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An exploration of the development of advanced rural nursing in the Australian and New Zealand primary health care setting:
An Integrative Review.

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A dissertation submitted for the degree of Masters of Health Science (Nursing – Clinical)
At the University of Otago, Christchurch
New Zealand.

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ABSTRACT

Background

Advanced rural nursing roles have evolved in response to the international need to address the complex and dynamic health care system and to meet the demand for flexibility in health service delivery. There has been a shift in focus to more primary based health care, with rural nurses in both Australia and New Zealand providing dynamic and competent advanced nursing care. Community partnership models of rural Primary Health Care (PHC) are the new focus in collaborative health care teams.

Aim

The primary aim of this review was to examine the development of advanced rural nursing in the Australian and New Zealand rural primary health setting.

Methods

A comprehensive search of eleven electronic databases was performed. A five stage integrative review process was then conducted, utilising the Joanna Briggs Institute (2011) quality and data extraction tools to review the literature which met the inclusion criteria namely articles published in English between 1996-2014 and focused on Australian and New Zealand rural PHC nursing roles.

This was followed by the data analysis and the thematic code process using Thomas’ (2003) general inductive approach.

Results

The search strategy resulted in twenty-four articles which were appraised and met the inclusion criteria. The data extraction process resulted in the generation of three themes using Thomas’ (2003) general inductive approach. Theme one explored the development of advanced rural PHC nursing in Australia and New Zealand. Theme two describes the factors influencing the development of advanced rural PHC nursing roles in Australia and New Zealand, and Theme three highlights aspects pertinent to the future of advanced rural PHC nursing in Australia and New Zealand.

Conclusion

This review included an exploration of nursing scopes of practice, titles, roles and functions. This was followed by a review of the numerous factors influencing advanced rural
PRC nursing practice including the rural community, the rural health workforce, the need for support systems, education and career pathways, and finally funding and purchasing. The implications and the future progression of advanced rural PRC nursing in Australia and New Zealand are then discussed.

This integrative review found that there are significant opportunities for rural nurses in Australian and New Zealand PRC if the current barriers to advancing practice are addressed by continuing strategic planning and consultation to develop well defined clinical and educational career pathways for rural nurses. This integrative review has demonstrated and reinforced the importance of health planning, collaboration and consultation at all levels with ongoing evaluation and adaptation, which ensure advanced rural nurse-led care is successful, safe and beneficial to rural communities in Australia and New Zealand.
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<th>Description</th>
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<tbody>
<tr>
<td>CINAHL</td>
<td>Cumulative Index to Nursing and Allied Health Literature</td>
</tr>
<tr>
<td>CReMS</td>
<td>Comprehensive Review Management System</td>
</tr>
<tr>
<td>GP</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>JBI</td>
<td>Joanna Briggs Institute</td>
</tr>
<tr>
<td>MASTRI</td>
<td>Meta Analysis of Statistics Assessment and Review Instrument</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>NCNZ</td>
<td>Nursing Council New Zealand</td>
</tr>
<tr>
<td>NMBA</td>
<td>Nursing and Midwifery Board of Australia</td>
</tr>
<tr>
<td>NOTARI</td>
<td>Narrative Opinion and Text Assessment and Review Instrument</td>
</tr>
<tr>
<td>NP</td>
<td>Nurse Practitioner</td>
</tr>
<tr>
<td>NRHA</td>
<td>National Rural Health Alliance</td>
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<tr>
<td>NZ</td>
<td>New Zealand</td>
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<tr>
<td>NZIRH</td>
<td>New Zealand Institute of Rural Health</td>
</tr>
<tr>
<td>NZNO</td>
<td>New Zealand Nurses Organisation</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary Health Care</td>
</tr>
<tr>
<td>PHCNIET</td>
<td>Primary Health Care Nursing Innovation Evaluation Team</td>
</tr>
<tr>
<td>QARI</td>
<td>Qualitative Assessment and Review Instrument</td>
</tr>
<tr>
<td>RN</td>
<td>Registered Nurse</td>
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<tr>
<td>RNS</td>
<td>Rural Nurse Specialist</td>
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<td>SUMARI</td>
<td>System for Unified Management Assessment and Review of Information</td>
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CHAPTER ONE:
INTRODUCTION AND BACKGROUND

Overview.

This chapter provides an overview of the research topic, which is an exploration of advanced rural nursing in the Australian and New Zealand Primary Health Care (PHC) setting. The author’s motive for undertaking this integrative review, the research aims and the current status of advanced rural nursing are also presented.

Introduction.

Nurses have come to play an increasingly important role in the delivery of advanced PHC services in industrialised countries. Additionally the challenges of rising chronic disease burdens and ageing populations coupled with workforce shortages have led to the development of health policies that have seen nurses significantly contributing to rural PHC delivery. The expansion of PHC services is in response to emerging and predicted health needs, and to reduce the burgeoning costs of hospital-based care (Keleher, Parker, Abdulwadud & Francis, 2009).

Given these developments PHC nurses in both rural and urban settings, have responded to the need to improve patient health outcomes by extending their activities in PHC practices. Nurses have been providing services complementary to, or in substitution of, general practitioners (GP), such as nurse-led clinics that incorporate expanded levels of autonomy, skill and decision making. However there is considerable variation in the scopes, titles, roles, levels of responsibility and models of nursing practice. An international priority has emerged to define the parameters of advanced nursing practice in order to recognise the valuable contribution of these nurses (Bryant-Lakosius & DiCenso, 2004; Gardner, Chang & Duffield, 2006; Kelecher et al., 2009; Lowe, Plummer, O’Brien & Boyd, 2011).

Health regulators in Australia and New Zealand accept that a strong PHC system is central to improving the health outcomes of all people, including those in rural and isolated communities (National Health Committee, 2010; Lowe et al, 2011). Advanced rural nursing practice models are recognised as being integral to rural PHC strategy development in both of these countries. The heterogeneous nature of rural health service delivery brings an extensive variance in the type of nursing practice along with differences in the challenges and
opportunities to meet the needs of individual rural communities (Howie, 2008; Kelecher et al., 2009). The relative infancy and similarities in the rural PHC nursing context of Australia and New Zealand provided the platform for the research in this integrative review.

This integrative review will explore the development of advanced rural PHC nursing services in Australia and New Zealand along with the factors influencing the roles progression and implications for the future. It is hoped that the information from this review will aid rural nurses on advancing career pathways and provide members of the rural health care sector with opportunities and insights to further develop rural PHC in these countries.

**Personal Statement.**

Advanced rural nursing is of particular interest to the author who has experienced many developments in the delivery of rural nursing services in New Zealand in the past 12 years. The author relishes the autonomous role of the Rural Nurse Specialist (RNS) in a small New Zealand southern community who have had the tenacity to plan, develop and build a modern community owned rural PHC facility to provide life span health care to the local population.

The impetus for this research was an awareness of the ongoing challenges and opportunities created by advanced nursing roles in rural PHC in New Zealand and it is hoped that the knowledge and confidence gained through this integrative review will enable the author to produce a proposal involving a formalised advanced rural nursing role with a career pathway for a Nurse Practitioner within her local rural PHC setting.

