptive strategies to support their assimilation into the existing services and to promote sustainability of the service over time. Indeed, from a Darwinian perspective, sustainability can only be assured when the species possesses the capacity to adapt to its habitat. Based on the findings of this study, the most important things that the NP Service now needs to adapt to are fluctuating health care delivery requirements, unpredictability in the formation of multidisciplinary teams and variations in clinical practice if they are to be sustainable. Barriers to the implementation of the NP Service, such as traditional hierarchical, overlapping boundaries with other health professionals and invisibility of the NP, all of which were found in 2008, are also present today..

In summary, this intrinsic case study has added to the existing body of historical knowledge by generating an account of the early implementation and evolution of the NP Service in NSW, as well as identifying ongoing challenges for the NP Service. Whether the NP Service gains further momentum in Australia will depend on whether key stakeholders, such as other health care providers, hospital managers and patients, adopt and embrace the NP roles. Though this study has provided some answers to the proposed research objectives, there is scope for further investigations into the evolution of NP Services in NSW and Australia.

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Appendices

Appendix 1: A Timeline of the Significant Events in the Development and Implementation of the NP Service in Australia 1990 - 2016

Date	Key Event
August 1990	New South Wales Nurses (NSW) Association Annual Conference. NSW Health Minister Peter Collins (Liberal Party) (Mar 1988-June 1991) indicates in-principle support for independent nursing practice.
October 1990	First NP Committee convened in NSW
September 1991	Key events during Nurse Practitioner Stage 1 NSW Department of Health Taskforce – The Independent Nurse Practitioner Task Force established by Judith Meppem, NSW Chief Nursing Officer.
January 1992	Establishment of Nurse Practitioner Working Party – representative from nursing organisations.
June 1992	Release of Nurse Practitioners in NSW: The role and function of Nurse Practitioners in NSW (The Discussion Paper).
March 1993	Key events during Nurse Practitioner Stage 2 Establishment of Stage 2 Nurse Practitioner Working Party – Multidisciplinary representation chaired by independent consultant to consider and further develop issues from the Discussion Paper.
June 30 1993	Nurse Practitioner Stage 2, Vol. 1 & 11 (The Review) presented to Ron Phillips, NSW Health Minister.
September 1993	The Review endorsed by NSW Health Minister and released for public circulation.
November 1993	Key events during Nurse Practitioner Stage 3 Establishment of Stage 3 Nurse Practitioner Steering Committee – Multidisciplinary representation.
1993/1994	Management structure of Rural Health Services being reorganised. Six (6) non-metropolitan regions expanded into 23 District Health Services.
January 1994	Expression of Interest for Nurse Practitioner Pilot Research Projects circulated in the national, state and local press and key nursing and medical publications.
August 1994	Overview of pilot projects circulated by Judith Meppem, NSW Chief Nursing Officer.
September 1994	Nurse Practitioner Pilot Projects commence.
March 1995	NSW State Government elections and change in Government. Labor Party elected to Office.
June 1995	23 District Health Services were reduced to 8 Rural Area Health Services.
December 1995	The Nurse Practitioner Project Stage 3: Final Report of the Steering Committee (The Final Report) presented to Andrew Refshauge, NSW Health Minister.
March 1996	Commonwealth Government elections and change in Government. Liberal Party elected to Office.
April 1996	Stage 3 Final Report approved and released for circulation by Andrew Refshauge, NSW Health Minister.
February 1997	Implementation of Nurse Practitioners in NSW Andrew Refshauge, NSW Minister for Health establishes Implementation Process for NPs in NSW.
August 1998	NSW NP Framework circulated
November 2 1998	Nurses Amendment (Nurse Practitioner) Act 1998 assented to by NSW Parliament.
February 1999	NP Accreditation Committee formed.
October 1999	Nurses Amendment (Nurse Practitioner) Act 1998 – Proclamation of Act.
November 1999	NP Authorisation Process finalised by NSW Nurses Registration Board
February 2000	1st meeting of NSW Nurse Practitioner Steering Committee.
December 2000	1st Nurse Practitioners authorised by the Nurses' Registration Board of NSW.
December 2000	Craig Knowles, NSW Health Minister announces authorisation of Jane O'Connell & Susanne Denison as first NPs in NSW (and Australia).
May 2001	The NSW Health Minister announces that Olwyn Johnson named as first NP to take up a position in NSW.
September 2002	Roll out of specialist NPs into Metropolitan Sydney announced by Craig Knowles, NSW Minister for Health.
March 2003	Australian Nurse Practitioner's Association (ANPA) formally established. President: Jane O'Connell, Vice President: Amal Helou, Treasurer: Rochelle Firth, Secretary: Lorna Scott, Committee Members: James McVeigh, Cheryl Davidson.
July 2004	Restructuring of the State's health administration including the amalgamation of 17 Area Health Services into 8 AHSs announced.
December 2004	ANPA release a position statement on Scopes of Practice

Date	Key Event
June 2005	State Chapters of ANPA formed (58 authorised NP NSW=58 WA=21, SA = 10 ACT = 2, Vic = 4).
October 2005	Inaugural conference of ANPA held in Canberra
November 2005	Australian Nursing and Midwifery Council endorse NP definition & competency standards for individual state registration authorities
February 2006	\$5.5 million funding for 60 new NP positions to increase the number of NPs in NSW public hospitals announced by NSW Health Minister John Hatzistergos
February 2006	National Nursing and Nursing education Taskforce (N3ET) release Pathways to Progress Nurse Practitioners report
March 2006	N3ET release paper on analysis of the language of specialisation and advanced nursing and midwifery practice
March 2006	Amendment to the Poisons and Therapeutic Goods Regulation 2002, the Poisons and Therapeutic Goods Amendment (Health Practitioners) Regulation 2006 allows NPs possess, use, supply or prescribe drugs of addiction (Schedule 8).
April 2006	Health Minister announces the new amendments to the Poisons and Therapeutic Goods Act
July 2006	NSW Minister for Health John Hatzistergos announces there are 102 NPs across NSW (Transitional NPs and authorised NPs)
August 2006	Launch of ANPA website in partnership with the College of Nursing
September 2007	AUSPRAC commenced (3 yr ARC funded Australian NP Research project)
	Final NSW report released on the evaluation of the nurse/midwife practitioner and clinical Nurse/ Midwife consultancy roles
November 24 2007	Commonwealth Government elections and change in Government. Labor Party elected to Office
December 2007	NP role legislated, and the NP title protected in all Australian states.
April 2008	Australian College of Nurse Practitioners first media release
June 2008	Appointment of first National chief Nursing & Midwifery Officer, Rosemary Bryant
October 2008	Final submission from ANPA (ACNP) to NHHRC for expanding NP Services in Australia
December 2008	Approximately 300 registered NPs working in Australia.
January 2009	Australian Nurse Practitioners Association endorsed the forming of a company called the Australian College of Nurse Practitioners (Ltd)
May 2009	Federal Health Minister announced that the 2009-2010 Federal Budget would allocate \$59.7 million over 4 years to provide NPs access to the MBS and PBS.
June 2009	Legislation introduced to Commonwealth Parliament to allow NPs and midwives access MBS and PBS.
October 2009	Formation of the Australian College of Nurse Practitioners
December 2009	129 NPs & 1 midwife practitioner authorised in NSW.
January 2010	Determined that all applications under pathway 2, for authorisation as NP must complete Masters degree specific to the NP's clinical practice context.
March 2010	Federal Government announced that Legislation passed to give NPs and midwives access to MBS and PBS reimbursements.
July 2010	National registration, education and standard requirements for NP practice introduced.
October 2010	Establishment of 1 st Government-sponsored Nurse Led Clinic
November 2010	MBS and PBS reforms announced for NP by Nicola Roxon MP
April 2013	AHPRA publishes NP numbers (n=843) ACT=30, NSW=2011, NT=12, Qld = 229, SA=7, Tas = 20, Vic = 124, WA = 145 N/A = 2
October 2013	AHPRA releases new NP standards of Practice (supersede ANMAC 2006 standards for NPs)
December 2013	AHPRA report 1004 NP endorsed in Australia
February 2014	Release of the Journal for Nurse Practitioners (official journal of ACNP)
November 2014	NSW Health publishes a Comprehensive Literature Review (Masso & Thompson)
December 2014	CLLEVER study (CLinical LEarning & GoVERNance Project) final report published
August 2015	ANMAC released update version Nurse Practitioner Accreditation Standards 2015
August 2016	Centre for Research and Action in Public Health (CeRAPH) released National Evaluation of Aged Care NPs

Adapted from the Australia College Nurse Practitioners History website

Appendix 2: Codes for Participants in this Study

NP (n=3)	Hospital (n=3)	Work Area	Allied Health Professional (n=15)	Patients Interview (n=15) Documentation (n=30)
1	1	Mental Health in Emergency	HP1 – Clerical Assistant HP2 – MD Emergency HP3 – Triage Nurse HP4 – Emergency Senior Nurse HP5 – Triage Nurse	PT1 – PT5: Interview & Documentation PT6 – PT10: Documentation
2	2	Fast Track in Emergency	HP6 – CNS HP7 – Senior Staff Specialist HP8 – Fast Track Emergency Nurse HP9 – Triage Nurse HP10 – Fast Track GP	PT11 – PT15: Interview & Documentation PT16 – PT20: Documentation
3	3	Neonatal Intensive Care unit	HP11 – Consultant Neonatologist HP12 – Fellow Medical Officer HP13 – Clinical Midwife HP14 – Senior Nurse HP15 – CNS	PT21 – PT25: Interview & Documentation PT26 – PT30: Documentation PT = Parents

Appendix 3a: Participant Consent Form – Nurse Practitioner



Project Title: Reforming healthcare: Nurse Practitioners and workforce re-design – Case Study – Nurse Practitioner

PARTICIPANT CONSENT FORM

I, [name]

of

.....[address]

have read and understood the Information for Participants on the above named research study and understand that I may discuss the study with Professor Glenn Gardner or the project-coordinator listed in the Participant Information sheet.

I have been made aware of the procedures involved in the study, including any known or expected inconvenience and risks as far as they are currently known by the researchers. I understand that the interview will be audio-taped, and I agree to this.

I freely choose to participate in this study and understand that I can withdraw at any time.

I also understand that the research study is strictly confidential.

I hereby agree to participate in this research study.

NAME:

SIGNATURE:

DATE:

NAME OF WITNESS:

SIGNATURE OF WITNESS:

| Participant Consent Form, MASTER Version Two, August 2008
Participant Consent Form, RPAH Version One, October 2008

Appendix 3b: Participant Consent Form – Health Professional



Project Title: Reforming healthcare: Nurse Practitioners and workforce re-design – Case Study – Health Professional

PARTICIPANT CONSENT FORM

I, [name]

of

.....[address]

have read and understood the Information for Participants on the above named research study and understand that I may discuss the study with Professor Glenn Gardner or the project-coordinator listed in the Participant Information sheet.

I have been made aware of the procedures involved in the study, including any known or expected inconvenience and risks as far as they are currently known by the researchers. I understand that the interview will be audio-taped, and I consent to this.

I freely choose to participate in this study and understand that I can withdraw at any time.

I also understand that the research study is strictly confidential.

I hereby agree to participate in this research study.

NAME:

SIGNATURE:

DATE:

NAME OF WITNESS:

SIGNATURE OF WITNESS:

Participant Consent Form, MASTER Version Two, August 2008
Participant Consent Form, RPAH Version One, October 2008

Appendix 3c: Participant Consent Form – Patient /Guardian



**Project Title: Reforming healthcare: Nurse Practitioners and workforce re-design – Case Study –
PARENT/GUARDIAN CONSENT FORM**

I, [name of parent/guardian]
of[address],
parent/guardian of [name of child]

have read and understood the Information for Parent/Guardian on the above named research study and understand that I may discuss the study with Professor Glenn Gardner or the project-coordinator listed in the Participant Information sheet.

I have been made aware of the procedures involved in the study, including any known or expected inconvenience and risks as far as they are currently known by the researchers. I understand that the interview will be audio-taped, and I agree to this.

I understand that participation in this study will allow the researchers to have access to my child's medical record, and I agree to this.

I freely choose to participate in this study and understand that I can withdraw at any time.

I also understand that the research study is strictly confidential. I hereby agree to participate in this research study.

NAME:

SIGNATURE:

DATE:

NAME OF WITNESS:

SIGNATURE OF WITNESS:

Participant Consent Form, MASTER Version Two, August 2008
Participant Consent Form, RPAH Version One, October 2008

Appendix 4a: Participant Information Letter – Nurse Practitioner

Australian Nurse Practitioner

QUT

AUSPRAC
REFORMING HEALTHCARE



Version 3 Dated October 2008

Site: Royal Prince Alfred Hospital

Full Project Title: Reforming healthcare: Nurse Practitioners and workforce re-design – Case Study Component – Nurse Practitioner

Principal Researchers:

Introduction

The nurse practitioner is an emerging health care role that has the potential to improve access to timely health care for under serviced populations. But little is known about this new level of health care. In this national study we will use an innovative research approach to study the profile of Australian nurse practitioners, the nurse practitioner's work patterns and service processes, the impact of this service on the health care team and nurse practitioner related patient outcomes. The findings from this research will contribute to future health workforce planning and will develop new ways to study emerging healthcare services. This is a three year study that has three phases. Phase One is a national survey of nurse practitioners; Phase Two is an in-depth investigation of the practice and the service profile of a sample of nurse practitioners. Phase Three is a repeat of the national nurse practitioner survey and also an investigation of patient outcomes of NP Service.

This phase of the study will investigate the practice and the service profile of a sample of nurse practitioners including the impact of this service on the multidisciplinary team.

The research team requests your involvement because you are an authorized nurse practitioner and therefore qualify to contribute to the outcomes of this component of the research.

Study Procedures

Your participation in this project is voluntary and you are being approached to consent to this component because you indicated on the questionnaire that you were willing to be contacted to receive information for involvement in this Phase Two of the study.

If you do agree to participate, you can withdraw at any time during the project without comment or penalty. Your decision to participate will in no way impact upon your current or future relationship with your employer or the research team.

Your participation will involve facilitating an in-depth investigation of your NP Service. This will include:

- Participation in an interview with a member of the research team about your current role and the features and processes of your service. The interview will be held in a setting and at a time convenient for you, it will be audio recorded and will last for approximately 30 minutes.
- You will also be asked to give consent for a member of the research team to observe the environment of your service to collect field notes on the clinical, social and professional interactions that occur in the course of a work day.
- We will also be seeking your assistance in recruiting a sample of your patients for participation in the study. This will involve handing out packages containing the study information to your patients asking them to contact us if they wish to participate. Those patients who consent to participate will be interviewed about their experience of nurse practitioner service. The patient interview is included to gain an understanding of the impact and quality of this role from the perspective of the consumer.

Benefits

There may be some benefit to you from participation in this project. The findings from this research will provide an evidence base for nurse practitioners to use for role development, definition of service models and research information about patients' experience and satisfaction related to nurse practitioner service.

Risks

There are no risks beyond normal day-to-day living associated with your participation in this project.

Costs

Participation in this study will not cost you anything, nor will you be paid.

Confidentiality

Information obtained from this study will be used in a research report and publications. Your identity and the identity of your employer, workplace, patients and colleagues will not be disclosed in any documents, reports or publications during and after completion of this research. All comments and responses will be treated confidentially. The names of individual people are not required.

Consent to Participate

If you agree to participate we will ask you to sign a written consent form (enclosed) to confirm your agreement. This information sheet and a signed copy of the consent form is for you to keep.

Questions / further information about the project

Please contact the researcher team members named above to have any questions answered or if you require further information about the project.

Concerns / complaints regarding the conduct of the project

This study has been approved by the Ethics Review Committee (RPAH Zone) of the Sydney South West Area Health Service. Any person with concerns or complaints about the conduct of this study should contact the Secretary on XXXXX and quote Protocol No XXXXXXXXX

Appendix 4b: Participant Information Letter – Health Professional



Version 3 Dated October 2008

Site: Royal Prince Alfred Hospital

Full Project Title: Reforming healthcare: Nurse Practitioners and workforce re-design – Case Study Component – Health Professional

Principal Researchers:

Introduction

The nurse practitioner is an emerging health care role that has the potential to improve access to timely health care for under serviced populations. But little is known about this new level of health care. In this national study we will use an innovative research approach to study the profile of Australian nurse practitioners, the nurse practitioner's work patterns and service processes, the impact of this service on the health care team, and nurse practitioner related health outcomes. The findings from this research will contribute to future health workforce planning and will develop new ways to study nurse practitioner and other healthcare services. This is a three year study that has three phases.