**Integrative Review Aim.**

The primary aim of this integrative review will examine the development of advanced rural nursing in the Australian and New Zealand rural primary health settings. The sub aims are:

- To explore the scope, titles, roles and functions of advanced rural nurses,
- To examine the factors influencing the development of advanced nursing, and the implications for practice, and
- To establish the future progression of advanced rural nursing, and to inform nursing through scholarly research to make recommendations and identify the potential gaps in the research pertaining to the topic.
Integrative Review Structure.

Chapter one provides an introduction for this integrative review. It explores the background in the development of advanced rural nursing in the local and international context. The key terminology, definitions and concepts associated with the topic are identified. Then the potential challenges and opportunities for advanced rural nursing practice are introduced by examining local policy and planning for rural health development. This will highlight the implications, future directions and recommendations for advanced rural nursing.

Chapter two consists of the methodology and the research method. Firstly, the methodology is described and the rationale for choosing this particular methodological approach is presented. Secondly, the research method undertaken is presented and includes the research aims, inclusions and exclusion criteria.

Chapter three presents the search strategy. The themes and categories that emerged from the data analysis are presented and summarised. Chapter four presents the discussion of the research findings, and explains the implications and significance for advanced nursing practice. The strengths and limitations of the research are provided along with recommendations for future directions, including research in the area of advanced rural nursing practice, and finally the concluding statement.

Background.

The background introduces what it means to be rural and the differences between rural and urban nursing. The similarities in the rural nursing context of Australia and New Zealand are presented, along with an exploration of the development of PHC and rural Primary Health Care Nursing (PHCN) practice in these countries as a foundation for this integrative review.

Being Rural in Australia and New Zealand.

Howie (2008) explains that in order to understand how rural nursing practice is shaped, it is essential to build an appreciation of what it means to be rural. Although the geographical boundaries between urban and rural can be measured by “descriptive, dichotomy, typology or indexing methods”, there is no overarching international consensus on how being rural or urban should be determined in health care. There is a perception that perhaps this lack of a conclusive definition could be restricting the development of appropriate health services to rural communities (pg. 14).
The definition of being rural within the health context was examined by comparing two global landmasses, which both have large rural indigenous health populations. Rural nursing in Australia is described as a complex subjective state that consists of influencing factors including the geography, access and egress. The societal constraints caused by isolation both socially and professionally from infrastructure, communications and resources also have a significant bearing on the nature of nursing roles in rural Australia (Council for Remote Area Nurses of Australia, 2012).

Statistics New Zealand (2012) explains that the comparison rural nursing in New Zealand is historically viewed as a sub-specialty of nursing where nurses work in low population areas/communities with less than a thousand people situated long distances from neighbouring towns. Remote areas are rural with minimal dependence on urban areas in terms of employment, or where very small numbers of a population are in paid employment. Statistics NZ explain that the vast majority of the population in NZ lives and works in urban areas, which occupy less that 3% of the land area. Whereas rural areas account for 97% of the land and about 15% of the population (Health Workforce New Zealand, 2009).

Rural life also has its own socio-culture, occupational, ecological and health systems, which are different to those of urban dwellers. The modern view of the socio-cultural aspect of rural society and culture is that rural people are a population of self-reliant and independent people with well-developed attitudes and coping strategies. Rural areas are isolated and are generally not as well-resourced when compared with urban dwellers increasing their sense of self-reliance (Bigbee, 1993; Howie, 2008).

Occupations are different in rural life; a high proportion of employment normally relates to agriculture and primary industry employment such as fishing, forestry and mining with the work quite often being seasonal and cyclical. This type of employment has a higher potential for accident related injuries and deaths, which is an aspect of practice that urban health professionals may not have to contend with (Bidwell, 2001; Bigbee, 1993).

The other occupational problem associated with rural life is high rates of unemployment, particularly for young people, which may have a detrimental effect on social habits (Bidwell, 2001). This can lead to the development of high-risk mental health issues, which is difficult for rural health professionals when trying to treat these specialist type issues in isolated under-serviced areas (Standing Council on Health, 2012).

Rural ecologies are characterised by distance and isolation and the dispersal of the population can have an effect on the availability of services. Well known examples include difficulties accessing communication technology, limited access to public transport, distances
to educational and training facilities, and importantly secondary care medical services (Howie, 2008).

The rural contextual information described above, forms the foundations of a complex set of factors which have shaped the professional development of rural nursing and the natural progression to advanced rural nursing practice. Nurses have been immersed in rural society for many years with feelings of cohesion, support and protection of their local culture, despite the challenges of professional and social isolation (Bigbee, 1993; Howie, 2008).

The similarities of rural nursing in Australia and New Zealand.

Rural nursing in Australia and New Zealand was pioneered in the early 19th century with the concept of outback nursing introduced in 1908 by Lady Dudley, wife of the Governor-General of Australia. The nurse’s roles often combined emergency care, midwifery and public health and the “work demanded creativity, resilience, determination and courage” (pg. 55). Bush nursing centres were established in Australia in 1921 and provided health care to remote population groups and these nurses continue in advanced rural nursing roles today (Wood, 2010).

Rural Women New Zealand (2011) describe in its historical records a group of farming women who experienced hard and isolated lives plagued by illness and loneliness. In 1925 the Women’s Division of the Farmer’s Union was started and it found that one of the prime needs of the rural women of the time was someone to step in when women were ill or had to leave home. Therefore, in 1927 the Women’s Division Emergency Housekeeping Scheme was started, the group advertised for housekeepers willing to do anything and bush nurses with surgical and midwifery certificates.

Nurse-led care has increasingly become the norm in Australia and New Zealand with rural PHC nurses developing increasing levels of autonomy. Their roles often include the frequent responsibility for managing long-term health conditions necessitating the completion of advanced assessments and the treatment of acute patient presentations. Due to the absence of long-term GPs in some isolated area the provision of advanced care, including medications, is authorised under the provision of standing orders (Lowe et al., 2011; Maw, 2005).

While Australia has a larger landmass than New Zealand, both countries include rural and remote areas with diverse terrains and unpredictable weather conditions, including extreme heat and cold across vastly spread regions. Both countries have locations that are often difficult to access where alternative modes of transport, including air rescue and
retrieval, are often called upon to access patients in hard-to-reach locations (Bidwell, 2001; CARPA, 2003; Horner, 2008).

Australia and New Zealand are made up of similar unique indigenous population groups that have shorter life expectancies and higher chronic health care diseases such as cardiovascular disease and diabetes. Rural health nurses are often responsible for the long term and short term health care needs of these people in small rural areas (Anderson, Crenge, Kamaka, Chen, Palafax & Jackson-Pulver, 2006).

The literature appears to suggest that the development of rural nursing shares commonalities in Australia and New Zealand. It is clear that nurse-led care has the potential to contribute to the reduction in health inequalities between social groups in these countries. Enhancement of nursing roles and role clarification could maximise opportunities for a skilled and effective nursing workforce to provide a valuable contribution to rural health care in both these countries (Hoare, Mills & Francis, 2011).

The Trans Tasman Mutual Recognition Act 1997 [TTMRA] recognises Australian and New Zealand registration standards as equal and this includes the nursing profession. Nursing Council New Zealand [NCNZ] and the Nursing and Midwifery Board of Australia [N MBA] are the professional nursing bodies which allow similarly qualified Registered Nurses (RN) and Nurse Practitioners (NP) to apply for authority to practice in each other’s country (Nursing Council New Zealand, 2013). This suggests congruity in nursing scopes and roles in Australia and New Zealand, which affords some confidence when examining the literature for this integrative review.

Advanced rural Primary Health Care Nursing.

Primary Health Care is defined by the World Health Organisation’s Alma Ata Declaration (1978) as quality essential health care based on practical, scientifically sound, culturally appropriate and socially acceptable care. PHC services are universally accessible to people in their own communities and working alongside community groups to provide health improvement and prevention services, generalist first level services including GP and nursing services (MoH, 2001).

The implementation of PHC services is possibly one of the most significant systemic and ideological health reforms in contemporary health practice, which has influenced the development of rural nursing practice. Countries with robust PHC services appear to operate more effectively and equitably, basing the delivery and development of their services in the
social aspects of health care rather than traditional biomedical practice models (Carey, Wakerman, Humphreys, Buykx & Longman, 2013).

Accessibility and affordability have become the most sought after objectives in the delivery of PHC, which is particularly relevant in the delivery of rural and remote health care services in countries such as Australia and New Zealand. Distance and access is one of the major factors influencing the delivery of efficient health services in these countries (Carey et al., 2013). The provision of PHC services in the community has changed with patient populations having access to integrated systems of care that are quick and reliable. Communities are increasingly becoming involved in the governance and decision making for their rural health facilities, which comes with a higher degree of health care expectation from their rural health providers (Bryant-Lukosius et al., 2004).

Opportunities for professional development in nursing have increased together with a reduction in the numbers of doctors. Advanced nursing practice has developed to meet the complex demands of current health care systems (Bryant-Lukosius et al., 2004; Carnwell & Daly, 2003). Rural nursing practice has emerged as a unique specialty of generalist practice with distinguishing characteristics and dynamics that require a discerning type of nurse committed to the provision of high quality and comprehensive nursing care. This health care includes a life span approach to individuals, family, whānau and whole communities. The unique characteristics include a broad generalist approach, with high levels of autonomy, cohesiveness and community visibility. The opportunities for rural nurses are as great as the demands of rural nursing practice (Bigbee, 1993).

Many countries continue to look at ways to improve the efficiency of health care delivery by reviewing the roles and responsibilities of health professionals. Discussions on scopes of practice for nurses often take place in the broader context in an effort to reorganize PHC systems. However, this is problematic because there is no distinct definition of advanced nursing practice that encompasses the wide and expanding variety of nursing practice, which includes rural nursing practice (Delamaire & Lafortune, 2010). When seeking definitions of advanced nursing practice the International Council of Nurses [ICN] provides a generic definition in an attempt to provide clarity:

_A Nurse Practitioner/Advanced Practice Nurse is a registered nurse 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, 2008)._
Australia and New Zealand are not immune to the problems of advanced nursing definitions. The Australian National Nursing and Nursing Education Taskforce Specialisation, 2006 (cited in Elsom, Happell & Manias, 2006) described a confusing “plethora of terms used to describe advanced practice and specialisation” and the terminology included “generalist, specialist, advanced, extended, expanded as well as less commonly used titles such as endorsed, enhanced, amended or maximised” (pg. 56).

Barber (2007) provides a description of advanced rural nursing in the New Zealand context.

* A distinctive way to nurse: rural nurses are specialist-generalist who use insider knowledge of the communities they live/work/study in, combined with advanced clinical skills to provide a nursing service, particular to the unique health needs of their community. Professional and personal roles are interwoven so managing professional/personal boundary issues along this continuum are critical to achieving success in the role (pg. 22).

The scopes, titles, roles and functions of the advanced rural nurse will be examined within this integrative review, as one of the potential factors influencing the progression of advanced rural nursing in Australia and New Zealand.

**The development of rural PHC nursing in Australia and New Zealand.**

The progression of rural nursing in Australia and New Zealand gained momentum around the same time. A key trigger in New Zealand was the Ministerial Taskforce on Nursing (1998) which made recommendations to the Ministry of Health (MoH), leading to the development of advanced nursing practice competencies by NCNZ. This was congruent with the developments in Australia, and was a logical progression in professional development for nurses, which had already been seen in the United States and the United Kingdom where Nurse Practitioner PHC scopes of practice were legitimised (Ministry of Health, 1998).

The next significant development in New Zealand for rural nurses was the release of the Ministry of Health (MoH) Primary Health Care Strategy (2001) which focused on:

- local solutions to health disparities by local people,
- better coordination of health care by health providers,
- wellness focused models of health care, including disease prevention and health maintenance, and
- developing the PHC workforce.
The crucial role of PHC nurses was given specific focus, and was to play an important part in the implementation of the strategy and the role development. This was addressed at national level and new Primary Health Organisations (PHO) were the vehicle to implement the strategy, develop education, provide management and training for practices. PHOs also oversee the allocation of funding to increase patient access to PHC services (Hoare, Mills & Francis, 2011).

In Australia a number of national health reforms have occurred in recent years to promote partnerships between previously fragmented Commonwealth, State and Territory government approaches to health policy. The national PHC strategy was released in 2010 and provided a broad and comprehensive approach to key priority areas in health. The framework recognised that while GPs play a central role in evolving models of PHC practice, other highly skilled health professionals also have an important role to play (Department of Health, Australia, 2013).

A recent response to consultation on the PHC strategy by the Australian Practice Nurses Association (APNA) criticises the lack of attention to the crucial role of nurses in PHC, from government through to service delivery level. Although the field of PHC continues to evolve, there appears to be severe underutilisation of a nursing workforce that is ready and capable to meet the health needs of all populations (APNA, 2012).

Currently both Australia and New Zealand appear to share similar positions regarding advanced rural nursing roles. While health policy clearly exists mapping out the importance of advanced PHC roles, this is developing very slowly. Despite all of the rhetoric regarding the development of PHC nursing in New Zealand, Nurse Practitioner remains the only legitimised advanced scope of nursing practice for rural nurses. MoH anticipated that NPs would bolster rural communities by improving access to, and improving, rural health outcomes, by providing highly skilled autonomous nurse prescribers (Ministry of Health, 2001, 2003, National Health Committee, 2010).

The importance of advanced nursing practice also continues to be recognised in rural PHC in Australia, however there is acknowledgment from government bodies that rural nurses have been operating at advanced levels for many years without any legislative or professional standards. Exacerbating the problem in Australia is the lack of a national approach to credentialing of advanced nursing roles (Lowe et al., 2011).
The current status of rural health policy and planning in relation to nursing in Australia and New Zealand.

Many countries in the industrialised world, including Australia and New Zealand have made rural health care a priority. These efforts have led to the development of rural health policies and organisations with rural health mandates. These groups identify the health care needs of these rural communities and produce guidelines/policies to ensure their needs are successfully met (Ministerial Advisory Council on Rural Health, 2012; MoH, 2001).

The National Strategic Framework for Rural and Remote Health was developed collaboratively between Commonwealth, State and Territory governments in Australia. This was aligned to the national PHC strategy with a focus on providing rural and remote people with timely access to quality and safe health care services. There are several aims within the strategy that acknowledge the importance of the ongoing development of rural nursing, including the development of more advanced roles, and collaborative partnership models of health care (Standing Council of Health; 2012).