This phase of the study will investigate the practice and the service profile of a sample of nurse practitioners including the intersection and collateral impact of the nurse practitioner with established service processes and the multidisciplinary team.

The research team requests your involvement because you are involved in a health service area that includes the role of a nurse practitioner and therefore qualify to contribute to the outcomes of this component of the research.

Study Procedures

Your participation in this project is voluntary. If you do agree to be involved you can withdraw from participation at any time during the project without comment or penalty. Your decision to participate will in no way impact upon your current or future relationship with your employer or colleagues.

Your participation will involve an interview with a member of the research team about your experience in working with a health service that includes the nurse practitioner role. The interview will be held in a setting convenient for you, it will be audio recorded and will last for approximately 30 minutes.

Benefits

There may be some benefit to you from participation in this project. The findings from this research will provide an evidence base to inform future planning for health service and the role of the nurse practitioner.

Risks

There are no risks beyond normal day-to-day living associated with your participation in this project.

Costs

Participation in this study will not cost you anything, nor will you be paid.

Confidentiality

Information obtained from this study will be used in a research report and publications. Your identity and the identity of your employer, workplace, patients and colleagues will not be disclosed in any documents, reports or publications during and after completion of this research. All comments and responses will be treated confidentially. The names of individual people are not required.

Consent to Participate

If you agree to participate we will ask you to sign a written consent form (enclosed) to confirm your agreement. This information sheet and a signed copy of the consent form is for you to keep.

Questions / further information about the project

Please contact the researcher team members named above to have any questions answered or if you require further information about the project.

Concerns / complaints regarding the conduct of the project

This study has been approved by the Ethics Review Committee (RPAH Zone) of the Sydney South West Area Health Service. Any person with concerns or complaints about the conduct of this study should contact the Secretary on XXXXXX and quote Protocol No XXXXXX.



Version 3 Dated October 2008

Site: Royal Prince Alfred Hospital

Full Project Title: Reforming healthcare: Nurse Practitioners and workforce re-design – Case Study
Component – Patient

Principal Researchers:

Introduction

You are invited to take part in a research study into the role of nurse practitioners in the healthcare system. The nurse practitioner (NP) is a new health care role that incorporates some tasks traditionally performed by doctors.

This phase of the study will investigate the patient experience of NP Service.

The research team requests your involvement because you have received health care from a nurse practitioner and therefore qualify to contribute to the outcomes of this research.

Study Procedures

Your participation in this project is voluntary. If you do agree to be involved, you can withdraw from participation at any time during the project without comment or penalty. Your decision to participate will in no way impact upon your current or future relationship with your nurse practitioner or with any aspect of your health care.

If you agree to participate, we ask you to return the consent form to us in the reply paid envelope provided, and a member of the research team will then contact you. Your participation will involve an interview with a member of the research team about your experience with the nurse practitioner involved in your care. The interview will be held in a place convenient for you, it will be audio recorded and will last for approximately 30 minutes. You will also be asked to give consent for a member of the research team to record data from your health care record that relates to your diagnosis and treatment.

Benefits

It is expected that this project will not directly benefit you. However, the information you supply may contribute to improving the quality of health service in your area.

Risks

There are no risks beyond normal day-to-day living associated with your participation in this project.

However if there are elements of your illness experience that have caused you physical or emotional difficulty, recalling these events in the course of the interview may result in emotional distress. If this occurs you will be provided with the contact details of a counsellor in your facility. Additionally, QUT provides for limited, free counseling for research participants of QUT projects, who may experience some distress as a result of their participation in the research. Should you wish to access this service please contact the Clinic Receptionist of the QUT Psychology Clinic on 07) 3864 4578. Please indicate to the receptionist that you are a research participant.

Costs

Participation in this study will not cost you anything, nor will you be paid.

Confidentiality

Information obtained from this study will be used in a research report and publications. All comments and responses will be treated confidentially. The names of individual people are not required and the nurse practitioner will not know whether you have participated in the study or not. In order to have an accurate record of your experience and insights we will record the interview to audio tape. The only people who will have access to this tape will be the researcher and the assistant who will transcribe the interview into a word file for analysis. The tape will then be stored in a locked cabinet and destroyed after seven years according to national guidelines.

On completion of this part of the research you may be asked to read and comment on a summary of the research findings that relate to patients' experience of nurse practitioner service.

Consent to Participate

If you agree to participate we ask you to sign the written consent form (enclosed) to confirm your agreement, and return it to us in the reply paid envelope provided. A member from the research team will then contact you. This information sheet and a signed copy of the consent form is for you to keep.

Questions/ further information about the project

Please contact the researcher team members named above to have any questions answered or if you require further information about the project.

Concerns / complaints regarding the conduct of the project

This study has been approved by the Ethics Review Committee (RPAH Zone) of the Sydney South West Area Health Service. Any person with concerns or complaints about the conduct of this study should contact the Secretary on XXXX and quote Protocol No XXXXXX.

Appendix 5a: Interview Schedule for Nurse Practitioners

Australian Nurse Practitioner Study



Interview Schedule for Case Study Participants Nurse Practitioners

This is a semi-structured interview that will be conducted within a framework of three themes. Namely:

- The organisation of care
- Team functioning
- Patient service

Within each of these themes we have supplied triggers to direct your questions. Please remain flexible and responsive in using these triggers without imposing limitations on the direction your interviewee's wants to take you within this framework.

The organisation of care

Questions for the nurse practitioner interview relating to perceptions and observations on the influence of their role on care delivery can include:

- *Continuity of care*
- *Patient-centred care.*
- Perceptions of issues related to *co-ordination of care*
- The most *significant challenges facing them in this role*
- Please also question about their estimates of *most common presentations* and their perception of *where the NP role has most impact*

Team functioning

We are looking to gain information on the impact of the NP role on the service team. How has it changed and *what is the NP's role within the team*. You may also what to pose questions around:

- *Collaboration issues*
- *Professional development/clinical development issues*
- *Source of, and destination of, referrals*

Patient service

We need to gain understanding of the impact of the NP role on patients. So we need information relating to:

- The focus of patient care in the NP service
- The approximate number of patients managed per day/week
- The NP's perceptions of *what patients want* from the service and what *the service wants* for patient outcomes

Appendix 5b: Interview Schedule for Health Professionals

Australian Nurse Practitioner Study



Interview Schedule for Case Study Participants *Health Professionals*

This is a semi-structured interview that will be conducted within a framework of three themes. Namely:

- The organisation of care
- Team functioning
- Patient service

Within each of these themes we have supplied triggers to direct your questions. Please remain flexible and responsive in using these triggers without imposing limitations on the direction your interviewee's wants to take you within this framework.

The organisation of care

We want to gain information on the ripple or collateral effect of the NP role on the rest of the service team. So we want to know about the other team members' and other disciplines' perceptions on how the NP role influences:

- *Continuity of care*
- *Patient-centred care*
- If the NP role has any influence on *fragmentation of care* (causing or removing)
- The *flow of work* in the service
- The *outcomes* of this health service

Team functioning

We are very keen to gain good information on how the NP impacts on team function. So introduce questions relating to NP influence on:

- *Team workloads*
- *Workloads of the individual* you are interviewing
- Their *understanding* of the NP role (have them describe the NP role)
- *Inter professional relationships*
- *Patterns of collaboration* if any

Patient service

We will have the NP's perceptions of the impact on patient service – so we need to find out if there is a common view. So team members need to be questioned around the topics of:

- *Patient centred care*
- *Co-ordination of care issues*
- Perception of where the *NP role has most impact on patient care*

Appendix 5c: Interview Schedule for Patients /Guardians

Australian Nurse Practitioner Study



Interview Schedule for Case Study Participants *Patient / Carer*

The patients perceptions of NP service is an important component of this study. The interviews will supply information about the value and focus of this new service.

This is a semi-structured interview that will be conducted within a framework of three themes. Namely:

- The organisation of care
- Team functioning
- Patient service

Within each of these themes we have supplied triggers to direct your questions. Please remain flexible and responsive in using these triggers without imposing limitations on the direction your interviewee's wants to take you within this framework.

The organisation of care

We want to know to what extent the patients' experience of health service is influenced by the addition of the NP. Whilst remaining responsive to the direction the patient takes you please structure your questioning around their experiences of:

- *Scheduling* of activities and care
- Issues related to *care co-ordination*, any *duplication*, and *changes* (better or worse) to access to service
- *How responsive the NP* is in providing service
- *Any fragmentation of care*
- Their level of *confidence in NP safety and quality of care* - ask for examples

Team functioning

What is the patient/carer's:

- *Understanding of the NP role*
- *Experience of duplication, mix of care providers*, ask for examples
- Their *perceptions of access and wait time for clinical service*

Patient service

We want information from the patients' experience in the service about:

- Their *satisfaction* with clinical care,
- The health and service *outcomes they want* and the *level of satisfaction* with *outcomes*
- Their *expectations of the NP service today and over the period of management/care/treatment*

Appendix 6: Medical Record Audit Tool

DATA ABSTRACTION TOOL

Consultation Details	
Identification Code	Time Period: ___/___/___ - ___/___/___
Presenting issue/s: as stated by the client _____ _____	
Diagnosis/Presenting issue:	
PATHOLOGY recommended by NP: details of specific tests	
Haematology:	Number of tests _____
Biochemistry:	Number of tests _____
Cytology:	Number of tests _____
Microbiology:	Number of tests _____
Serology:	Number of tests _____
Other:	Number of tests _____
X-RAYS recommended by NP:	
Plain []	Ultrasound [] Other []
Details: _____	
OTHER DIAGNOSIS TESTS recommended by NP: eg EEG, 24hr blood pressure monitoring	
Details: _____ _____ _____	
MEDICATION recommended by NP:	
Drug Group: eg. Antibiotics, Analgesics etc	Generic Drug Name: (do not include dosage)
_____	_____
_____	_____
_____	_____
THERAPEUTIC INTERVENTIONS:	
1 Procedural []	5 Monitoring []
2 Counselling, education & information []	6 Hospital admission for acute care []
3 Provision of, or assistance with, aids []	7 Social assistance []
4 Care regime []	8 Other _____ []
REFERRALS made by NP:	
GP []	GP []
Nurse Practitioner []	Nurse Practitioner []
Medical Specialist []	Medical Specialist []
Allied health professional []	Allied health professional []
Other health professional []	Other health professional []
Other agency []	Other agency []
REFERRALS received by NP	
GP []	GP []
Nurse Practitioner []	Nurse Practitioner []
Medical Specialist []	Medical Specialist []
Allied health professional []	Allied health professional []
Other health professional []	Other health professional []
Other agency []	Other agency []

Appendix 7a: A Typical Eight Hour Shift for NP1

Monday, 8am	NP1 was on the 'flight deck' for hand over with the ED SMO. The SMO asked NP1 to review two male patients who had been admitted overnight. NP1 made notes on relevant patients.
8.15am	Visit to the triage desk to enquire about any potential patients waiting to be seen. <i>En route</i> , NP1 passed through each clinical area to get an overview of the staff allocated to each clinical area of the ED area and the location of the patients NP1 was asked to review.
8.25am	Delivered the list of names of outpatient clinic patients for the day to the ED reception.
8.30am	Assessed the first male patient in ED, spending about one hour and 40 minutes with this patient trying to sort out financial and accommodation arrangements so the patient could be discharged. This assessment was interrupted by four pages from the ED reception. NP1 took phone calls from potential clinic patients and spoke to two care workers about recently discharged patients.
10.10am	Morning tea in consultation room catching up on emails.
10.30am	Assessed second male patient in ED, spending about 90 minutes discussing discharge options. This assessment was interrupted by three pages: two from hospital employees and one from ED reception. The two hospital pages were from mental health liaison personnel wanting advice. The ED reception call was from a patient rescheduling his 11am appointment for another day.
12md	Returned to the 'flight-desk' to check with SMO about any subsequent referrals since the AM visit. There were none.
12.05	Had lunch in consultation room. Caught up with emails and phone messages. There were three phone messages from patients who had been discharged from ED over the weekend and wanted to have an appointment at the outpatient's clinic.
12.45	NP1 returns to office to prepare for afternoon outpatient clinic. Patient notes are obtained. NP1 reviews patient notes from previous visit/s.
1pm	Paged from SMO. New patient brought in by police following a suicide attempt. NP1 spoke to the patient for about 25 minutes before the patient absconded. NP1 informed SMO and police.
1.35pm	Paged from Reception. Known patient had called, threatening self-harm. NP1 rang the patient, spoke for 20 mins and convinced the patient to come in to clinic in 1 hour.
2pm	Visited flight deck, reception and triage to see if any potential patients had arrived. There were no new patients. NP1 discussed patient outcomes with triage and reception staff.
2.30pm	NP1 went to consultation room and read the computerised medical notes of patients scheduled for the clinic as she waited for them to arrive. There were three patients scheduled to attend, two had been discharged the ED over the weekend.
3pm	2.30pm appointment did not turn up. 3pm appointment showed up. NP1 spoke to him for about 40 minutes about how to cope with anxiety. Another appointment was made for the following Monday. Patient scheduled for 3.30pm appointment was a no show.
3.45pm	NP1 returned to the flight-desk to inform SMO patient's non-attendance and to check on any subsequent referrals.
4pm	Clinic finished. NP1 completed patient notes, checked phone messages and checked diary for the following day. NP1 went home.

The 'flight deck' is the central location in emergency where staff congregate.