The National Rural Health Alliance [NRHA] (1993) was formed in Australia comprising representatives from many rural health and community groups. The NHRA firmly believes in opportunities for rural people to equal health outcomes, and equivalent access to comprehensive health care anywhere in Australia. The group collects and disseminates information used in determining the key issues in rural health and provides recommendations to both government and non-government bodies. In 2005 they prepared a position paper on advancing rural nursing practice in rural areas.

The Rural Health Alliance Aotearoa New Zealand [RHÂNZ] (2012) was formed with similar representative bodies to the Australian NRHA group. The purpose of this alliance was to influence policies affecting the health and wellbeing of rural communities by providing solutions representing a united group of rural sector organizations. The group commenced the development of a rural health strategy in 2013, with four main priorities:

- focusing on the improvements to the health status of rural communities,
- access to funding for equitable health care,
- access to an appropriate workforce and
- advocacy for the sustainability of rural health care (RHÂNZ, 2014).
In New Zealand the National Health Committee [NHC] (2010) presented a report outlining the challenges for health services in rural communities, and provided recommendations to improve the health of rural communities. The report recognised the diversity of rural New Zealand and the need for diverse health care models in order to sustain rural health.

The NHC (2010) advised central government that it needed to foster an environment that would encourage creativity and sustain the self-determination of rural people. It was observed that many rural communities are developing new rural health care models, which intensively utilise the skill of nurses through nurse-led clinics and nursing outreach teams in a cost-effective and sustainable manner to improve population health.

Rural health workforce data forecasts have been produced in Australia and New Zealand, identifying a key issue in regard to the long term sustainability of the rural workforce. Health Workforce New Zealand (2009) and Health Workforce Australia (2013) forecasted an ageing health workforce and predicted a shortage of rural nurses in the years to come. These forecasts recommend the development of workforce reforms to better utilise highly skilled nursing staff. This would provide a more effective, efficient and accessible health care service.

The future of advanced rural PHC nursing practice.

Because many countries are at different stages in implementing advanced nursing roles, there is immense variability in the stages of development and recognition of the challenges and opportunities created by the advanced nursing roles. There are a number of generic barriers and facilitators to the development of ANP roles, which are inclusive of the rural context (Delamente & Lafortune, 2010).

Four factors were identified in an international working paper:

- the inclusion of professional interests of doctors and nurses and the influence these groups bring to the reform process,
- the organization of health care systems and the associated funding mechanisms,
- the impact of legislation and the regulation of health professional activities in the development of new roles and
- the capacity of the educational and training systems to provide nurses with a higher level of skill and competence (Delamente & Lafortune, 2010)
Ross (2008) suggests that the many aspects of rural nursing have been revealed in the last decade, leading to a much better understanding of what influences rural nursing practice. This includes legislation, policy development, education and consumer interest. In a time of immense change in the primary health care climate, rural nurses have been stimulated to lead the way, through professional development, education and research, to develop innovative models of rural practice (pg. xvii).

Chapter Summary.

This chapter has provided an overview of the research topic and the aims of this integrative review. The literature revealed that advanced rural PHC nursing roles have evolved in response to the international and national need to address the complex and dynamic rural health care system and to meet the demand for flexibility in health service delivery in rural regions. There has been a shift in focus to more rural PHC services, with rural nurses in both Australia and New Zealand similarly positioned to provide dynamic and competent advanced rural nursing care.
CHAPTER TWO:
METHODOLOGY AND RESEARCH METHODS.

This chapter presents the methodology and research method undertaken for this integrative review. Firstly, the rationale underpinning the selection of an integrative review as the methodology is discussed. This is followed by a description of the stages of the research method undertaken.

Methodology.

Registered nurses are expected to participate in disseminating and utilising research to incorporate evidenced based nursing practice to ensure best practice outcomes for their clients (NCNZ, 2007). This has increased the need for the production of all types of literature reviews. Over time this proliferation of research has contributed to more systematic and rigorous methods of review (Jirojwong, Johnson & Welch, 2011; Whittemore & Knafl, 2005).

In the last decade much has been learnt with regard to nursing research methodologies to enable the connection of disparate studies into integrated findings and conclusions. Systematic reviews and meta-analyses are two such approaches to research that while important to evidence-based practice, have been subject to criticism because they mainly focus on quantitative research. Many important aspects of interest in nursing fall outside the scope of quantitative research. Research questions that are not as a result of cause and effect responses are not amenable to this form of systematic research methodology (Taylor, Kermode & Roberts, 2006).

The integrative review method is an approach that allows for the inclusion of diverse methodologies of both an experimental and non-experimental nature, which facilitates a full understanding of the topic being reviewed. The broad literature sample enabled by an integrative review provides a consistent and comprehensive panorama of complex health concepts, theories or problems that are relevant to nursing (De Souza, Da Silva & De Carvalho, 2010). There appears to be congruency in the current literature supporting the integrative review process as a reliable methodological approach, which has the potential to influence evidence-based nursing (Polit & Beck, 2006; Randolph, 2009; Torraco, 2005; Whittemore & Knafl, 2005). Therefore, this methodological approach was selected for this dissertation.
The Integrative Review Process

Whittemore and Knafl (2005) describe the following five-stage process to enhance the methodological rigor, and decrease the potential for error and bias in the integrative review process. This five-step process was subsequently undertaken.

1. The **problem identification stage** was the initial phase where clear identification of the problem was addressed and the purpose and scope of the review was established.

2. The **literature search stage**, which describes the keywords, search terms, databases accessed, additional retrieval strategies and the inclusion and exclusion criteria used.

3. The **data evaluation stage** was conducted using standardised Joanna Briggs Institute (JBI) (2011) quality tools. These tools allowed the inclusion of multiple data sources, including qualitative, quantitative and expert opinion, essential to integrative reviews. All selected literature was critically appraised using the critical appraisal tools from the System for Unified Management, Assessment and Review of Information (SUMARI), the Comprehensive Review Management System (CReMS), the JBI-Qualitative Assessment and Review Instrument (QARI), JBI-Meta Analysis of Statistics Assessment and Review Instrument (MASrI) and JBI-Narrative, Opinion and Text Assessment and Review Instrument (NOTARI).

The **data extraction stage**. JBI (2011) suggests using templates to ensure a rigorous and robust approach to data extraction. The key data was extracted utilising the relevant JBI (2011) quantitative, qualitative, and text-opinion templates.

4. The **data analysis stage**. A general inductive approach was taken to analysis the extracted data. Thomas (2003) describes this method as an efficient method for analyzing data, which allows research findings to emerge from frequent, dominant and significant themes in raw data without the restraints of some other more structured methodologies.

5. The **presentation stage**. Thomas' (2003) inductive thematic code analysis development process was used to present the integrated synthesised findings in an easily understood narrative format.
Research Method.

Research Aim.

The primary aim of this integrative review was to examine the development of advanced rural nursing in the Australian and New Zealand rural primary health settings. The sub aims were to:

- Explore the scope, titles, roles and functions of advanced rural nurses,
- Examine the factors influencing the development of advanced nursing, and the implications for practice, and
- Establish the future progression of advanced rural nursing, and to inform nursing through scholarly research to make recommendations and identify the potential gaps in the research pertaining to the topic.

Inclusion and Exclusion Criteria.

Inclusion criteria:

- Australian and New Zealand rural advanced PHC nursing roles.
- Articles published in English between 1996-2014.
- Articles published in English only publications.

Exclusion criteria:

- Articles that failed to meet the JBI (2011) quality appraisal tool 70% cut off rate.
- Articles that failed to have the required advanced rural PHC nursing focus.

Ethical Approval.

Integrative reviews do not involve human participants therefore ethics approval was not required. The author did however endeavour to analyse and present the literature with integrity and in an ethical manner.
CHAPTER THREE:
RESULTS

This chapter presents the search strategy and the articles that were appraised for inclusion in this integrative review. This is followed by a description of the data extraction process resulting in the generation of themes and categories using Thomas’ (2003) general inductive approach. A narrative presentation of the results is also made.

Search Strategy

It became clear in the early stages of the review that the search dates needed to include literature from 1996 to 2014. This would provide a broad and accurate timeline for the interpretation of the data and to capture as many relevant articles, research studies, and discussion papers as possible from the development of advanced rural PHC nursing practice in Australia and New Zealand. The aim of the search strategy was to be broad and comprehensive ensuring the inclusion and exploration of a wide range of current literature including quantitative, qualitative, text and expert opinion that met the research inclusion criteria. To achieve this, the literature search was conducted in a number of steps.

The first step was a brief search of the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and OVID Medline databases to identify specific search terms. This identified the common language and a number of potential keywords that were then discussed with an expert research librarian at the Canterbury Medical Library. The search of CINAHL via EBSCO was undertaken with the librarian and replicated as closely as possible in all the other search engines by the researcher over a period of several weeks.

The initial keywords utilised were advanced practice nurse, rural health nurse, rural nurse specialist, remote nurse, outback nurse, and primary health care, primary health care nurse, Australia, New Zealand. Truncation and Boolean search tools AND and OR were used to expand and focus the search. Large numbers of articles were yielded when terms were searched individually; however, when search terms were refined using Truncations and Boolean tools, and the subset groups of keyword were put together, a manageable group of quality data was found.

The subsets consisted of the following groups: Advanced practice nurse; advanced nursing practice combined with rural health nursing; rural health nurse; rural nursing practice The second group was rural nurse specialist; advanced rural nurse; remote nurse specialist;
outback nurse specialist. The third group was primary health care; and the fourth subset was related to geography: Australia; New Zealand; Zealand. Finally all the subsets were combined producing the final group of articles for review. Many of the articles were found in multiple search engines.

The search yielded a total of 93 articles; once repeat articles were removed, a total of 49 articles remained. The abstracts of the articles were then carefully reviewed to determine whether the article included information on the development of the advanced rural PHC nursing role in Australia and New Zealand and/or identified with the sub aims of this review.

Through reviewing the abstracts, 21 articles were excluded due to the lack of focus on the research aim. The remaining 28 articles were thoroughly reviewed against the research aim and sub aims to ensure they meet the inclusion criteria. A further four articles were removed at this stage because they did not meet the inclusion criteria. Reference lists of these 24 articles were manually reviewed to identify any other relevant additional literature of relevance to this integrative review. No further articles were found resulting in 24 articles included in this review as summarised in Figure 1.
Figure 1 – Literature Search
Quality of the Literature.

The critical appraisal of the literature was conducted in accordance with the JBI (2011) tools to provide a consistent and validated framework for the assessment of methodological quality. Twenty-eight articles were assessed according to the corresponding JBI SUMARI tools. Literature that met the study’s inclusion criteria was appraised firstly by the researcher and then independently by the one of the researcher’s two academic supervisors for methodological validity prior to inclusion in the review. Any discrepancies in the outcome of the assessment were discussed by the two parties with a consensus.

Four articles were excluded at this point as it was decided that these articles did not meet the inclusion criteria and failed to reach the 70% threshold for inclusion in the review. If both parties had not reached agreement on the quality of the data, a third independent reviewer would have appraised the literature. In summary all critically appraised articles met the 70% inclusion threshold; however four articles were excluded due to lack of relevance to the research aim, these are presented in Appendix C. A total of twenty-four articles were included, consisting of seven descriptive/case series studies, one qualitative study and sixteen narrative, opinion and text articles. A summary of the critically appraised literature is included in the key findings table located in Appendix B.

Data Analysis

Data analysis is an essential component of the integrative review and if adhered to it includes a thorough and unbiased interpretation of the primary data, along with an original synthesis of the evidence (Polit & Beck, 2006; Whittemore & KnafI, 2005). Thomas’ (2003) general inductive approach was used for the data analysis. This method allowed research themes pertaining to advanced rural PHC nursing roles in Australia and New Zealand to emerge from the raw data, as a result of the coding process described below, without the restraints of some other more structured methodologies.
The five step Coding Process in Inductive Analysis.

1. **Preparation of the raw data.** This involved preparing the data into a common format. Each piece of literature was copied three times to allow for numerous coding, with one copy kept as an untouched master guide.

2. **Close reading of the text.** The research aims ‘including key words, phrases and concepts pertaining to advanced rural PHC nursing in Australia and New Zealand’ were examined to identify emerging patterns and themes. Each piece of literature was thoroughly read and reread to increase the familiarity with its content. Data of interest was placed into an electronic computerised table and was highlighted with different colours to readily identify the different emerging themes such as advanced nursing scopes, titles, roles and functions, identified nursing practice challenges and future planning with corresponding notes also made.

3. **Creation of themes.** The identification and definition of themes and categories occurred at this stage. In some instances the previously color-coded individual pieces of text were placed in more than one theme. At this stage of the coding process the author and the academic supervisors then met to discuss the coding process to ensure this process was unbiased, resulting in the development of fifteen categories and three themes.

4. **Overlapping coding and uncoded text.** There are two commonly assumed rules in qualitative coding which occurred during the coding of the data in this review (1) that one segment of text may be coded into more than one theme and (2) a considerable amount of text may not be coded to a theme, and may not be relevant to the research aim (Thomas, 2003). This occurred during the coding of the data in this review. Subsequently the segments of text that were coded into more than one theme or that did not appear to be relevant to the research aim were discussed by the researcher and the two academic supervisors, and refined resulting in fifteen categories being reduced to nine and the three main themes.

5. **Continuing revision and refinement of category system.** Each theme was examined, with specific attention to identifying themes and categories with contradictory viewpoints. The themes were not further reduced and the core themes representing the essence of each category were agreed upon by the researcher and the two academic supervisors for the discussion.
As Thomas (2003) suggests the identified themes resulting from the coding process contained five key features:

1. Label for the category – words or phrases from the literature that were commonly referred to were identified from the highlighted groups of text to form the categories.

2. Description of category – once the author initially established the categories a discussion was had with the academic supervisors to clearly define each of the identified categories.

3. Text or data associated with a category – the previously highlighted examples of text were then coded into a category.

4. Links – some pieces of text had links to more than one theme or category that was presented in the discussion chapter of the review.

5. Type of model in which a category is embedded – the category may be integrated into a model, framework or theme. Such frameworks may include an open network – no sequence; a temporal sequence; or a causal network – one category causes changes in another.