Appendix 7b: A Typical Eight Hour Shift for NP2

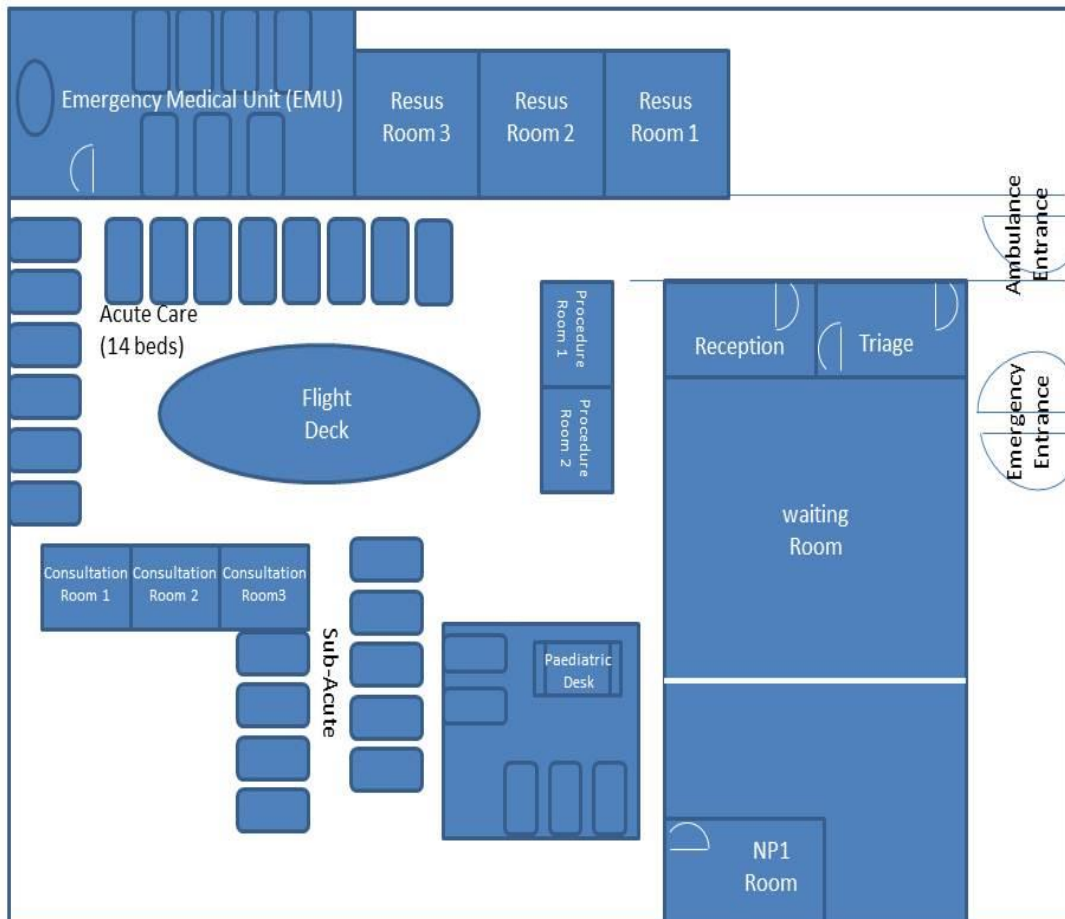
Saturday, 1pm	NP2 and GP got the handover from the morning shift GPs in the corridor of 'fast-track'. All eight consultation rooms were full. NP went to in-tray and read notes of patients waiting to be seen. NP identified four patients and placed these notes in a separate tray.
1.20pm	NP saw 27-year-old male with burns to his right calf. He had been drunk and fell into a fire five days previously. This was his first presentation. He could not walk and complained of severe pain in his right leg. It was thought he had full-thickness burns to three-quarters of his calf. NP3 took a history, gave pain relief, dressed the burns and consulted with the ED SMO about transferring patient to a burns unit at another hospital. NP2 rang the admitting doctor on duty at the receiving hospital, arranged the transfer, wrote the referral and arranged for an ambulance to transfer. While the patient waited in the consultation room for the ambulance to arrive, NP2 wrote up her documentation and moved on to the next patient.
2.30pm	NP saw a 28-year-old male that had been involved in a fight four nights earlier. He was unable to move his fingers and was noted to have a wound which the patient said was caused by the tooth of the man he fought. NP2 did a full assessment, swabbed the wound, ordered an X-ray, prescribed and gave IV pain relief, prescribed and gave IV antibiotics. NP2 read the X-ray and diagnosed tendonitis. NP2 referred the patient to the orthopaedic registrar who took the patient to theatre for urgent surgical drainage of the tendonitis. NP2 completed her documentation, and called the next patient.
3.15pm	NP2 saw a 60-year-old female referred to the ED by her GP as she had had a fall five days earlier. She fell forward after slipping on some oil in a car park. The GP found on the X-ray that the tip of the ulna had been snapped off. NP2 did a health assessment and referred the patient to the orthopaedic registrar who supported NP2's recommendation of a back slab and bandage. NP2 referred the patient back to GP for review in 5 days. NP2 applied the back slab to the right forearm and wrote a referral note to the GP. While NP2 was completing her documentation, the triage nurse asked NP2 to see a specific patient who was an employee of the hospital.
3.40pm	NP saw a 58-year-old male who had fallen off his motorbike and the passenger foot pedal had ripped through his right calf. According to the triage nurse, the patient had actually asked to see the NP in the triage process. He had a ten-centimetre L-shaped tear to his right upper calf and all the tissue inside the calf could be seen. The NP did a health assessment on him and phoned the orthopaedic registrar about management. The registrar agreed with NP2 that only suturing was required. NP2 prescribed and administered IV pain relief and IV antibiotics. The NP spent in excess of an hour suturing this wound. NP2 referred the patient back to his GP for further management and wrote a letter to the GP.
5.40pm	NP had dinner break in the staff area.
6.30pm	Emergency nurse unit manager (NUM) asked NP2 to help out with meal reliefs in the triage area for one hour. NP2 saw four trauma patients with minor sports injuries. NP2 took their histories, triaged them mostly as category four and then requested and arranged for them to go to X-ray.
7.30pm	NP2 returned to fast-track and saw a 52-year-old male with a piece of steel embedded in his right eye. NP2 did a health assessment and history and an eye examination. She anaesthetised the eye and made three attempts to remove the steel embedded near the pupil. The NP called in the eye registrar who took the man to theatre for removal of the foreign object from the eye. NP2 organised for the patient to be taken to theatre.

8.20pm	The triage nurse approached NP2 about seeing a 21 year old that was 18 weeks pregnant and vomiting with lower abdominal pain. This was her seventh emergency admission with vomiting in pregnancy. NP2 did an assessment, took a history, diagnosed moderate dehydration and ordered bloods for a full blood count and electrolytes. NP2 inserted an IV for hydration, prescribed medication for the vomiting, ordered an ultrasound and when the results of the ultrasound came through NP2 phoned the obstetrics and gynaecology (O&G) registrar. The O&G registrar came to emergency, spoke to NP2, reviewed the patient and agreed with NP2 that the baby was fine and the woman was fit for discharge. NP2 referred her to her GP for a follow-up, wrote the referral letter and also wrote up a script of Maxolon.
9pm	NP2 used the last 30 mins of her shift to write her work journal, answer her emails on the computer in fast-track and consult with the Nursing Unit Manager of Emergency over the plan of action for the coming shift. There were 13 people waiting to be seen in fast-track. NP2 left the area promptly at 9.30pm.

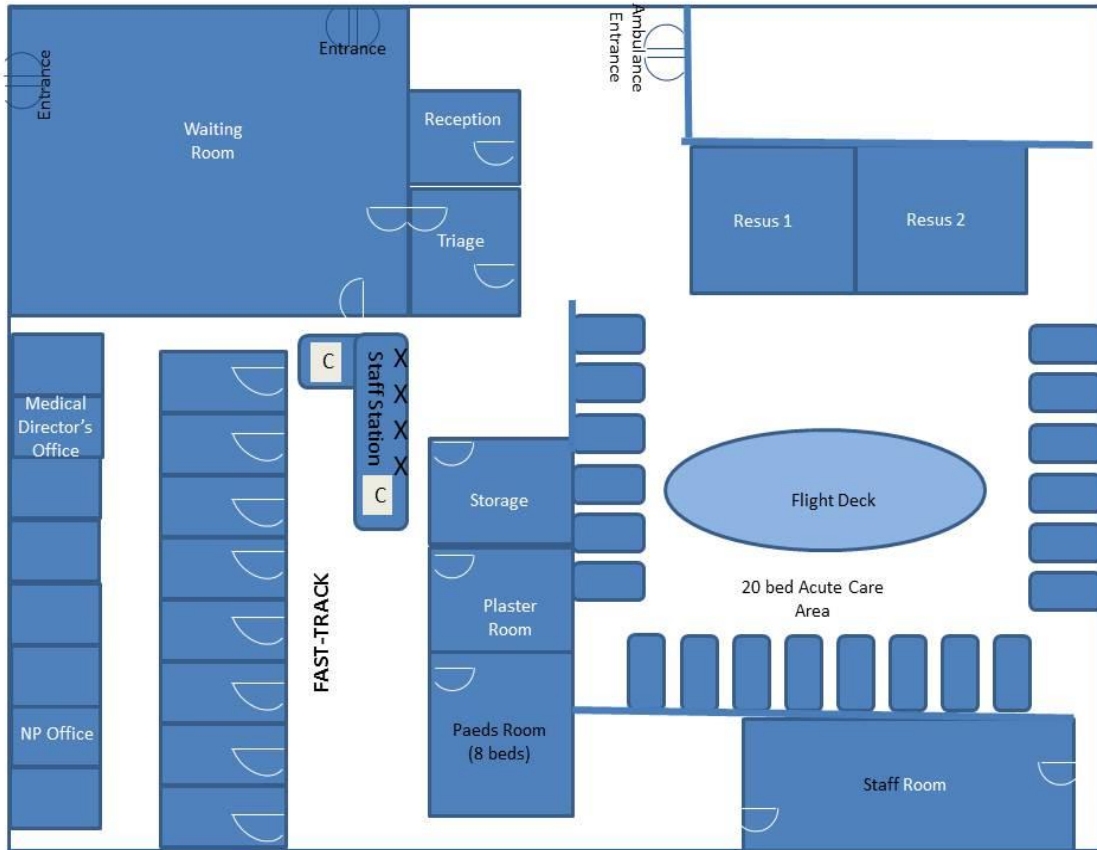
Appendix 7c: A Typical Eight Hour Shift for NP3

Monday,	NICU
8am	NP3, rostered as the senior 'registrar' on shift, received hand over from the night registrar. During handover the NP ordered blood tests and X-rays.
8.30am	The NP performed assessments on two babies and documented her findings. She ordered and arranged a brain scan on baby of two who had been fitting all night. NP3 consulted baby records until all relevant staff were ready for the grand round.
9am	NP3 conducted and controlled the ward round consisting of a neonatal director and other senior medical and nursing staff on day shift. She normally visited each individual cot in NICU and discussed what had happened in the previous 24 hours, what births were likely to result in an admission to NICU and the management of each baby in NICU. During the round, the NP prescribed the fluids and medications for the next 24 hours, spoke to the parents (if present) and informed the nurse looking after each baby what the management plan would be for the next 24 hours.
11am	NP had morning tea in the staff room.
11.20am	NP wrote up her notes after the meeting and ordered her fluids, medications and any tests that were actually required for the 12 babies in NICU.
11.45am	NP did two more baby checks and informed the nursing staff looking after these babies of the plan of care for the next 24 hours.
12md	NP had lunch in the staff room.
1pm-	NP checked the blood results and X-rays that had been ordered and wrote out new orders that were required. NP
5pm	spoke to parents and nurses looking after the babies. NP3 spoke to afternoon nurses individually about the plan of management for each baby. Sometime in the afternoon NP3 filled out the bed status paperwork and contacted or answered phone calls from the neonatal emergency transport service coordinator.
5pm	NP3 was called to the delivery area as a baby was not breathing. When NP arrived a midwife was trying to stimulate the baby to breathe. NP3 calmly instructed the midwife as to how to initiate breathing on this newborn baby. The NP used this as a teaching session and slowly guided the midwife through what was required. Ten minutes later, once the baby was stable, the NP left the area.
5.50pm	The NP was called to the delivery area for instrumental delivery. The baby was delivered breathing spontaneously, so the NP was not required. The NP assessed the new-born, wrote in the nursing notes and went back to NICU.
6.30pm	NP accepted the transfer of a baby with a two-day history of bowel obstruction from the Neonatal Emergency Transport Team.
7pm	NP sorted through the biochemistry, signed off on the blood gases that were taken, spoke to the parents of one baby and recannulated another baby.
7.30pm	NP wrote discharge letters for the babies being transferred out of SCN.
7.40pm	NP used the computer at the nurse's desk to produce the 'registrar' roster.
8pm	NP gave a verbal hand over to the two night 'registrar' staff, consisting of one medical registrar and one transitional NP. NP3 stayed until the baby had arrived from XX Hospital. At 8.30pm the baby with bowel obstruction had arrived from XX hospital and NP3 ordered an X-ray The baby was in a satisfactory condition and had had his bowels open during transfer so the baby was sent to SCN for an overnight stay. NP left NICU at 9.15pm.

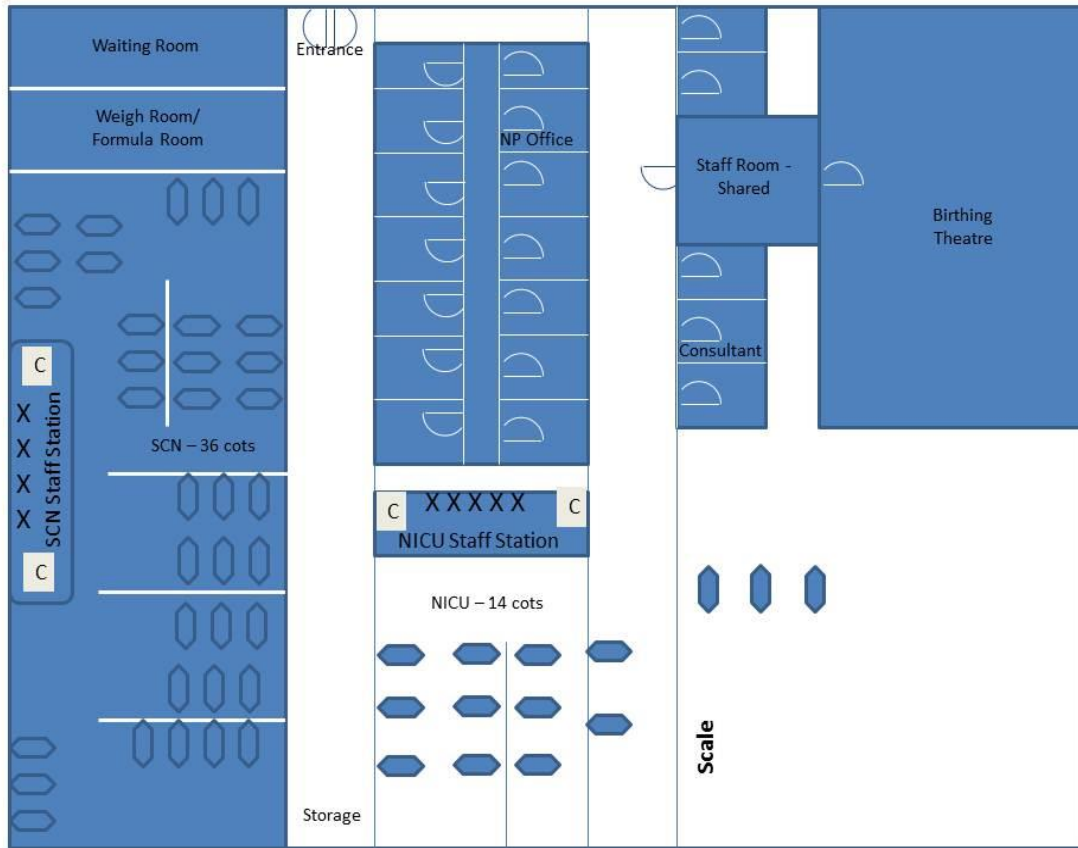
Appendix 8a: Diagrammatic Figures of the Business Spaces where NP1 Worked



Appendix 8b: Diagrammatic Figures of the Business Spaces where NP2 Worked



Appendix 8c: Diagrammatic Figures of the Business Spaces where NP3 Worked



Appendix 9: HREC Approval



Human Research Ethics Committee Committee Approval Form

Principal Investigator/Supervisor: Prof Sandra Middleton

Co-Investigators: N/A

Student Researcher: Ms Jane Allnut (HDR Student)

Ethics approval has been granted for the following project: Evolvement of the Nurse Practitioner Service in NSW
for the period: 31/10/2016

Human Research Ethics Committee (HREC) Register Number: 2015-208N

Ethics Review Exemption - Access to Non-Identifiable Data

The Australian Catholic University Human Research Ethics Committee has reviewed your application for access to non-identifiable data.

HREC notes that the project will be using previously collected non-identifiable data which can be exempt from review according to the National Statement on Ethical Conduct in Human Research (NHMRC 2007) section 5.1.22 and 5.1.23.

Researchers must immediately report to HREC any matter that might affect the ethical acceptability of the protocol eg: changes to protocols or unforeseen circumstances or adverse effects on participants.

For our record-keeping purposes, we deem that this activity will be in progress until 31/10/2016, unless we hear from you to the contrary. It will then be classified as completed.

A handwritten signature in black ink that reads 'K. Pashley'.

Signed:

.....

Date: ... 26/10/2016.....

(Research Services Officer, McAuley Campus)

Appendix 10: International Systematic Reviews excluded from this Literature Review

Excluded Pre November 2008

Citation	Reason for exclusion
Bazian Ltd, London (2005)	Authors independently assessed the RCTs included in Horrocks et al., (2002) systematic review. No new information was revealed or published in this paper.
Bonsall & Cheater, (2008)	Does not add materially to previous reviews of NPs in primary health care (Horrocks, et al., 2002). Focused on advanced primary care nursing, particularly nurse-led first contact care. Only includes four studies involving NPs
Chapman et al., (2004)	Covers other health professionals and NPs. Four papers identify NP. One paper from the reference list has been added to this Literature Review. Other three papers are in Lloyd-Jones (2005) systematic review
Cunningham, (2004)	19 papers are included in their systematic review but only two involved NPs.
Latter & Courtenay, (2004)	There was no mention of NPs in the paper. Focused on the initial stages of nurse prescribing.