**Table 1 – The Coding Process for Inductive Analysis.**

<table>
<thead>
<tr>
<th>The Coding Process for Inductive Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial read through text data</td>
</tr>
<tr>
<td>Identify specific segments of information</td>
</tr>
<tr>
<td>Label the segment of information to create categories</td>
</tr>
<tr>
<td>Reduce overlap and redundancy among the categories</td>
</tr>
<tr>
<td>Create a model incorporating most important categories</td>
</tr>
<tr>
<td>Many pages of text</td>
</tr>
</tbody>
</table>

21
Synthesis of Themes.

Three themes and nine categories were identified as a result of the inductive coding process that were scrutinised by the secondary reviewers to ensure that they represented a rigorous and unbiased interpretation of the literature. This would limit the risk of the results being shaped by the assumptions and experiences of the author. Valuable dialogue between the author and secondary reviewers (academic supervisors) ensured that resulted in the confirmation of the themes. A brief summary of the themes and categories provided in Table Two along with a summary of authors representing each main theme in Table Three.

Themes.

Theme one:

- The development of advanced rural PHC nursing roles in Australia and New Zealand.
  This theme consisted of two categories.
  1. Nomenclature in the titles and scopes of practice of the advanced rural PHC nurse.
  2. Roles and functions of the advanced rural PHC nurse.

Theme two:

- The factors influencing the development of advanced rural PHC nursing roles in Australia and New Zealand.
  This theme consisted of five categories.
  1. Rural communities’ need for a sustainable health service.
  2. The rural health workforce.
  3. Education and career development.
  4. The need for support systems.
  5. Funding and Purchasing.

Theme three:

- The future of advanced rural PHC nursing in Australia and New Zealand.
  This theme consisted of two categories.
  1. Innovation in advanced rural nursing.
  2. Contemporary models of rural PHC.
<table>
<thead>
<tr>
<th>Themes</th>
<th>Title &amp; Description</th>
<th>Categories</th>
<th>Number of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme One</strong></td>
<td>The Development of advanced PHC nursing roles in Australia and New Zealand.</td>
<td>Nomenclature in the titles and scopes of practice of the advanced nurse.</td>
<td>n = 14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roles and functions of the advanced rural practice nurse</td>
<td>n = 18</td>
</tr>
<tr>
<td><strong>Theme Two</strong></td>
<td>The factors influencing the development of advanced rural PHC nursing in Australia and New Zealand.</td>
<td>Rural communities’ need for a sustainable health service</td>
<td>n = 18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The rural health workforce</td>
<td>n = 18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Education and career development.</td>
<td>n = 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The need for support systems</td>
<td>n = 14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Funding and Purchasing</td>
<td>n = 16</td>
</tr>
<tr>
<td><strong>Theme Three</strong></td>
<td>The future of advanced rural PHC nursing in Australia and New Zealand.</td>
<td>Innovation in advanced rural nursing</td>
<td>n = 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contemporary models of rural PHC</td>
<td>n = 13</td>
</tr>
</tbody>
</table>
Table 3 - Representation of theme identified within each article

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Theme One</th>
<th>Theme Two</th>
<th>Theme Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adair, Coster, &amp; Adair</td>
<td>2012</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bradley &amp; McLean</td>
<td>1999</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cant, Birks, Porter, Jacobs &amp; Cooper</td>
<td>2011</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Carryer, Boddy &amp; Budge</td>
<td>2011</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Connor, Nelson &amp; Maisey</td>
<td>2009</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Duckett</td>
<td>2005</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Francis &amp; Mills</td>
<td>2011</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Goodyear-Smith &amp; Janes</td>
<td>2006</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Goodyear-Smith &amp; Janes</td>
<td>2008</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hegney</td>
<td>1996</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hegney, McCarthy &amp; Pearson</td>
<td>1999</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Keyzer</td>
<td>1997</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lancaster</td>
<td>2011</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>London</td>
<td>2002</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>London</td>
<td>2004</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mills, Birks &amp; Hegney</td>
<td>2010</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>National Rural Health Alliance</td>
<td>2005</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nelson, Wright, Connor, Buckley &amp; Cumming</td>
<td>2009</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>New Zealand Institute Rural Health</td>
<td>2008</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>O’Malley, Lawry, Barber &amp; Fearnley</td>
<td>2009</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PHC Nursing Innovation Evaluation Team</td>
<td>2011</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ross</td>
<td>2001</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ross</td>
<td>1999</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Timmings</td>
<td>2006</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
Theme One: The development of advanced rural nursing roles in Australia and New Zealand.

The theme consisted of two categories to assist the reporting of the results. Nomenclature in the titles and scopes of practice of the advanced rural PHC nurse and roles and functions of the advanced rural PHC nurse.

Category one: Nomenclature in the titles and scopes of practice of the advanced rural PHC nurse.

Fourteen of the twenty-four articles identified nomenclature in the titles and scopes of practice for advanced rural PHC nurses in Australia and New Zealand. The titles for RN practice identified in rural New Zealand included rural area nurse, Rural Nurse Specialist (RNS) and Nurse Practitioners (Adair, Coster & Adair, 2012). However the term rural area nurse was not consistent with other literature that more commonly uses the term rural PHC nurse (Goodyear-Smith & Janes, 2006; O’Malley et al., 2009). RNS are the minority of advanced PHC nurses in New Zealand, and the only group that can be found with a title and job description apart from NP’s (Adair et al., 2012).

The Australian literature presented titles including rural and remote nurses and bush nurses and while bush-nursing models have been in place for many years, advanced nursing practice has not generally been formally recognised or titled as such (Bradley & McLean, 1999; Cant et al; 2011; Hegney, 1996; Mills, Birks & Hegney, 2010; NRHA, 2005).

Rural nursing can be viewed as a specialty area of nursing practice that lacks legitimisation and regulation from nursing bodies and also potentially lacks the critical systems required to protect both nurses’ professional boundaries and the safety of communities they work in (Cant et al., 2011; Nelson, Wright, Connor, Buckley & Cumming 2009; O’Malley et al., 2009; Ross, 1999). Many nurses are working in self-titled specialist roles, which employers do not recognise (Hegney, 1996).

The results identified that many rural nurses are working well beyond what is considered the conventional RN scope of nursing practice. (Hegney, 1996; Ross, 1999). This is in response to the increasingly complex nature of PHC services particularly in rural areas, in response to community needs and workforce demands (Bradley & McLean, 1999; Cant, Birks, Porter, Jacobs & Cooper, 2011; London, 2002).

Keyzer (1997) explored advanced nursing and found that there is little consensus on what defines the scope and role of these nurses, who are able to work beyond basic nursing care to function autonomously and collaboratively with GPs at a higher level of nursing practice. The current nursing legislation surrounding advanced nursing role boundaries for
rural nurses is unclear with many rural nurses performing in different ways to their similarly titled urban counterparts in hospital based advanced nursing roles. Rural nurses are not often afforded the on-site back up of doctors and other allied health professional support.

The results show an immense variability in the scopes of practice when compared with levels of experience, skill set and educational standards for advanced rural nurses. Some rural nurses have many years of clinical experience and multiple skill sets, along with postgraduate education, whereas others have little experience and no formal education. There is agreement in the literature that a Master degree is the required standard of postgraduate education for advanced nursing practice (Connor, Nelson & Maisey, 2009; Hegney, 1996; Hegney, McCarthy & Pearson, 1999; O’Malley, Lawry, Barber & Fearnley, 2009; PHCNIET, 2011; Ross, 1999).