Excluded Post December 2008 – October 2016

Citation	Reason for exclusion
Knapp, (2011)	Despite the words “literature review” being in the title there was no evidence of how the review was done. Reported research project
Ramis et al., (2013)	The review consisted of four papers, but none were specific to NPs.
Smith & Hall, (2011)	Despite the words “review of evidence” being in the title there was no evidence of a review search

Appendix 11: Australian Studies excluded from this Literature Review

Excluded January 1990 to November 2008

Citation	Reason for exclusion
Offredy (2000)	The paper pre-dates the authorisation of the first NPs in Australia (late 2000). Using a case study method this paper reported the results of interviews with four “NPs” with questions enquiring about their role, It is unclear as to whether any of the nurses were formally authorised NPs.
Wand & Schaecken (2006)	Although this paper has been cited as evidence of the benefits of a MHNP working in ED, there is nothing in the paper to indicate that the MH liaison nurse was working as a MHNP at the time of the study.

Excluded Post November 2008 to October 2016

Citation	Reason for exclusion
Crilly et al. (2011)	This paper was about the possibility of developing an NP role. Reports on a Hospital in the Nursing Home program where the RN manages the avoidance program. Authors state the program is consisted with NP role but RN does not ‘practice independently or autonomously in the planning and implementation of interventions’ (p 332). The paper suggests developing the role to one of an NP.
Haines & Critchley (2009)	This paper reports on a Delphi study to identify where NP Services can be developed. No NP was evaluated.
Parker et al. (2013)	Study participants were unaware if they had received care from an NP or not. Study involved seven focus groups with 77 participants to explore their perceptions of NPs working in primary health care.
Scanlon (2013)	Descriptive paper about NP Service. Data limited to waiting times for non-urgent patients to be seen in the outpatient clinic comparing periods with and without an NP
Webster-Bain (2011)	Paper summarises the NP role in the maternity setting. The evolution of the NP role was not evident

Appendix 12: International Systematic Reviews that included NP Services - January 1990 to November 2008

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
International Systematic Reviews which include studies involving NPs					
Laurant et al. (2005) Netherlands	To evaluate the impact of doctor-nurse substitution in primary care on patient outcomes, process of care, and resource utilisation including cost.	16 studies, of which 7 involved NPs. Other studies involved “nurses”. Excluded non-randomised studies from meta-analysis due to their inherently greater potential for bias Data base search independently screened by 2 reviewers.	<ul style="list-style-type: none"> • No appreciable differences were found between doctors and nurses in health outcomes for patients, process of care, resource utilisation or cost • Nurse assumed responsibility for first contact care for patients wanting urgent consultations during office hours or out-of-hours • Patient satisfaction was higher with nurse-led care • Nurses tended to provide longer consultations, give more information to patients and recall patients more frequently than did doctors 	Appropriately trained nurses can produce a similar quality of care and similar outcomes as primary care doctors	Review of broad issues with an NP component The analysis assumes the different roles of the NP and nurse are equivalent. The authors indicated their conclusions should be treated with caution because of the limitations of the studies (limited research) and lack of long-term follow-up

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Lloyd Jones (2005) United Kingdom	To identify and synthesize qualitative research studies reporting barriers or facilitators to role development and/or effective practice in specialist and advanced nursing roles in acute hospital settings	Fourteen relevant studies were identified. Studies from any country were eligible. Mostly studies from the UK (11/14).	<ul style="list-style-type: none"> • Described the NPs personal characteristics and previous experience, professional and educational issues, managerial and organizational issues, relationships with other health care professionals, and resources • Important factors were relationships with other key personnel, and role definitions and expectations 	The following features affected role implementation: relationships with other staff groups & role ambiguity Authors recommend when implementing new role clear role definitions & objectives are developed and communicated to relevant staff groups	Specialist and advanced nursing practice in acute hospitals Most studies CNS linked Australian NP identified in Ball (1999) study before NP authorised
Mantzoukas & Watkinson (2007) United Kingdom	To review the nursing literature on the notion of advanced nursing practice (ANP) and consequently provide clarifications on the concept of advanced nurse practitioner by developing its' generic features	Informative and narrative systematic literature review 46 articles and book chapters were use after screening	Seven themes emerged <ul style="list-style-type: none"> • (i)the use of knowledge in practice,(ii) critical thinking and analytical skills, (iii) clinical judgement and decision making skills, (iv) professional leadership and clinical inquiry, (v) coaching and mentoring skills, (vi) research skills and (vii) changing practice 	Seven generic features of the ANP were developed, thus providing clarification to the role and the characteristics of the ANP	Issues reviewing the literature: a variety of definitions & roles emerged. Confusion with term NP and APN

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
International Systematic Reviews on NP Services that focused on specific model of care					
Brown and Grimes (1995) USA Primary Health Care	An evaluation of patient outcomes of NPs and nurse midwives compared with those of physicians, in primary care.	38 NP and 15 NM published & unpublished studies USA & Canada (published 1971 – 1986) Thirty-three outcomes were analysed from the papers Descriptive data and outcome variables on code sheet	<ul style="list-style-type: none"> • Greater patient compliance with treatment recommendations was shown with NPs than with physicians • Patient satisfaction and resolution of pathological conditions were greater for NP patients • NPs provide equivalent care to physician • NMs used less technology and analgesia than did physicians in intrapartum care of obstetric patients. • NMs achieved neonatal outcomes equivalent to those of physicians. 	Care by an NP in situations such as health promotion and the assessment and treatment of minor acute and stable chronic conditions, is equivalent to, or sometimes better than, care by a doctor.	NP/MP compared to medical professionals Limitations in data from primary studies precluded answering questions of why and under what conditions these outcomes apply and whether these services are cost-effective Restricted to studies in the USA and Canada
Carter & Chochinov (2007) Emergency Departments USA	To determine if hiring NPs for the ED can reduce wait time, improve patient satisfaction and provide care of reasonable quality and cost-effectiveness	36 studies included Articles addressed 1 or more of 4 outcomes: cost, quality, wait times & patient satisfaction. USA, UK, Canada and Australia (4 studies) Data base searched independently then results reviewed for inclusion by 2nd reviewer	NPs can reduce wait times for the ED, lead to high patient satisfaction NPs provide a quality of care equal to that of a mid-grade resident Cost, when compared with resident physicians, is higher; however, data comparing to the hiring additional medical professionals is lacking.	Explore the use of NPs, particularly in fast track areas for high volume departments In rural areas, NPs could supplement overextended physicians and allow health centres especially after hours Implement strategies to improve access & make the best use of limited medical resources.	NPs dedicated to seeing low acuity patients 'will improve wait times for these patients as well as improve patient satisfaction, with little or no impact on quality of care' (p. 294).

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Horrocks et al. (2002) Primary Health Care UK	To determine whether nurse practitioners can provide care at first point of contact equivalent to doctors in a primary care setting	11 trials and 23 observational studies. Included 35 papers reporting 34 studies UK, Europe, North America, Australasia, Israel, South Africa, and Japan Cochrane Effective Practice and Organisation of Care Group	<ul style="list-style-type: none"> • Patients were more satisfied with care by an NP (standardised mean difference 0.27, 95% confidence interval 0.07 to 0.47). • No differences in health status were found. • NP 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 did doctors. 	“Patients are more satisfied with care from an NP than from a doctor, with no difference in health outcomes” (p. 822).	NP compared to medical professionals Studies limited to UK, Europe, North America, Australasia, Israel, South Africa, and Japan
Kleinpell et al (2008) Intensive care USA	To provide a summary of the results to date incorporating studies assessing the impact and outcomes of NPs and PAs (Physician Assistants) in the ICU	Systematic Review of 31 papers One author reviewed all articles	<ul style="list-style-type: none"> • Most studies used retrospective or prospective study designs and nonprobability sampling techniques • Only two randomized control trials were identified • The majority examined the impact of care on patient care management (n 17), six focused on comparisons of care with physician care, five examined the impact of models of care including multidisciplinary and outcomes management models, and three assessed involvement and impact on reinforcement of practice guidelines, education, research, and quality improvement. 	The activities of NPs & PAs in intensive care, and the outcomes they achieve, are similar to resident physicians, without altering direct hospital costs. The authors noted the valuable role of NPs in leading research and quality improvement initiatives. In addition, information on successful multidisciplinary models of care is needed to promote optimal use of NPs and physician assistants in acute & critical care settings.	Small sample sizes in most studies Comparing NPs with Physicians Assistants

Appendix 13: Australian Government-sponsored NP Pilot Projects from January 1990 to November 2008

Investigator/ s (year)	Site	Dates	Nature of project	Results
New South Wales (1995)	New South Wales	1994 / 1995	This pilot consisted of 10 projects, nine of which were associated with primary care. The NPs were candidates. Two of the projects were subsequently published: Management of wounds and blunt limb trauma in rural and remote locations (Chang et al., 1999); and NP: an evaluation of the extended role of nurses at the Kirketon Road Centre in Sydney, Australia (Hooke et al., 2001).	Results demonstrated the NP role was “feasible and safe service, with strong adherence to protocols and clinical guidelines”. Clinical review found the clinical decisions of the nurses to be reasonable (NSW, 1995).
South Australia Department of Human Services (1999)	South Australia	1996	Whilst strictly not a pilot study, with their funding South Australia sought to build an evidence-based model and acknowledged the emerging body of literature (especially reports from the NSW NP pilot projects) which espoused the benefits of the NP role.	On the basis of the literature, South Australia amended the legislation and regulations regarding the <i>NSW Nurses Amendment (Nurse Practitioners) Act</i> (1998) and <i>Drugs, Poisons and Controlled Substances Act</i> (South Australian Department of Human Services, 1999).
Parker et al. (2000)	Victoria Phase 1	Late 1999 to early 2000	This pilot consisted of 11 projects, involving three models: acute community, community/acute interface. Data collection included a minimum data set, four case studies and surveys. The NPs were candidates, with few fulfilling all aspects of extended practice (e.g. ordering diagnostic tests and drugs, referrals). One of the projects, involving neonatal care, has been separately reported (Copnell et al., 2004)	Patients commented positively about the NP expertise and the level and care given by the NP. The NP candidates were well accepted by colleagues and patients. There was a poor response rate for the surveys, hence results were considered ‘tentative and indicative’ (Parker et al., 2000).
Pearson et al. (2004)	Victoria Phase 2	October 2001 to January 2002	This pilot evaluated 16 NP models. The NPs were new to the role and required a period of support and supervision. One of the Phase 2 projects, involving intensive care liaison nurses, has been subsequently published (Green and Edmonds, 2004).	Consumers and colleagues rated the NPs level of service provision favourably. All the models were found to be “effective and appropriate, with no significant increases in costs” Pearson et al. (2004).
Queensland Health (2003)	Queensland	February to August 2003	This pilot trialled NP models in two settings – 1 X acute care and 3 X rural and remote (3 sites). Data collection included chart audit, interviews, survey and case study review to evaluate four domains: access,	The NP models facilitated access to services, including quicker access to medical specialists. There were no adverse events, high levels of patient satisfaction and

Investigator/ s (year)	Site	Dates	Nature of project	Results
			clinical effectiveness, safety, and cost.	supportive comments from fellow health professionals.
ACT Health (2002) Gardner and Gardner (2005)	Australian Capital Territory	10-month trial from March to December 2001	The project trialled four NP Service models: sexual health, wound care, mental health liaison / consultation, and military. The military project was not completed. Data collection was similar to the pilot projects in NSW and Victoria. More detail was available about the sexual health model as it was published separately. (O'Keefe and Gardner, 2003).	The project concluded the NP Services were "efficacious, safe, and valued by patients" and other health professionals were very accepting of the Service. Gardner and Gardner (2005).
ACT Government (2005) Australian Government (Department of Health & Ageing) (2005)	Australian Capital Territory	2004 to 2005	The Aged Care Nurse Practitioner Pilot Project jointly funded initiative between the Australian Government. with the purpose of investigating the impact of the NP role in health service delivery for the aged care population of the ACT	The project has demonstrated that there is potential for improved health care outcomes in the aged care population of the ACT, including improved continuity in care across the acute, community and residential aged care sectors, increased patient satisfaction rates, improved communication, coordination and linkages between health care providers ACT. Government (2005).

Appendix 14: Evidence Table on Australian NP Studies from January 1990 to November 2008

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Studies on the early implementation of the NP Service – Pilot Studies						
Allen & Fabri, (2005)	To augment current understandings of the NP role by investigating potential outcomes of a community aged care nurse practitioner (ACNP) service on clients and the health care team Qualitative Exploratory	One NP 15 clients and carers, convenience sample of 10 health care professionals Victoria	Semi-structured interviews	<ul style="list-style-type: none"> An ACNP could provide a high quality of holistic nursing care & positively affect clients' physical and psychological symptom management, enhance clients' quality of life, assist with supplies, provide health education and assist with advocacy Health professionals commented on effective collaboration with the ACNP Service during their partnerships in client care provision 	Findings support full implementation of the ACNP role within the community setting. Funding support for the NP role is a vital, without adequate funding, the full benefits of the NP role will be compromised	Specific to aged care The nurse was an NP candidate working within the role boundaries of a registered nurse. 75%

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Considine et al., (2006a)	<p>To examine the components of the ENPC (Emergency NP candidate) role, the profile of patients managed by the ENPC and the frequency of use of extensions to practice by the ENPC</p> <p>Quantitative descriptive (descriptive and inferential statistics)</p>	<p>One ENPC 476 ENPC-managed patients</p> <p>Emergency Department Northern Hospital Melbourne</p>	<p>Professional journal Register of patients</p>	<ul style="list-style-type: none"> Majority of the ENPC time was devoted to clinical practice (55%) & development of clinical practice guidelines (25%). Patients managed by the ENPC, 49.6% required medications, 51% required diagnostic imaging & 8.6% required pathology testing Most common discharge referrals were made to local medical officers (73.5%) & most common referrals made for patients requiring admission were made to the plastic surgery (37.3%) & orthopaedic (35.5%) units. 	<p>For effective management of specific patient groups by ENP extension to current scope of practiced required Further research to better understand the relationships between ENP outcomes is required</p>	<p>One full-time NP candidate who had to discuss each patient with an emergency physician before managing patient</p> <p>Specific to ED</p> <p>100%</p>

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Considine et al., (2006b)	<p>To compare ED waiting times (for medical assessment and treatment), treatment times and length of stay (LOS) for patients managed by an emergency NP candidate (ENPC) with patients managed via traditional ED care</p> <p>Quantitative non random (case-control)</p>	<p>One ENPC 102 patients in EPNC group (case) 623 patients in traditional care (control)</p> <p>Emergency Department Northern Hospital Melbourne</p>	<p>Audit from Hospro™ Emergency Department Information System</p>	<ul style="list-style-type: none"> No significant differences in median waiting times (p=0.96), treatment times (p=0.41) and ED LOS (p=0.28) between ENPC managed patients and patients managed via traditional ED processes. 	<p>Patient flow outcomes for ENPC managed patients are comparable with those of patients managed via usual ED processes</p>	<p>Australian study limited to a single site. ENPC care compared to normal ED care Acknowledges that patient flow outcomes do not independently or accurately reflect the effectiveness of an ENPC programme.</p> <p>100%</p>

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
<p>Jennings et al., 2008 Paper 2</p> <p>(Paper 1 = Lee and Jennings, 2006)</p> <p>Emergency Department</p>	<p>To evaluate the impact of the introduction of Emergency Nurse Practitioner Candidates (ENPC) on waiting times and length of stay of patients presenting to a major urban Emergency Department (ED) in Melbourne, Australia</p> <p>Quantitative descriptive</p>	<p>Two NP candidates</p> <p>Alfred Hospital, Melbourne</p>	<p>Retrospective case series – data audit from patient information system</p> <p>Outcome measures included waiting times and length of stay</p>	<ul style="list-style-type: none"> • Significant reduction in waiting times and length of stay for NP managed patients. • Waiting times NP was 12 min vs. 31 min ($p < 0.001$) for doctor group, • Length of stay for nurse practitioner group 94 min vs. Doctor group 170 min ($p < 0.001$). 	<p>Significantly reduced waiting times & length of stay for emergency patients seeing NP candidate</p> <p>ENPCs can have a favourable impact on patient outcomes with regard to waiting times and length of stay</p>	<p>Limited to one Australian emergency department.</p> <p>Retrospective case series.</p> <p>Doctor group not located just in Fast track unit – boas results</p> <p>50%</p>

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Joanna Briggs Institute, (2007)	To establish and evaluate pilot NP-like services in residential aged care across four Australian jurisdictions Mixed methods	Seven NP candidates at six sites. New South Wales, South Australia, Australian Capital Territory, Western Australia	Focus groups, surveys and tool for assessing health status, wellbeing & resident satisfaction	<ul style="list-style-type: none"> • NP role viewed positively by residents, their families and key stake holders • Health care sites consistently reported that NP candidates played an important role in educating, encouraging and supporting staff & in liaising with other stakeholders such as general practitioners, allied health professionals & pharmacists. 	No evidence that the introduction of an NP-like service compromises the quality of care or health outcomes in aged care residents Some evidence to suggest NP care improves health status Cost effectiveness of the NP role are equivocal acceptance by service users	Study was complicated by the variability across sites related to jurisdictional variation in practice patterns and the regulation of practice Authors considered findings were ‘tentative and equivocal and should be treated with caution’ (p. 88). Specific to aged care 25%

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Lee & Jennings, (2006)	<p>To describe & compare the characteristics of patients treated by NP candidates and those who DNW (did not wait) for treatment in the ED.</p> <p>Quantitative non-random (prospective study)</p>	<p>Two NP Candidates 344 patients Treated by NPC 374 DNW patients</p> <p>Emergency Department Alfred Hospital Melbourne</p>	Audit from triage records	<ul style="list-style-type: none"> Over 90% of those treated by the NP candidates were Australasian Triage Scale categories 4 & 5 with one-third presenting with musculoskeletal related problems and one-third with wounds and lacerations. Nearly 80% (n = 269) of patients treated by the NP candidates presented between 8 a.m. and 6 p.m. while their mean treatment time was 100 min Patients who DNW usually presented between 6 p.m. and midnight, waiting an average of 2 hr before leaving the emergency department. 	<p>NP candidates have seen a significant number of majority of patients treated had been assigned Australasian Triage Scale categories 4 and 5.</p> <p>Mean treatment times for patients who were treated by the NP candidates were less than the average length of stay before leaving for those who did not wait for treatment.</p>	<p>Data collection occurred two months after NP took up position</p> <p>Specific to ED</p> <p>100%</p>

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
<p>Martin & Considine (2005)</p> <p>Emergency Department</p>	<p>To examine the attitudes and knowledge of ED medical and nursing staff prior to, and following, implementation of the ENP role</p> <p>Quantitative Descriptive</p>	<p>104 ED staff completed the pre-test survey 79 ED staff completed the post-test survey</p> <p>Northern Hospital, Victoria</p>	<p>Survey pre-test/post-test</p>	<ul style="list-style-type: none"> • The attitudes and knowledge of ED medical and nursing staff changed significantly during implementation of ENP role • Pre-test data indicated staff were generally supportive of the role but had a poor understanding of the requirements for endorsement and how the role would function in clinical practice • Post-test data showed significant increases in support for the ENP role, a greater understanding of the requirements to become an ENP and increased understanding of the logistics and functions of an ENP. • The pre-test response rates for nursing and medical staff were 79% and 56% respectively • the equivalent post-test response rates were 57% and 47%. 	<p>The implementation of the NP role within ED has been a positive experience for both medical and nursing staff</p>	<p>The ED employed a single NP candidate at the time of the surveys.</p> <p>Identified ‘the importance of an inclusive and collaborative approach to implementation’</p> <p>75%</p>

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Stanley, (2005a) Stanley, (2005b) Renal	To describe the professional experiences of the NPCs implementing their role Qualitative Content Analysis	Two NP candidates Melbourne	Interviews and personal reflection journal	<ul style="list-style-type: none"> Themes identified: feeling like an imposter, role confusion, loss of identity & lack of 'organisational fit' Reimbursement, large caseloads and legislative obstacles experienced by international NPs were not major causes of stress for Australian NPs NPs found organising extended practices extremely easy at local level with little resistance from colleagues 	Key themes identified were used to make recommendations to assist role transition for future NPs.	Specific to renal Small studies Part A & Part B repetitious 75%
Wortans et al. (2006) Mental Health	To present the findings of a qualitative study undertaken with consumers receiving care and treatment from an NP candidate rather than a licensed medical officer. Qualitative	7 patients seen by NP candidate Victoria	Interview two main themes: the quality of the service provided, and the unique role of the NP candidate	<ul style="list-style-type: none"> NP role perceived favourably by consumers of service 	Contributes to the limited body of knowledge in the psychiatric/ mental health nursing field Specifically the relationship between NP & consumer in facilitating the provision of effective care and treatment	The study involved an NP candidate whose extended role activities were conducted under the direct supervision of a medical practitioner Small study Specific to mental health 25%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Australian studies involving authorised NPs & Implementation						
Adrian & Chiarella (2008)	Reviewing the support and implementation process of the NP role within South Australia Mixed methods	34 authorised NPs, NP candidates and nurses intending to become an NP	Literature review Survey Interviews Focus groups	<ul style="list-style-type: none"> • Lack of clarity about the NP boundaries • Confusion over the title & role of NP • Medics feel NP as competition • Lack of prescription authority by NP • Funding uncertainties about NP position • Lack of organisational support • Resistance for role from health care professionals 	The full implementation of the role in South Australia remains challenging & substantially incomplete	54% response rate 25%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Carryer et al. (2007)	<p>To draw on empirical evidence to illustrate the core role of NPs in Australia and New Zealand</p> <p>Qualitative interpretive study</p>	15 NPs	<p>Published and grey literature policy documents NP program curricula Interviews</p>	<ul style="list-style-type: none"> • NP role identified as having three components: dynamic practice, professional efficacy and clinical leadership. • NP demonstrated professional efficacy, enhanced by an extended range of autonomy that includes legislated privileges • NP was a clinical leader 	<p>A clearly articulated and research informed description of the core role of the NPs provided the basis for development of educational and practice competency standards Relevance to clinical practice.</p>	<p>Findings have the potential to achieve a standardised approach & internationally consistent nomenclature for the NP role</p> <p>75%</p>

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Chiarella et al. (2007)	To review both Nurse/ Midwife Practitioner and Clinical Nurse/Midwife Consultant roles simultaneously Quantitative Descriptive	Clinical nurse consultants / midwifery consultants and NPs / midwifery practitioners New South Wales	Existing validated questionnaire/ survey	<ul style="list-style-type: none"> • Significant benefits from the introduction of senior expert nursing roles in NSW • Demonstrated the NP as part of the round-the-clock care delivery system (working evenings & weekends) • Majority of NPs had a Master's degree in their specialisation • Most important aspect of NP role is clinical care delivery • Identified overlapping roles with CNC, NP, NUM & CNE 	This review provides the opportunity to consolidate the ground breaking work of the NSW Government in introducing senior clinical nursing such as the NP Improved scope of practice support for NPs. Absence of MBS provider numbers & PBS prescriber numbers for NPs creates problems for their patients in terms of access & and equity	Identified supports for and barriers to the successful implementation of the NP role No difference between authorised NPs and transitional NP Poor response rate from NPs (43%) thus data on NPs incomplete 75%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Gardner et al. (2008) NP role & competency development	To understand the level and scope of practice of the nurse practitioner in Australia and New Zealand further using a capability framework. Qualitative	15 NPs	Interviews	<ul style="list-style-type: none"> The analysis showed that capability and its dimensions is a useful model for describing the advanced level attributes of NPs. 	This study suggests that both competence and capability need to be considered in understanding the complex role of the nurse practitioner.	Undertaken as part of a larger study (Gardner et al., 2004) 75%
Wilson et al. (2005)	To explore contemporary collaborative experiences of NPs in providing care with general practitioners (GPs) and allied health care professionals. Qualitative Descriptive	Nine NPs New South Wales	Interviews	<ul style="list-style-type: none"> Most NPs reported dissatisfaction from working in ineffective collaborative relationships with medical and allied health care professionals Total collaboration did not automatically occur and was identified as the exception 	<ul style="list-style-type: none"> Sustainable collaborative partnerships should be developed with all health care providers by acknowledging each other's unique, valuable contribution 	Suggested that lack of understanding of the nurse practitioner role by doctors can inhibit medical-nursing collaboration Based on a small study which focused on the issue of collaboration 75%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Kirkwood et al., (2005) Emergency eye clinic	To describe the implementation and assess the efficacy of an Ophthalmic Nurse Practitioner (ONP) emergency eye clinic. Quantitative Descriptive	259 patients One NP Emergency eye clinic, Flinders Medical Centre, South Australia	Risk assessment audit	<ul style="list-style-type: none"> • 55% (143/159) of patients attending the eye clinical could be attended by the ONP as their conditions were within her scope of practice • Concordance with ophthalmologist was high: diagnosis 100% and management 95.2% • 43% (111/259) of patients were assessed as having minor external eye conditions • No re-attendance was noted in these patients when monitored for a mean of 12 months (range 7– 19 months) 	<ul style="list-style-type: none"> • Study demonstrates the safety and effectiveness of an ONP emergency eye clinic when practising within a defined scope of practice • ONP-led emergency eye clinic is a viable addition to acute ophthalmic eye care in Australia. 	Involved consecutive new patients attending the clinic, comparing diagnosis and treatment by NP and ophthalmologist. Specific to emergency eye 100%
Morcom et al., (2004) Colorectal cancer screening clinic	Not stated Quantitative Descriptive	100 consecutive patients One NP Repatriation General Hospital, South Australia	Audit of client outcomes	<ul style="list-style-type: none"> • Findings revealed NP Service and procedural outcomes compared favourably with other colorectal screening services • Patients indicated a high level of patient satisfaction 	<ul style="list-style-type: none"> • NP-led service clearly offers an effective and efficient option for colorectal screening • provided faecal occult blood testing and flexible sigmoidoscopy, health education and promotion, patient counselling, & a referral service for above-average-risk patients 	Audit included depth of insertion of the instrument, client discomfort scores, pathological findings, and client satisfaction. Specific to colorectal 100%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Australian studies on perceptions of people who interact with the NP Service						
Lee et al. (2007) Emergency Department Australia	To explore staff knowledge of the NP role Quantitative Descriptive	76 medical and nursing staff Emergency Department, Alfred Hospital, Melbourne	Survey	<ul style="list-style-type: none"> • 90% of participants agreed with given statements about the NP role • Knowledge gaps found in one third of respondents in relation to the scope of practice and clinical practice guidelines and over 40% (n = 31) did not understand the procedural requirements for NP endorsement • It was unclear whether the lack of staff knowledge affected patient care or implementation of the NP role 	<ul style="list-style-type: none"> • This study demonstrated a good level of staff knowledge with the NPs in the ED. • Further staff education is needed regarding some aspects of the NP role. 	Used the survey developed by Martin and Considine (2005)The ED employed two NP candidates at the time of the survey Survey conducted 3 months after NP candidates commenced 50%
Wilson & Shifaza (2008) Emergency Department	To investigate the effectiveness of nurse practitioner services for minor injuries in an adult emergency department and to ascertain consumers' satisfaction with the care received Quantitative descriptive	100 retrospective medical record audit 57 self administered patient survey Royal Adelaide Hospital Australia	Medical record audit Self administered patient survey	<ul style="list-style-type: none"> • Majority of presenting complaints seen by NP were minor injuries (96% of presentations triaged level 4 and 94% of those triaged level 5) • Majority of patients were satisfied with the treatment received from NP • Patients are satisfied with management of small injury presentations by NP 	<ul style="list-style-type: none"> • The flow of patients through the department was improved, resulting in medical resources concentrated to higher priority presentations 	Studied patients' views about the NP Service. Studied NP care of minor injuries in an adult emergency department One NP 25%

Appendix 15: International Systematic Review on NP Service – December 2008 to October 2016

International Systematic Reviews which include studies involving NPs

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Donald et al (2013) Long term care settings Canada	To report quantitative evidence of the effectiveness of advanced practice nursing (APN) roles, clinical nurse specialists and NPs, in meeting the healthcare needs of older adults living in long-term care residential settings	Quantitative systematic review using 12 data bases Four prospective studies conducted in the USA & 15 papers were included Used a modified version of the Cochrane Effective Practice and Organisation of Care Review Group risk of bias assessment criteria	Long-term care settings with advanced practice nurses had lower rates of depression, urinary incontinence, pressure ulcers, restraint use, and aggressive behaviours; more residents who experienced improvements in meeting personal goals; and family members who expressed more satisfaction with medical services.	Families were highly satisfied with the care provided by NPs Adding an NP to the team resulted in nursing home residents achieving more of their own goals for health care, at no additional cost	The review included four studies, all from the USA. Two of the studies involved NPs from Australia. More research is needed to determine the effect of APNs on health services use; resident satisfaction with care and quality of life; and the skills, quality of care, and job satisfaction of healthcare staff.
Newhouse et al (2011) USA	To answer the following question: Compared to other providers (physicians or teams without APRNs), are APRN patient outcomes of care similar?	37 of the 69 were NP specific Advanced practice roles include NPs, clinical nurse specialists, certified nurse-midwives, and certified registered nurse anaesthetists	NPs had a 'high level of evidence' to support equivalent levels of patient satisfaction, equivalent levels of self-reported patient perception of health, equivalent patient functional status outcomes	APRNs provide effective and high-quality patient care APRNs have role in improving the quality of patient care	Restricted to studies in the USA. Comparing APRNs to doctors

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
<p>Hoskins (2011)</p> <p>Emergency Department</p> <p>UK</p>	<p>To establish the national and international evidence relating to:</p> <p>i) The scope of practice of ENPs, ESPs and ECPs.</p> <p>ii) The acceptability of these new roles from the perspective of other healthcare professionals.</p> <p>iii) Patient satisfaction associated with these new role</p>	<p>Systematic review of 39 papers</p> <p>Evidence from emergency setting</p>	<ul style="list-style-type: none"> • High level of patient satisfaction was found with NP role • Scope of practice of Emergency NP mostly limited in UK • Five major themes were identified from healthcare professionals' perceptions of these new roles: <ul style="list-style-type: none"> i) Blurring of role boundaries; collaborative working, career enhancement, potential to 'skew' junior Drs experience ii) Training, lack of standardisation iii) Drivers for change; political, 4 h targets, general public iv) Managing risk v) Future roles; homogenous core of emergency care clinicians 	<p>Evidence non-medical roles:</p> <ul style="list-style-type: none"> • help to reduce waiting times in ED; • attract a high level of patient satisfaction, confidence and acceptance. <p>Found limited understanding of scope of practice of these roles</p>	<p>Reviewed the literature on emergency nurse practitioners, emergency care practitioners and extended scope physiotherapists.</p> <p>Included six Australian studies.</p>

International Systematic Reviews on NP Services that focused on specific model of care

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
International Systematic Reviews on NP Services that focused on specific model of care					
Christian & Baker (2009) Aged care USA	To evaluate the effectiveness of having an NP in the nursing home and whether this lead to a decrease in the rate of patient hospitalisations	Systematic review of long term care nursing home residents 12,681 patients in 238 nursing homes Seven papers assessed by two independent reviewers Review used standardized critical appraisal instruments	<ul style="list-style-type: none"> • All articles found a decrease in hospitalization rates when NPs were utilized as a part of the medical team • Five of the 7 studies found a decrease in ER transfers with the NP group. • Three studies also measured length of hospitalization, and all 3 found that the patients with NPs had shorter lengths of stay 	This review has demonstrated that NPs can reduce hospitalisation and ER transfers of nursing home patients	Included seven studies, all from the USA RN trained on site to be NPs
Clarke et al (2013) Aged care Australia	To consider evidence surrounding the emerging role of nurse practitioners in Australia with a particular focus on the provision of healthcare to older people	Systematic review of 62 papers Assessed by two independent reviews	<ul style="list-style-type: none"> • Evidence that NPs provide high-quality healthcare. • Regarding the care provided by NPs, patients report high satisfaction with NPs • Introduction of NPs include addressing workforce shortages, reducing costs and increasing health system efficiency • Evidence consumers support the NP role & would accept care from NP 	The review identified very few studies of NPs in aged care and noted the paucity of Australian evidence regarding NPs more generally More evidence is needed on the effectiveness, economic viability and sustainability of models of care, including those utilising NPs	The review is a scoping study of relevant literature regarding NPs in aged care, including peer reviewed & non-peer reviewed literature.