Rural workforce studies undertaken in New Zealand identify that GPs are the most studied group of health professionals in the rural sector and there is an acknowledged lack of workforce data pertaining to other key workforce groups such as rural PHC nurses (Goodyear-Smith & Janes, 2006; London, 2002). Some basic data has been collected that indicates nurses are taking on more extended nursing practice roles doing tasks that have been traditionally performed by GPs. There has also been a significant increase in nurse-led care and after-hours on call roles for rural PHC nurses (Goodyear-Smith & Janes, 2006; London, 2002; O’Malley et al., 2009; Ross, 1999).

The Australian literature identified one endorsed advanced nursing scope of practice in Queensland, which is positioned between the RN and NP scope of practice. This scope was endorsed in 2001 allowing RNs in isolated practice areas to administer and supply some medications without medical officers’ orders, to outpatients who presented for assessment and treatment. The Rural and Isolated Practice Registered Nurse (RIPRN) endorsement still remains firmly entrenched in Queensland Health and is currently being considered by other states in Australia (Hegney et al., 1999; Timmings, 2006).

Rural nursing can be viewed as a specialty area of nursing practice which lacks legitimisation and regulation from nursing bodies and also lacks the critical systems required to protect both nurses’ professional boundaries and the safety of communities they work in (Cant et al., 2011; Nelson, Wright, Connor, Buckley & Cumming 2009; O’Malley et al., 2009; Ross, 1999).
Category two: Roles and functions of the advanced rural PHC nurse.

The second category that emerged relates to the roles and functions of the advanced rural PHC nurse in Australia and New Zealand. Eighteen of the twenty-four articles used common terminology to describe advanced rural nurses in PHC practice.

The Rural Practice Nurse Skills Project (1996) was undertaken to identify the roles and challenges of rural nursing in New Zealand. The project found that professional nursing boundaries were obscure, and that rural nurses were fulfilling a variety of advanced nursing roles throughout the country without any nationally described scope or role boundaries (Ross, 2001). The Rural Nurses Survey (2007) in New Zealand aimed to develop a nationally recognised definition of the rural nurse. The nurses in the survey most closely identified with the description of being specialist-generalist with advanced clinical skills (O’Malley et al., 2009).

A focused survey of postgraduate advanced rural PHC nurses was undertaken in New Zealand in 2011 which found that the nurses came from a wide range of roles within the rural sector, from practice nurses to RNS roles, with a diversity of settings from hospitals to Maori health clinics. A wide range of skills and experience was also highlighted with extensive variations in role descriptions. Many of the nurses noted they worked in isolation, but no comment was made on whether rural nurses found this problematic or not (Lancaster, 2011).

The annual rural workforce surveys undertaken between 2000 and 2006 in New Zealand did not have a specific nursing focus but highlight some common findings in relation to rural nursing roles and functions. There is increasingly a greater ratio of nurses to GPs in the rural PHC workforce indicating nurses are taking on roles that were traditionally performed by doctors. Rural nurses were filling up to twenty-eight per cent of the after-hours on-call workload and forty-five per cent of nurses saw patients independently in nurse-led clinics (Goodyear-Smith & Janes, 2006; London, 2002).

Adair et al. (2012) identified that RNS provide a broad range of functions including patient assessment, diagnosis and treatment in collaboration with GPs or understanding order policies. The RNS schedules and runs nurse-led clinics, health promotion activities and maintains a drug formulary for the emergency supply of medications (pg. 22). Health Reporoa instigated advanced nurse-led PHC practice describing the role and function of these nurses in three main thrusts that included health assessment and diagnosis, triage and treatment of minor injuries and conditions and health promotion and prevention (Connor et al., 2009).

In the Australian literature rural nurses are often described as multi-skilled and practicing in extended roles doing tasks that were traditionally the domain of doctors (Hegney, 1996). Rural nurses, as generalists work in a diverse range of settings covering a broad scope
including health prevention, intervention, and rehabilitation across the lifespan (Francis & Mills, 2011). Hegney et al. (1999) analysed the activities of rural nurses from a national audit of the role and functions of the rural nurse finding that the context and size of rural practices influenced the functions of the nurse. Advanced practice roles including physical assessments and diagnosis are necessitated by the lack of allied health professionals in Australia.

Bradley and McLean (1999) presented evidence that bush nurses’ work in advanced nurse-led roles providing triage and initial assessments, with the findings relayed to consulting (distance) GPs for discussion and selection of appropriate treatments. Bush nurses also led health promotion and disease prevention activities in their communities. The NRHA (2005) currently describes the roles of advanced PHC nurses as diverse, with nurses often living and working in isolation providing first point of contact care for a range of PHC functions. Their nursing practice is comprehensive, holistic and collaborative with a lifespan focus when patients are both sick and well.

**Theme two: The factors influencing the development of the advanced rural nurse in Australia and New Zealand.**

Five clear categories emerged from the literature including: rural communities’ need for a sustainable health service, the rural health workforce, education and career development, the need for support systems and funding and purchasing.

**Category one: Rural communities need for a sustainable health service.**

Eighteen of the twenty-four articles identified rural communities’ need for a sustainable health service. The PHC strategies in both Australia and New Zealand have placed an emphasis on population-based health care with community involvement in decision making for accessible, affordable and appropriate care (Goodyear-Smith & Janes, 2005; Nelson et al., 2009; NHRA, 2005). The impetus for alternative models of rural PHC has strengthened communities’ expectations to be provided with high quality first response and PHC services (Keyzer, 1997; NZIRH, 2008; PHCNIET, 2011). Litchfield’s (2002) research considered the different perspectives of success in the delivery of rural health care in New Zealand. Community representatives measure success by the provision of the broadest possible health care that considered local conditions and local needs (Adair et al., 2012).

The development of advanced rural nursing has been influenced by rural communities’ drive and demand for health care services along with an acceptance of the value of advanced nursing roles. Rural communities increasingly expect advanced nurses to provide complex
health services in the absence of other health professionals (Hegney, 1996; London, 2002; Mills, Birks, & Hegney, 2010; O’Malley et al., 2009; Ross, 2001).

The findings of research in both Australia and New Zealand show that both rural nurses and community groups have a mutual appreciation of the high quality care that is afforded by advanced rural nursing practice, in the absence of full-time on site general practitioners. Rural nurses view the support of their local community as a motivating factor when progressing on advanced nursing pathways (Carryer, Boddy & Budge, 2011).

Lancaster (2011) reported that rural PHC nurses felt that advanced nursing skills improved client health outcomes and empowered clients to self-manage their care avoiding the need for hospital admissions and this had a positive impact on nurse-client-community relationships and economic outcomes in rural health care (pg. 3). Community stakeholders in Reporoa, New Zealand commented positively on the development of advanced nurse-led clinics, with accessible and affordable care improving health outcomes (Conner et al., 2009).

**Category two: The rural health workforce.**

Eighteen of the twenty-four articles identified significant issues with the rural health workforce in both Australia and New Zealand. The literature for this review clearly identified a shortage of rural GPs, workforce data and anecdote has shown this (Adair et al., 2012; Bradley & McLean, 1999; Goodyear-Smith & Janes, 2006; London, 2002; NRHA, 2005). The literature also clearly shows that rural PHC nurses are taking on more advanced roles and skills in substitution of GPs in rural areas where there is no permanent doctor (Bradley & McLean, 1999; Lancaster, 2011; Mills et al., 2010).