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Currie et al (2013) Private NP practice Australia	To investigate and synthesize the international literature surrounding nurse practitioner (NP) private practice models in order to provide an exposition of commonalities and differences	Integrative literature review of 35 papers Thematic analysis Private practice models identified Australia, South Africa, Thailand, the USA & the UK	<ul style="list-style-type: none"> Private practice NP roles were identified in five countries, with the majority of the literature emanating from the USA. Thematic analysis resulted in the identification of five themes: reimbursement, collaborative arrangements, legislation, models of care & acceptability 	Very few NPs engaged in private practice internationally. The most common NP private practice models were community based, with NPs working in clinic settings, either alone or with other health professionals. Challenges in the context of legislation & financial reimbursement were identified	Legislation and financial reimbursement are major barriers to nurse practitioners setting up in private practice, both in Australia and other countries where private practice takes place
Fong, Buckley & Cashin (2015) Prescribing Australia	To review the current international literature related to NP prescribing and compares the findings to the Australian context.	Systematic review of 40 papers Focused on literature from the USA, Canada, Europe, Australia, & NZ	The key themes identified internationally linked to NP prescribing related to: i) barriers to prescribing, ii) confidence in prescribing, and iii) the unique role of NPs in prescribing medicines, eg, the high prevalence of prescribing pain medicines in several countries, including Australia.	Variation with the organizational and financial conditions/ climate in which NPs prescribe.	Papers not identified Australian studies in reference list UK papers used but RNs can prescribe in UK
Fry (2009) Hospital NPs Australia	To examine the impact of hospital NP models and roles	Rapid Review of 49 papers Papers from USA (27 studies), the UK (17), Canada (4) and Denmark (1)	<ul style="list-style-type: none"> 95 NP roles internationally found in health related fields No appreciable difference was found between NPs and doctors in patient health outcomes Patient satisfaction scores, in the majority of studies, were higher for NP care Adherence to practice guidelines & appropriate medical record documentation was more reliable by NP than medical staff 	Independence & autonomy of Australian NPs was 'significantly less than international roles' (p. 5) Patient outcomes achieved by NPs & doctors showed 'no appreciable difference' NPs more reliable adherence to practice guidelines	No Australian study High focus on USA & UK studies

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Fry (2011) Critical care Australia	To examine the impact of Critical Care Nurse Practitioner models, roles, activities and outcomes	A single institution prospective observational study over 12 months.	<ul style="list-style-type: none"> • Critical Care NPs were located in all intensive care areas, internationally • NP role focussed on direct patient management, assessment, diagnosis, monitoring & procedural activities. • Critical Care NPs improved patient flow & clinical outcomes by reducing patient complication, morbidity & mortality rates. • Studies also demonstrated positive financial outcomes with reduced ICU length of stay, hospital length of stay & (re)admission rates. 	Strong evidence of improved outcomes (e.g. length of stay, patient complication rates). Weak evidence to support NPs in critical care services for children & neonates Critical Care NPs are demonstrating substantial positive patient, service & nursing outcomes. Critical Care NP models were cost effective, appropriate & efficient in the delivery of critical care services.	Builds on the earlier review by Fry (2009) with a focus on critical care services for adults, children and neonates. Not all of the 47 papers considered to be relevant are referred to in the paper. One Australian study referred to (Green & Edmonds, 2004)
Jennings et al (2015) Emergency Department Australia	To provide the best available evidence to determine the impact of NP Services on cost, quality of care, satisfaction and waiting times in the emergency department for adult patients	Systematic review of 14 papers Reviewed by two independent reviewers data were extracted using standardised tools	<ul style="list-style-type: none"> • Insufficient data was available for meta-analysis of results • Results: emergency NP Service has a positive impact on quality of care, patient satisfaction & waiting times. • Insufficient evidence to draw conclusions regarding outcomes of a cost benefit analysis 	Findings suggest that further high quality research is required for comparative measures of clinical and service effectiveness of emergency NP Service Variability of the clinical skills & theoretical knowledge for the participating NPs is a significant limitation	Review impeded by the lack of available research that examined the effectiveness on emergency NP Service on key outcome measures such as cost, quality of care, satisfaction & waiting times. International confusion of definition for emergency NPs to differentiate the service from other advanced practice nursing roles prohibits international comparisons.

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Masso & Thompson (2014) Australia	To summarise what is known about NPs.	Rapid review 193 papers retrieved 68 papers reported Australian studies and 28 literature reviews The quality of Australian studies were assessed using the Mixed Methods Appraisal Tool	<ul style="list-style-type: none"> International evidence consistently demonstrates that care by NPs results in processes and outcomes that are either equivalent to or better than those achieved by doctors, with the strongest evidence for increased patient satisfaction. NPs are grounded in a set of nursing values, knowledge, theories and practice NPs provide a service that is qualitatively different to doctors. NPs working in EDs comprise 25-30% of the NPs in Australia (largest group) followed by mental health & aged care. 	Patient outcomes of emergency NP Service were mainly focused on wait times and patient satisfaction Most of the Australian literature on patient outcomes of NP Service has focussed on patient satisfaction	Limited evidence available Confusion over NP title
Naylor & Kurtzman (2010) Primary health care USA	To identify and synthesize available evidence on the value of advance practice nurses in delivering primary care, with a particular emphasis on the contributions of nurse practitioners	structured literature search 26 papers were considered	<ul style="list-style-type: none"> patient outcomes, including mortality; satisfaction; and physical, emotional, & social functioning, among those seeing NPs were equivalent to those seeing physicians some studies showed NPs provided more effective care 	The NP workforce presents a potential answer to pressures linked to a decreasing supply of primary care physicians	Provides some additional evidence to build on the reviews by Laurant et al. (2005) and Horrocks et al. (2002) Authors identified mixed quality of the studies retained in this review
Sangster-Gromley et al (2011) Implementation of NP in Canada Canada	To review the literature about the Canadian experience with nurse practitioner role implementation and identify influencing factors	An integrative review was performed guided by Whittemore & Knafl's method Ten published studies and two provincial reports were included	<ul style="list-style-type: none"> Numerous facilitators and barriers to implementation were identified and analysed for themes. Three concepts influencing implementation emerged: involvement, acceptance & intention. Involvement is defined as stakeholders actively participating in the early stages of implementation. Acceptance is recognition and willingness to work with NP. Intention relates to how the role is defined. 	This integrative review revealed three factors that influence NP role implementation in Canada: involvement, acceptance & intention. Strategies to enhance these factors may inform best practice role implementation processes	Specific to Canada Looked at implementation of the NP role

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Wilson (2009) Emergency Department – effectiveness of NP Service Australia	To investigate the effectiveness of nurse practitioner services for minor injuries in an adult emergency department and to ascertain consumers' satisfaction with the care received	Systematic review consisting of nine studies (2 from Australia) including 2 randomised control trials Independently reviewed by 2 reviews	<ul style="list-style-type: none"> • Meta synthesis of research findings generated five synthesised findings derived from 16 study findings aggregated into seven categories. • Evidence comparing the clinical effectiveness of NPs to mainstream management of minor injuries was fair to poor methodological quality. • When comparable data were pooled, there were no significant differences ($P < 0.05$) between nurse practitioners and junior doctors. 	More high quality research needed on interventions that improve outcomes for presentations to emergency departments and address issues of waiting and congestion.	Only one study addressed the issue of cost effectiveness. Results limited by terminology pertaining to NP Other roles are ambiguous Authors acknowledge that findings were limited to the limited number of poor quality studies - recommend conclusions be viewed with caution
International Systematic Reviews on NP Services that focused on one aspect of the NP role					
Bentley (2016) Therapeutic communication Australia	To review the key features of the nurse practitioner–client interaction in the therapeutic encounter to inform the development of nurse practitioner-led memory clinics	Integrative literature review using Whittemore and Knafl's methodology 10 papers reviewed representing over 900 nurse practitioners & clients	Three key factors of NP–client interaction were identified: <ul style="list-style-type: none"> • NP expertise & the influence of the therapeutic encounter context; • affirming exchange as a bedrock of communication; • high levels of client engagement. <p>In aged and primary care settings the therapeutic encounter requires and allows longer consultations leading to improved client satisfaction & potentially, increased adherence to treatment plans.</p> <p>NPs who are open and respectful, who encourage patients to provide more information about their lives and condition and are perceived by the client to be empathetic.</p>	Affirming interactions are a key feature of successful therapeutic encounters when time and context do not allow or warrant the full repertoire of patient-centred communication	Six papers USA & 4 UK

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Bhanbhro et al (2011) Prescribing UK	Aim not stated Question - what is the effect of NMP in primary care and community settings on patient outcomes?	Integrative review of literature 19 papers of 17 studies Non-medical prescribing in primary care was undertaken guided by dimensions of health care quality: effectiveness, acceptability, efficiency and access	<ul style="list-style-type: none"> Only two studies investigated clinical outcomes of non-medical prescribing. Seven papers reported on qualitative designs and four of these had fewer than ten participants. Most studies reported that non medical prescribing was widely accepted & viewed positively by patients and professionals. 	Although most studies reported that nonmedical prescribing is well accepted by patients and health professionals there has been little investigation of clinical outcomes. The review concluded that 'there are substantial gaps in the knowledge base' (p. 9).	Included 17 studies, the majority from the UK. Three studies involved NPs, including the Australian study by Dunn et al. (2010).
Charlton et al (2008) Communication USA	To examine the published research from 1999 to 2005 describing nurse practitioner (NP)–patient interactions and to determine the best practice to enhance patient outcomes	Integrated review – Seven studies were then analysed for NPs' communication styles and the impact that they had on patient outcomes	<ul style="list-style-type: none"> Patient centered communication incorporated into the NPs' practice is associated with improving patient outcomes such as (a) improved patient satisfaction, (b) increased adherence to treatment plans, and (c) improved patient health. 	Two communication styles described in the literature and determined by authors were (a) biomedical and (b) biopsychosocial. The biopsychosocial style is identified as patient-centered communication.	Future research needs to be performed in order to fully study the relationship between NPs using patient-centered communication style and its impact on patient outcomes.
Creedon et al (2009) Part A O'Connell et al (2009) Part B Prescribing UK (Ireland)	To provide a summary of the research conducted in relation to nurse prescribing and confidence in prescribing, the impact of prescribing on relationships, and education for prescribing	Literature review The 22 papers reviewed 44 studies,	<ul style="list-style-type: none"> Seventeen studies were UK based, with USA, Australia and Sweden represented by a minority of studies. Seven studies addressed nurse prescribers' confidence, while eight studies focused on the impact nurse prescribing has on interprofessional relationships. The final seven studies addresses the knowledge base and educational preparation of nurses for the prescribing role 	The views of nurse prescribers are over reported in the literature. In general, nurses reported being confident in their prescribing. This review has demonstrated the diversity of research conducted in the area of confidence in prescribing, interprofessional relationships & education.	Almost all studies were linked to primary care. Only 5 studies involved hospital care and only 6 involved NPs. Further investigations required An evaluation of nurse prescribing. Part 2: a literature review (O'Connell et al., 2009)

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Free et al (2009) Ordering & interrupting diagnostic tests Australia	To examine the available evidence defining the ability of emergency NPs to appropriately order and interpret radiographs.	Literature review 58 publications were identified, and of these 50 papers had no direct relevance to emergency NPs.	<ul style="list-style-type: none"> The physician level of experience reported was from junior doctors to registrar and consultant level and nurses were not always NPs but categorized by years of experience in ED. Overall with the nurses' interpretations, the rate of false negatives and false positives was low. 	The eight studies concluded that advanced specially trained nurses are able to order and interpret X-rays to a level comparable to that of their medical colleagues. Further research is needed	There was a lack of homogeneity in the level of experience of practitioners examined. The majority of studies were performed in the United Kingdom.
Gielen et al (2014) Prescribing The Netherlands	To identify, appraise and synthesise the evidence on the effects of nurse prescribing when compared to physician prescribing on the quantity and types of medication prescribed and on patient outcomes.	A systematic review. 35 studies were included – all but 5 had a high risk of bias Independently by two reviewers	<ul style="list-style-type: none"> Nurses prescribe in comparable ways to physicians. There appear to be few differences between nurses and physicians in patient health outcomes: clinical parameters were the same or better for treatment by nurses, perceived quality of care was similar or better and patients treated by nurses were just as satisfied or more satisfied. 	The effects of nurse prescribing on medication and patient outcomes seem positive when compared to physician prescribing. Conclusions must remain tentative due to methodological weaknesses in studies. More randomised controlled designs in the field of nurse prescribing are required	12 of the 35 studies involved NPs An update of an earlier review (Van Ruth et al., 2007).
Kroezen et al (2011) Prescribing The Netherlands	The aim was twofold: firstly, to gain insight into the scientific and professional literature describing the extent to and the ways in which nurse prescribing has been realised; secondly, to identify possible mechanisms underlying the introduction and organisation of nurse prescribing.	A comprehensive search One hundred and twenty-four publications met the inclusion criteria. Consulted experts in the field of nurse Reviews performed independently by pairs of reviewers.	<ul style="list-style-type: none"> A diversity of external and internal forces has led to the introduction of nurse prescribing internationally. The legal, educational and organizational conditions under which nurses prescribe medicines vary considerably between countries; from situations where nurses prescribe independently to situations in which prescribing by nurses is only allowed under strict conditions and supervision of physicians 	Nurse prescribing varies considerably, from independent prescribing to prescribing under strict conditions and close medical supervision In most countries, prescribing is predominantly a medical role.	8 of the 124 publications involved NPs Focused on the history of nurse prescribing and the legal, educational & organisational conditions for nurse prescribing.

Study	Aim	Sample characteristics / Setting	Results	Conclusions	Comments
Schadewaldt et al (2013) NP – MP Collaboration Australia	Aimed at summarising the existing evidence about the views and experiences of Nurse Practitioners (NPs) and Medical Practitioners (MPs) with collaborative practice in primary health care settings	Integrative review 27 studies met the inclusion criteria Study findings were extracted relating to a) barriers and facilitators to collaborative working and b) views and experiences about the process of collaboration	<ul style="list-style-type: none"> • Five themes were developed in relation to perceptions and understanding of collaboration. • NPs and MPs have differing views on the essentials of collaboration and on supervision and autonomous nurse practitioner practice. • Medical practitioners who have a working experience with NPs express more positive attitudes towards collaboration. • Both professional groups report concerns and negative experiences with collaborative practice but also value certain advantages of collaboration. 	The review shows that working in collaboration is a slow progression. Exposure to working together helps to overcome professional hurdles, dispel concerns and provide clarity around roles and the meaning of collaboration of NPs & MPs.	Selected studies conducted in seven different countries Specific to collaboration between NP & MP

Appendix 16: Evidence Table on Australian NP studies from December 2008 to October 2016

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Australian Studies on the implementation of the NP Service – Pilot Studies						
Arbon et al., (2009) Bail et al., (2009)	To investigating the potential role of the NP in aged care across residential, community and acute care venues in the ACT Mixed methods	Three ‘student’ NPs 43 (staff and patients) surveys 103 patients ACT	Interviews focus groups surveys & journal entries of the student	The project findings have demonstrated that there is potential for significant improvement in client outcomes arising from a transboundary aged care nurse practitioner model. The improved outcomes are associated with a decrease in acute hospital admissions for residential care clients, timely intervention for a range of common conditions and strengthened multidisciplinary approaches to care provision for older people.	Overall the project findings strongly support the potential of a transboundary aged care nurse practitioner role. This role would focus on skilled assessment, timely assessment and intervention, brokering around access to care and clinical leadership and education for nurses	The project evaluated the potential of an aged care NP model, involving student NPs in their final year of preparation for the role. The authors acknowledge they were not evaluating the NP role, but rather evaluating the potential of the role Potential scope and impact of a transboundary model of nurse practitioners in aged care (Bail et al., 2009) 75%

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Fry & Rogers, (2009) Fry et al., (2011) Emergency Department	The implementation study aimed to i) develop an integrated and supported Transitional Emergency Nurse Practitioner role; ii) provide a framework for practice and knowledge development; and, iii) undertake a six month preliminary evaluation of TENP work performance Quantitative Non random	Three transitional NPs (TENP) Indirectly measured quality of care, waiting time. St George Hospital, Sydney	Documentation audit, Survey of work performance by ED physicians Review of transitional NP investigations and referrals (Fry and Rogers, 2009) A prospective study of patient throughput and incident monitoring data (Fry et al., 2011).	<ul style="list-style-type: none"> • 3827 patients managed by 3 TENP model = 10% of emergency department presentations • TENPs involved with 68% (n = 1987) were in the ‘See and Treat’ group & 32% (n = 721) were in the ‘Collaborative’ (n = 742) & ‘Consultative’ (n = 22) groups • Median TENP waiting time 38 min compared with 59.7 min previous year. (Fry & Rogers, 2009) • TENP median length of stay 33 min vs. 53 min (p < 0.0001). Did not wait 4.5% vs. 8.1% in previous year (Fry et al 2011) 	Work performance evaluation identified the role was safe and efficient and that staff supported the new role The advanced role had made a significant contribution towards meeting local service needs.	Australian study conducted at a single site. Data was dependant on correct data entry by staff. Possible selection bias Assessed by medical staff Literature review of the impact of nurse practitioners in critical care services (Fry et al., 2011) 75%

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Lee, 2009 Aged Care	To establish clinical & other outcomes that a gerontological nurse practitioner (ACNP) could achieve for older persons in an Australian care facility Mixed methods	One NP candidate Residential aged care facility in Victoria	Pre and post data NP intervention abstraction Focus groups with staff residents and health professionals	<ul style="list-style-type: none"> • Resident functional and social status improved statically significant under NP care • Higher level of resident satisfaction • ACNP intervention resulted in improved residential health outcomes, improved quality of life and reduced hospitalisation rates 	Identified interventions the ACNP could undertake if the role was available	The NP candidate discussed care, with GP prior to implementing Results for functional & social status were compared to a small control group 25%

Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
<p>Lutze et al., 2011</p> <p>Emergency Departments</p>	<p>To (i) explore the TENP model as it applied to practice working across two urban Emergency Departments (ED); (ii) identify the demographic characteristics of the TENP managed patients; and (iii) identify if TENP patients were appropriately, safely and timely managed</p> <p>Quantitative Descriptive (retrospective exploratory study)</p>	<p>Two TENP (one in each site)</p> <p>Two emergency departments in Sydney</p>	<p>Patient demographic, triage, patient flow and diagnostic data were collected from the clinical information system in both EDs</p>	<ul style="list-style-type: none"> • The TENP managed a total of 481 patients (262 Site 1; 220 Site 2) during the study period. • The majority of TENP patients (412; 84%) were managed in the ‘See and Treat’ cohort (Site 1 246, 94%; Site 2 166, 75%) • 70 TENP patients (16%) were managed in the ‘Fast Track’ cohort (Site 1 16, 4%; Site 2 54, 25%). • The median length of stay for TENP managed patients was 143 min, with 96% of patients leaving the ED in less than 8 h. • The majority (75%) of patients the TENP managed had musculoskeletal and/or wound conditions or injuries. 	<p>TENPs undertake similar activities within urban hospitals when compared with tertiary referral centres.</p> <p>The vast majority of TENP work is focused on non-urgent triage category 4 and 5’s with the dominate TENP diagnostic group remaining musculoskeletal, injuries and wounds.</p>	<p>Mentorship & supervision was provided by emergency physicians.</p> <p>2 small urban EDs</p> <p>100%</p>

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Australian studies involving authorised NPs & Implementation						
Bentley et al., (2015) Aged care	To describe the implementation and challenges for the development of an aged care NP role within general practice Mixed methods	Two NPs 168 clients seen by NPs	Interviews Data abstraction from patient notes	<ul style="list-style-type: none"> 74% presented with multi-morbidity median age of clients = 85 years NPs provided direct & indirect care NPs conducted many off-site & telephone consultations 	A sustainable, professionally supported, combination aged care NP role can add value to general practice with the provision of cost-effective, holistic primary care but must be augmented by independent practice opportunities for the NP	One experience NP mentoring 1 new NP No consultation room provided for NPs Results limited – mostly demographics discussed 25%
Buckley et al. (2013) Prescribing – medications prescribed	To explore which medications Australian nurse practitioners most frequently prescribe Quantitative Descriptive (electronic survey)	209 NPs participated in the survey, 50% of all Australian NPs	electronic survey Medications reported were categorised according to the Australian Medicines Handbook major drug classifications & frequencies presented	<ul style="list-style-type: none"> 78% reported prescribing medications as part of their NP practice. Participants reported prescribing 234 separate medications Medications included anti-infective drugs (most frequently prescribed) followed by analgesic, psychotropic, cardiovascular, musculoskeletal, genitourinary and gastrointestinal classifications. 	The majority of NPs in Australia prescribe medications in their clinical practice, although the proportion of NPs prescribing has not changed significantly since 2009. The medications prescribed highlight the diversity in scope of practice among NPs	Survey of members of the Australian College of Nurse Practitioners about their prescribing practices. Represented less than 50% of endorsed NPs in Australia at the time. Linked to another paper on confidence of NPs prescribing medications (Cashin et al., 2014). 75%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Buckley et al. (2014) Prescribing – sources used by NPs	To investigate the sources, both print & electronic formats, which Australian nurse practitioners (NPs) currently use to obtain information regarding quality use of medicines (QUM) Quantitative descriptive	In 2007, 68 authorized NPs participated in the survey (27% of Australian authorized NPs at the time) In 2010, 209 NPs participated in the survey, which gave a response rate of 83% of ACNP eligible members and represented approximately 50% of all Australian NPs.	Electronic survey Conducted in 2007 and again in 2010.	<ul style="list-style-type: none"> Overall, professional literature was the most reported information source in years 2007 and 2010. 36% more accessed electronic versions of the MIMS Australia resource & 14% more accessed TG Australia electronic version (compared to 2007) 	There was a decrease respondents who obtained information from drug industry representatives. NPs prefer to receive medicines information in an electronic form, rather than a paper-based version, and over the time period more NPs are utilizing electronic sources rather than paper.	Survey of members of the Australian Nurse Practitioner Association about prescribing practices. Other papers used these surveys (Newman et al., 2009); (Dunn et al., 2010); (Cashin et al., 2009); Buckley et al., 2013). This paper compared 2007 results with 2010 survey (Buckley et al., 2014). 50%
Cashin et al. (2009) Prescribing – patient education	To describe the perceptions of Australian NPs and NP candidates (student NP and NPs in transitional roles but not yet authorised) in regards to their confidence and practice in providing medicine information to patients / clients. Quantitative descriptive	68 NPs & 64 NP candidates across Australia	Electronic survey	<ul style="list-style-type: none"> 67% of NPs & 54% of NP candidates identified feeling very confident in providing their clients with education about medicines. NP - 78% identified they generally do inform patients of the active ingredient of medications 60% of NP indicated they provide or discuss CMI leaflets with their patients 	The incongruities between confidence in the provision of medication education to patients and self-reported concordance building NP prescribing behaviour needs to be a focus of critical reflection on NP prescribing practice.	Survey of members of the Australian Nurse Practitioner Association about prescribing practices. Other papers used these surveys (Buckley at al., 2014); (Dunn et al., 2010); (Cashin et al., 2009); Buckley et al., 2013). 50%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Cashin et al. (2014) Prescribing – confidence in medication management	To address the gap in the literature by examining Australian NPs' self-reported confidence in prescribing Quantitative descriptive	209 NPs	Electronic survey 2010	<ul style="list-style-type: none"> • A significant correlation between years endorsed as an NP & prescribing confidence was found. • NPs in Australia were significantly more confident in the prescribing aspects of commencing a new medication than adjusting or ceasing a medication prescribed by others. 	These findings are discussed in relation to promotion of the quality use of medicines and identification of potential strategies to promote the ongoing positive evolution of NP practice in Australia.	Survey of members of the Australian Nurse Practitioner Association about prescribing practices Linked to other papers 75%
Cleeton et al. (2011)	To place legal issues pertinent to the role and functions of nurse practitioners firmly at the forefront of debate, in order to create further awareness of the legal position derived from the increased litigation risks amongst the nurse practitioner workforce within Australia Qualitative	four NPs (two fully endorsed and two candidates),	Interviews	<ul style="list-style-type: none"> • Descriptive comparison of NP development, educational requirements & legal / professional issues of five countries 	In Australia unlike other countries, a consistent approach to the implementation of the nurse practitioner role and prescribing rights has been adopted providing a safer practice context	Component of PhD investigating legal issues relevant to the role and functions of NPs. 50%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Desborough (2012) Construction & implementation of role	To examine how nurse practitioners construct and implement their roles. Qualitative	12 NPs Participants worked in a variety of areas in the ACT health public sector	Interviews (7 NPs) Focus Groups (5NPs)	The central process of ‘developing legitimacy and credibility’ is achieved through the processes of: i) ‘developing Clinical Practice Guidelines’, ii) ‘collaborating with the multidisciplinary team’, iii) ‘communicating’, & iv) ‘transitioning to practice’	Process of developing legitimacy & credibility is vital for successful implementation of NP role Need a supportive & informed process of Clinical Practice Guideline development and an inter-disciplinary relationships to facilitate collaboration & sources of mentorship for NPs.	Specific to ACT Specialities unknown ? same participants for interviews & focus groups 50%
Dunn et al. (2010); Prescribing practices	To conduct the first national study of Australian NP prescribing practices. Quantitative descriptive	68 NPs across Australia	Online survey 2007 survey	<ul style="list-style-type: none"> 72% of authorized NPs and 39% of NP candidates reported that their practice involved prescribing pharmaceutical agents. 59% (n = 29) of the authorized NPs and 64% (n = 16) of the NP candidates reported that they usually prescribe at least once a day 	The results from this study suggest that fewer Australian NPs prescribe than do NPs in the United States, and those who do prescribe do so less frequently.	Survey of members of the Australian Nurse Practitioner Association about prescribing practices. Other papers used these surveys (Buckley et al., 2014); (Newman et al., 2010); (Cashin et al., 2009); Buckley et al., 2013). 50%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Gardner et al. (2009) First National Census	To describe the current characteristics and distribution of nurse practitioners in Australia by reference to the geographical location of their workplace, their scope of practice, patterns of practice and barriers to practise Quantitative descriptive	234 authorised Australian NPs, with an 85% response rate, of which 72% were employed as an NP.	Postal survey / five-section questionnaire	<ul style="list-style-type: none"> • Mean age of 47.0 years and 84.2% were women. • Only 145 NPs (72%) reported being employed • Most common role - Emergency NPs (26.9%). • Nearly 1/3 of employed NPs were still awaiting approval to prescribe medications • Lack of Medicare provider numbers and lack of authority to prescribe through Pharmaceutical Benefits Scheme was limiting practice (> 70%) 	These findings are consistent with the international literature describing establishment of reformative health care roles.	First national census. Survey of authorised NPs regarding their role and scope of practice. 100%
Harvey (2010)	To compare the discourses in policy at a strategic level with those that emerge in the implementation of the NP role at a local level about how autonomy is thought to be in operation. Qualitative	Eight NPs, only one of whom was employed as an NP at the time	interviews	<ul style="list-style-type: none"> • NP role development is controlled by powerful groups external to the nursing profession. • The dominant discourses use the traditional health care divisions of labour to maintain control through a financially driven focus on health care • Impeding NP role are the nurses themselves 	Nurse Practitioners, despite being held out by the nursing profession as clinical leaders, are not able to influence change in health care or in their own roles.	PhD thesis Critical discourse analysis was used to examine policy documents regarding NP authorisation 75%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Keating et al. (2010)	To explore the perceived barriers to progression and sustainability of the NP role in Victoria. Quantitative descriptive	48 individuals were contacted 37 (77%) participated [Individuals were those working in EDs & funded as part of the emergency nurse practitioner - included NP and NP candidates, project officers & nurse unit manager].	Survey	<ul style="list-style-type: none"> • Main barriers to sustainability were lack of ongoing funding from their own organisation & external sources. • Other barriers included confusion about the role. • Main barriers to role progression were legislative constraints (n = 29, 78%) & cost of Masters Programmes (n = 29, 78%) 	This survey revealed a myriad of barriers to role sustainability and progression. These barriers need to be explored and progressed if the NP role is to continue to develop & expand	To explore perceived barriers to progression and sustainability of the NP role. 100%
Lowe et al. (2013)	To explore the perceptions of the integration of NP roles in Australian healthcare settings, in terms of support, positive regard and sustainability, from the viewpoints of NPs, nurse managers and nurse policymakers Quantitative descriptive	452 questionnaires were mailed (117 to NPs, 295 to nurse managers & 50 to nurse policymakers). 172 were returned (38% response rate)	Survey	<ul style="list-style-type: none"> • There was a positive regard for NP roles (n =116, 67%) • Support for NP roles was ambiguous (n = 92, 53% for support) • Confusion over role and function of NP 	The implementation, integration and sustainability of NP roles in healthcare settings in Australia are challenging Respondents reported barriers that could impede the expansion & sustainability of NP roles.	Convenience sample of NPs, nurse managers and nurse policymakers regarding integration of NP roles in the health system. Response rate of 38% (n=172). 25%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
MacLellan et al. (2014)	To examine the transition of RNs to NPs in Australia Qualitative	Ten NPs transition to NP role At least three interviews were conducted with each NP, over a period of 12 months	interview	<ul style="list-style-type: none"> • Funding for NP position withdrawn by organisation • NP was overwhelmed by medical dominance & unsupported in medical group practice • Confusion of NP role • Management not supportive or accepting of NP role 	Participants' narratives provide insight into their transition to practice and the barriers and facilitators to their new role.	Presented personal narrative from 3 NPs 25%
Middleton et al (2016) NP profile	To examine longitudinal changes in the profile of Australian nurse practitioners surveyed in both 2007 and 2009 ('resurveyed respondents') and to determine differences between nurse practitioners who completed the census only in 2009 ('new respondents') and resurveyed respondents Quantitative Descriptive	408 NPs	Self-administered survey	<ul style="list-style-type: none"> • 408 surveys were administered, 293 questionnaires completed (response rate 76.3%) • New respondents were more likely to have worked as an NP in the previous week ($p < 0.004$) • There was a significant increase in the number of NPs waiting on approval for some or all clinical protocols ($p = 0.024$). 	Conditions enabling work to full scope of practice continue to be perceived as suboptimal by Australian NPs. Supportive strategies are needed to enable the role to be effectively utilised.	Authors indicated there were no differences in the limitations & enablers identified in 2007 compared to 2009, indicating that perceived barriers had not been addressed over time, nor had there been substantial improvements 100%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Middleton et al. (2011) Second National NP Census	To profile nurse practitioners and their practice in Australia in 2009 and to compare with results of a similar census conducted in 2007 Quantitative descriptive	293 NPs responded (76.3%), of which 71.5% were employed as an NP	Questionnaire	<ul style="list-style-type: none"> • Majority were female (n=229, 81.2%) • Mean age was 47.3 years (SD=8.1) • Emergency NPs represented the largest clinical field of practice (n=63, 30.3%) • Majority of NPs practiced in a metropolitan area (n=133, 64.3%) • only 71.5% (n=208) were employed as an NP • 22.8% were awaiting policy approvals • No Medicare & Pharmaceutical Benefits Scheme' remained • Practice limited by 'lack of organisational support' (n=105, 52.2%). 	Less than satisfactory uptake of NP role: only 72% working as NP – unchanged since 2007 Whilst barriers constraining NP practice reduced, they remained unacceptably high. Adequate professional & political support is clearly necessary to ensure the efficacy and sustainability of this clinical role	Second national census, repeating the survey done in 2007. Compared 2009 results with 2007 findings South Australia NP target through "snowballing" 100%

Study / Year / Model (where applicable)	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
<p>Newman et al. (2009)</p> <p>Prescribing – continuing education</p>	<p>To explore Australian NP preferences for continuing education and NP access to electronic mediums that may increase CE opportunities</p> <p>Quantitative descriptive</p>	<p>68 NPs across Australia</p>	<p>Online survey 2007 survey</p>	<ul style="list-style-type: none"> 93% respondents viewed CE to be very important and preferred methods of continuing education included receipt of information by email, and interactive online case studies. Respondents working in metropolitan areas had increased access to high speed Internet in comparison to NPs working in rural or remote areas, (88% vs. 69%, $p = 0.07$). Significantly more NPs working in metropolitan areas had access to a Personal Digital Assistant (PDA) than NPs working in rural or remote areas (44% vs. 6%, $p = 0.003$). 	<p>This is the first national survey to report preference for CE and access to technology of NPs in Australia. Electronic technology can provide programmed support such as online learning and resources through computers and PDAs to maximise NP prescribing potential.</p>	<p>Survey of members of the Australian Nurse Practitioner Association about prescribing practices. Other papers used these surveys (Buckley et al., 2014); (Dunn et al., 2010); (Cashin et al., 2009); Buckley et al., 2013).</p> <p>50%</p>

Study / Year / Model (where applicable) Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Australian NP studies that focused on a specific model of care						
Considine et al. (2010) Emergency Department	To evaluate the effect of clinician designation on emergency department fast track performance Quantitative Non random 75%	All patients seen in Emergency Department Fast Track during a 12-month period (n = 8714). Northern Hospital, Melbourne	A retrospective audit of patients managed through an Emergency Department fast track unit.	<ul style="list-style-type: none"> Patients managed by nurse practitioners and emergency physicians had significant shorter emergency department length of stay than those managed by junior doctors Nurse practitioners met NEAT 95.9% vs Interns 78.9% 	Waiting times, in relation to recommendations in the Australian Triage Scale. Length of stay, for non-admitted patients.	One hospital. Many variable results open to interpretation
Cox et al., (2013) Chemotherapy	To evaluate the oncology nurse practitioner (NP) role in a chemotherapy unit Quantitative descriptive 100%	One NP 87 occasions of service (72 patients) during the study period Sydney	Data collected on patient demographic characteristics, medical problems and reason for presentation.	<ul style="list-style-type: none"> Most common presenting problem: nausea, vomiting or dehydration Most presenting problems were rated as moderate or severe (n=73, 84%) Median time to review for the NP was 5 min & nearly all consultations (n = 83, 96%) took 30 min or less Following NP consultation, most occasions of service did not require subsequent hospital admission (n=52, 60%), medical advice (n=61, 70%) or medical review (n=75, 86%). 	The NP is a valuable asset to a busy department, increasing access to timely and appropriate healthcare for patients on chemotherapy	Study described as an 'initial evaluation'. The study collected data on unscheduled occasions of service to a chemotherapy unit, seen by the NP. 100%

Study / Year / Model (where applicable) Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Gardner et al., (2014)	To evaluate the safety and quality of nurse practitioner service using the audit framework of Structure, Process and Outcome. Mixed methods	11 NP Services, including primary care, community-based chronic disease clinics and hospital acute care setting Queensland	Interviews with 11 NPs and 13 patients, Survey of 36 stakeholders Medical record audits	<ul style="list-style-type: none"> The study identified that adequate and detailed preparation of Structure and Process is essential for the successful implementation of a service innovation The multidisciplinary team was accepting of the addition of nurse practitioner service, and NP clinical care was shown to be effective, satisfactory and safe from the perspective of the clinician, stakeholders & patients. 	This study demonstrated that the Donabedian framework of Structure, Process and Outcome evaluation is a valuable and validated approach to examine the safety and quality of a service innovation. Furthermore, specific Structure elements were shown to influence the quality of service processes further validating the framework and the interdependence of the Structure, Process and Outcome component	The roles are not described. 50%
Jennings et al. (2009) Emergency Department	To explore patients' satisfaction with care provided by emergency nurse practitioners (EDNP) and emergency department doctors Quantitative Non random	202 patients completed the survey, 103 seen by EDNP and 99 seen by emergency doctors. Alfred Hospital, Melbourne	A self-administered 16 question survey	<ul style="list-style-type: none"> Significant reduction in waiting times and length of stay for NP managed patients Waiting times NP was 12 min vs. 31 min ($p < 0.001$) for doctor group Length of stay for NP group 94 min vs. doctor group 170 min ($p < 0.001$). 	Patient satisfaction questionnaire Responses indicated NP interest and understanding, patient confidence and reassurance from consultation, discussion thoroughness, and management, planning and family inclusion.	Compared results for patients treated by NPs and ED medical staff. Limited to one emergency department. Retrospective case series. Doctor group not located just in Fast track unit Possible data collection inaccuracies. 25%

Study / Year / Model (where applicable) Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Jennings et al. (2013) Emergency Department	To conduct a retrospective study of patient presentations at the ED to obtain a profile of the characteristics of patients managed by emergency nurse practitioners (EDNP). Quantitative descriptive	5212 patient notes were reviewed Alfred Hospital, Melbourne	Data were extracted & imported directly from the ED patient information system (Cerner log)	<ul style="list-style-type: none"> • A total of 5212 patients were reviewed • The median age of patients was 35years • 61% of patients were male • The most common discharge diagnosis was open wounds to hand/wrist • Waiting times to be seen by the ENP were 14 min and length of stay for patients with a discharge disposition of home were 122min 	This study has provided information on patient baseline characteristics & performance on important service indicators for this patient sample that will inform further research to evaluate specific outcomes of the EDNP Service	Retrospective review of all patients seen by NPs in a fast track service, including waiting time and length of stay in the ED. 100%
Lee et al. (2014) Emergency Department	To compare the accuracy in interpreting isolated adult limb radiographs between emergency nurse practitioners (EDNP) and emergency physicians. Quantitative Non random	Six NPs and 10 emergency physicians 200 adult patients with isolated limb injuries were consented Alfred Hospital, Melbourne	Level of agreement between the two-clinician groups Ordered and interpreted radiographs were recorded by either EDNP or emergency physician Consultant radiologist reviewed each radiograph and their interpretation was seen as the gold standard.	<ul style="list-style-type: none"> • The sensitivity for the EDNP was 91% and 88% for the emergency physicians • The specificity for the EDNP was 85% and for the emergency physicians 91% • The weighted Kappa on the presence of a fracture between the EDNP and emergency physicians was 0.83. 	This study validates the clinical and diagnostic skills of EDNP assessed in the interpretation of isolated adult limb injury radiographs	One consultant radiologist served as the 'gold standard' for interpretation One hospital 100%.

Study / Year / Model (where applicable) Study	Aim & Method – MMAT category	Sample characteristics & Setting	Data collection methods	Results	Conclusion	Comments & Quality Assessment (MMAT score)
Li et al. (2012) Li et al. (2013) Emergency Department	To investigate the perceived impact of the NP on the delivery of care in the ED by senior doctors, nurses, and NPs. Qualitative	Five NPs, four senior doctors (staff specialists & ED directors) and five senior nurses Two large teaching hospitals in Sydney	Semi-structured interviews	<ul style="list-style-type: none"> Contrary to the perspective of ED directors, NPs believed they assisted doctors in managing the increasing subacute presentations to the contemporary ED NPs believed they embraced a preventative paradigm of care which addressed the long term priorities of chronic disease prevention The ambiguous position of the NP role, was identified and resulted in a duality of NP governance 	Interpretation of the NPs' role occurred through different frames of reference. This has implications for the development of the EDNP role Collaboration and dialogue between various stakeholders, such as ED doctors and senior nursing management is required	One paper investigated the use of information & communication technology by NPs (Li et al., 2012), the other paper examined the impact of the role, as perceived by those interviewed (Li et al., 2013). 75%
Murfet et al., (2014) Diabetes in pregnancy	To investigate maternal and neonatal outcomes following implementation of a nurse practitioner-led model of care for diabetes in pregnancy. Quantitative Non random	A total of 261 pregnancies were included: 112 pre-intervention and 149 managed under the nurse practitioner-led model. (NP coordinated a clinic involving an obstetrician, diabetes educator, dietician & antenatal nurse) Tasmania	Audit of medical records (Uncontrolled before-after intervention study)	<ul style="list-style-type: none"> There were 37 women with pre-existing diabetes (26 T1DM, 11 T2DM) and 195 with gestational diabetes Referrals to dieticians and diabetes educators increased, while referrals to physicians decreased There was no decrease in the risk of adverse maternal outcomes for all women with DIP or women with GDM However, there was a 24% decrease in adverse neonatal outcomes overall and a 40% decrease among infants of women with gestational diabetes 	The study demonstrated that NP-led models of care for diabetes in pregnancy are feasible. The findings suggest that the model reduced adverse neonatal outcomes.	The role of the NP is not described, other than stating that the clinic was led by the NP. Data from an audit undertaken after establishment of the clinic was compared with historical data (2003 to 2006). 100%

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O’Connell et al (2014) Profiling NP Service in ED	To investigate the practice profile of emergency nurse practitioners (EDNP) across Australia Qualitative	Forty-six potential participants responded to the invitation. From this, 20 participants were selected	Interview	<ul style="list-style-type: none"> The findings show that although there is no single definable model of the EDNP role in Australia, there are practice features that are common across all service models These have been conceptualized as “modes of practice.” 	This study has produced new knowledge about the practice profile of EDNP.	Confusion over practice parameters 75%
Parker et al., (2013) Walk in Clinic	To gain insight into the nursing staff’s experiences and satisfaction with working at the ACT nurse led Walk-in Centre. Mixed methods	Interviews with 12 nurses (3 NPs & 9 advanced practice nurses) Canberra Hospital	Interview	<ul style="list-style-type: none"> Role stressors included adapting to autonomy, role incongruity and lack of access to appropriate education, training and sources of collaboration and mentorship. Sources of satisfaction were the autonomous role, relationships with the team and the capacity to deliver quality nursing care. 	Autonomy is only a source of satisfaction when coupled with supportive and cohesive professional relationships with both nursing and medical colleagues.	Evaluation of the Walk-in Centre The Walk-in Centre was staffed by 3 NPs and 9 other advanced practice nurses. The NP role was not fully implemented Similar paper Desborough et al (20123) 50%
Schoenwald (2011) Acute pain management service	To evaluate a beginning Nurse Practitioner (NP) role in Acute Pain Management Quantities descriptive	One NP Prescription & service provision over 200 working days. Ipswich Hospital, Queensland	Review of data on prescribing, service utilisation, incidents, clinical complaints and use of non-pharmacological interventions	<ul style="list-style-type: none"> Therapeutic activity reflected contemporary pain management practice and espouse the NP as a safe and effective clinician The role has improved patient access to pain management through the prompt use of non-pharmacological interventions, drugs used to treat analgesic side effects, opioids and non-opioid analgesics. 	These initial positive outcomes are consistent with NP role development described elsewhere in Australia & overseas across a variety of healthcare settings.	The NP worked within an anaesthesiology-based pain service to review all clients undergoing major surgery or trauma and provide a pain management to women for caesarean section 100%

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Stanley et al (2015) Renal	To assess a dialysis nurse practitioner (NP) model of care by examining satisfaction, quality of life (QOL) and clinical outcomes of haemodialysis patients and explore experiences of dialysis nurses Mixed methods	45 patients consented to have their Medical Record audited 10 nurses consented for interview Four locations in Victoria	Medical record audit Interviews	<ul style="list-style-type: none"> Nurses commended the NP role, five themes emerging: “managing and coordinating”, “streamlining and alleviating”, “developing capability”, “supporting innovation and quality” and “connecting rurally” Patients’ average age was 66 years & 71% were male Patients’ satisfaction with the care they received was rated 3.5/4 or higher across seven parameters 	The NP model of care is effective in enhancing patient care within a collaborative framework. The challenge is to sustain, and enhance the model, through mentorship programs for potential candidates	One NP 50%
Wand et al., (2012) Wand et al., (2011a), Wand et al., (2011b), Wand et al., (2011c), Mental health nurse practitioner in ED + outpatient service	To evaluate an emergency department (ED)-based mental health nurse practitioner (MHNP) outpatient service in Sydney, Australia Mixed methods	interviews with 23 patients and 20 staff Data collection from 101 patients Royal Prince Alfred Hospital, Sydney	Data collection ED patient information interviews	<ul style="list-style-type: none"> Over 60% of outpatients were followed up within 5 days of their initial presentation Participant satisfaction was generally rated as high to very high Interviewed outpatients (n = 23) were particularly positive about the accessibility, immediacy, and flexibility of the service and overall therapeutic benefits Emergency staff (n = 20) considered outpatient service enhanced service provision by facilitating access to a underserved population 	The ED-based MHNP role enhances access to specialised mental health care and also supports emergency staff	Mental health NP working in ED and also providing an outpatient clinic linked to the ED service. Realistic evaluation of an emergency department-based mental health nurse practitioner outpatient service (Wand et al., 2011a) An emergency department-based mental health nurse practitioner outpatient service: Part 1, participant evaluation (Wand et al., 2011b) & Part 1 – staff evaluation (Wand et al., 2011c) 75%

Australian studies on perceptions of people who interact with the NP Service

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Australian studies on perceptions of people who interact with the NP Service						
<p>Allnutt et al. (2010)</p> <p>Clients perceptions</p>	<p>To evaluate clients' understanding of the role of the NP and their satisfaction with education received, quality of care and NP knowledge and skill</p> <p>Quantitative descriptive</p>	<p>Thirty-two NPs (NP response rate 93%) recruited 129 clients (client response rate 90%).</p> <p>All authorised NPs working in a designated NP position in Western Australia & those working in three area health services in NSW were invited to recruit five consecutive clients</p>	<p>self-administered survey</p>	<ul style="list-style-type: none"> • 63% of clients were aware they were consulting an NP. • Majority clients rated the following NP-related outcomes as 'excellent' or 'very good': education provided (89%); quality of care (95%); & knowledge and skill (93%). • Less than half reported an understanding that NPs could prescribe medications (40.5%) or interpret X-rays (33.6%). • Where applicable clients would prefer to see an NP rather than a doctor (p = 0.022) 	<p>Successful implementation and expansion of the NP role requires NP visibility in the community. Despite high levels of satisfaction, more awareness of the scope of the NP role is required</p>	<p>Evaluated understanding of the NP role, satisfaction with education received, quality of care and NP knowledge and skill.</p> <p>100%</p>
<p>Della & Zhou (2009)</p> <p>NPs perceptions</p>	<p>To evaluate of the NSW Nurse Practitioner role in July 2009</p> <p>Qualitative 25%</p>	<p>NPs in NSW – actual numbers not reported</p> <p>New South Wales</p>	<p>Face to face interviews Telephone interviews Published documents</p>	<ul style="list-style-type: none"> • NP role was valued as an advanced nursing role. • New NP role has not yet reached its full scope of practice. • Implementation of positions was initially slow & limited by Area Health Service (AHS) financial restraints • Internal professional role clarity is required 	<p>Strong commitment to NPs from participants. Areas that have caused a level of frustration & dissatisfaction are often related to policy and process rather than the legislative framework</p>	<p>Data on number of participants were not reported 10 years after first NP authorisation</p>

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Jones et al. (2013) Doctors perceptions	To explore Emergency Physicians perceptions towards the Emergency Nurse Practitioner (EDNP) role, specifically, examining their support, its perceived benefits, difficulties, impact in the clinical environment and proposed scope of practice Quantitative descriptive	2868 questionnaires distributed a total of 703 questionnaires were returned (25%) Of the respondents, 47.5% (n = 329) were Emergency Physicians & 52.5% (n = 364) were Trainees.	Online survey emailed	<ul style="list-style-type: none"> 50.8% (n = 315) responded positively to supporting EDNP role whilst 20% (n = 124) responded negatively Those who have worked with EDNP were more supportive than those who hadn't (59.8% /n = 307 vs 7.5% / n = 8). 	Provides evidence of Emergency Physicians positive perceptions & recognition of benefits of the EDNP role in those who have worked with an EDNP Concerns were expressed with regard on-going medical training, medico-legal implications & training of EDNP.	Survey emailed to all members of the Australasian College of Emergency Medicine 25% response rate Compared those who have worked with an EDNP to those who hadn't. 75%
Weiland et al. (2010) Doctors perceptions	To determine the perception of NPs by medical staff working in Australian Emergency Departments (EDs). Qualitative	95 doctors from 35 EDs including 36 Departmental Directors	Semi-structured telephone interviews	<ul style="list-style-type: none"> Thematic analyses revealed polarised views held by doctors. Major issues included lack of clarity of the NP role definition, their scope of practice & differentiation from the medical role. 	The EDNP role is poorly understood by ED doctors. Opposition to the NP role is a significant barrier to the introduction of great numbers of EDNPs as a strategy to overcome the medical workforce shortage	Four open ended questions concerned NPs Paper reported responses 50%