There are two workforce problems that have the potential to influence how advanced rural PHC nursing will progress in Australia and New Zealand. Firstly the rural nursing workforce is ageing. The Australian Institute of Health and Welfare (2009) found that the average age of rural nurses was over forty years old, which was much higher than their urban counterparts (Francis & Mills, 2011).

In New Zealand the Rural Health Workforce Survey (2005) recorded that the majority of rural PHC nurses were over the age of forty (Goodyear-Smith & Janes, 2006). Two years later the Rural Nursing Survey (2007) again reported that most of the nurses are over the age of forty years old and within the next twenty years the majority of these nurses will be retired unless these gaps are filled in the meantime (O’Malley et al., 2009). This survey highlighted that this group of rural nurses were tired of the hours, and demands of their work and desired a decrease in their hours of work. Another concern of note was the perceived lack of succession planning to replace rural nurses in their advanced roles (pg. 20). Duckett (2005)
highlighted that national reviews done in Australia also recognise significant problems with nursing workforce future planning.

The other significant rural nursing workforce issue that naturally progresses from the issue of ageing workforce is the identified lack of recruitment and retention strategies to attract nurses into rural PHC practice in order to further develop and sustain the advanced rural nursing workforce. There are concerns that rural nursing is perceived as a career backwater (Bradley & McLean, 1999; O’Malley et al., 2009; NRHA, 2005).

**Category three: Education and career development.**

Twenty of the twenty-four articles identified variable educational preparedness of rural nurses in Australia and New Zealand. The literature explained that rural nurses in advanced roles usually receive their undergraduate education in urban areas, and rural skills and experience are traditionally gained on the job (Hegney, 1999). There is now growing recognition that rural nurses must be well prepared to be flexible, multi-skilled, lateral thinkers, with a high degree of competency and self-confidence to deal with a wide variety of patient presentations (Bradley & McLean, 1999; NRHA, 2005; O’Malley et al., 2009).

The literature shows that the governments in both countries are beginning to recognising the need to fund more undergraduate rural nursing placements in order to prepare them for employment in the rural sector. Bradley & McLean (1999) described a rural immersion programme developed for undergraduate nurses to encourage rural nursing career pathways at the Flinders University of Adelaide. The West Coast District Health Board in New Zealand indicated the desire for more rural clinical placements and long distance learning for local students, which triggered a pilot blended programme in Christchurch in 2009 (O’Malley et al., 2009).

The results of the literature review also identify the requirement for comprehensive postgraduate education as well as clinical experience, to develop the required competency to use sound clinical judgment and critical thinking skills to provide defensible and efficacious care to rural communities (Hegney, 1996; NHRA, 2005; O’Malley et al., 2005; Ross, 1999).

The development of postgraduate education for rural nurses in New Zealand started after the utilisation of research findings, which indicated the desire by rural nurses for education to specifically develop advanced nursing roles. A postgraduate course was approved and commenced in 1998 at the University of Otago in NZ (Ross, 2001). However, although this course is no longer being offered a similar postgraduate diploma in health science –rural nursing course is currently offered by the Centre for Postgraduate Nursing Studies, University of Otago, Christchurch, aimed at advanced rural PHC nurses.
A difficulty identified for advanced rural nurses aside from the attainment of appropriate postgraduate education is the maintenance of their advanced skill sets. The rural nursing survey (2007) in New Zealand highlighted this risk of skill decay and the resultant implications for patient care and effective advanced nursing practice. Rural nurses may have difficulty retaining skill proficiency when there are typically low volumes of very broad presentations for specific conditions or medical problems. While there is funding available for postgraduate education, the distance and costs associated with short courses to maintain skills is prohibitive to many rural nurses. They fear professional stagnation due to their ongoing rural isolation and these same concerns have been highlighted by the NRHA in the Australia (NRHA, 2005; O’Malley et al., 2009).

A clear lack of career clinical pathways for rural nurses was also identified in the literature. A rural health professional pathway was presented and it was hoped that this would provide undergraduate nursing students with the appetite for rural nursing practice career pathways right from the formative undergraduate years, through to NP endorsement with the rural PCH focus (O’Malley et al., 2009). Many structural barriers are identified in the process of career pathway development for advanced rural nursing practice from the health sector (Cant et al., 2011; Nelson, 2011).

**Category four: The need for support systems.**

Fourteen of the twenty-four articles identified the need for support systems as a factor influencing the progression of advanced rural FHC nurses. Rural nurses often reported in the literature that they feel both professionally and socially isolated in rural areas with a perceived lack of support in their roles (Duckett, 2005; Mills et al., 2010; NRHA, 2005; O’Malley et al., 2009; Ross 2001). The value of peer support appears to be underestimated by employers and factors such as time constraints, lack of staff replacements, funding, and geographical distances to other professional health groups are identified as barriers to peer support networks (Francis & Mills, 2011; Hegney, 1996; Lancaster, 2011).

The New Zealand Rural Nurses Survey (2007) confirmed that a perceived lack of support is an issue for rural nurses in several ways including limited peer contact, the lack of onsite clinical back up; the lack of funding for appropriate peer support; a lack of concern from the communities the nurses work for and finally the lack of legislative and regulatory endorsement for advanced levels of practice (O’Malley et al., 2009). The NRHA describes the same level of concern for advanced rural nurses in Australia (NHRA, 2005, p. 13).

Recommendations have been made in both Australia and New Zealand regarding the need for support systems for rural nurses in advanced practice roles. These recommendations
include adequate funding to provide fair remuneration, clinical supervision and distance support facilities for rural nurses (NRHA, 2005; O’Malley et al., 2009).

**Category five: Funding and purchasing.**

Sixteen of the twenty-four articles identified funding and purchasing issues. Advanced rural PHC nurses in Australia and New Zealand perceive that the remuneration for their roles is inadequate (Hegney, 1996; Mills et al., 2010). The concerns identified by rural nurses in New Zealand include the lack of adequate remuneration for their nursing services, on-call allowances and funding support for continuing postgraduate education (Carreyer et al., 2011; O’Malley et al., 2009; Ross, 2001).

The literature portrays a range of financial initiatives and support programs that have been put in place in the last decade in an attempt to develop more effective models of rural PHC that incorporate advanced nursing practice roles (Connor et al., 2010; Nelson et al., 2009; NRHA, 2005; O’Malley et al., 2009; PHCNIET, 2011). However, both the Australian and New Zealand literature shows a fragmented approach to funding and employment arrangements for nurses employed in advanced roles (Bradley & McLean, 1999; NHRA, 2005; O’Malley et al., 2009). Funding barriers were identified as an issue in rural PHC that detracts from the value that advanced nurses bring to health care (Carreyer et al., 2001; Francis & Mills, 2009).

**Theme Three: The future of advanced rural PHC nursing in Australia and New Zealand.**

Two categories were identified regarding the future of advanced rural nursing. Category one: Innovation in advanced rural nursing. Category two: Contemporary models of rural PHC practice.

**Category one: Innovation in advanced rural nursing.**

Twelve of the twenty-four articles presented evidence of national rural policies in Australia and New Zealand that recognises the heavy reliance on advanced rural nurses to provide extensive health care services to rural communities. The governments have sought innovative ways of providing services and projects have been undertaken to examine new ways of working with the skills of advanced nurses (Adair et al., 2012; Carreyer et al., 2011; London, 2002; NRHA, 2005; O’Malley et al., 2009).
In Australia the Practice Models Project (1998) was established in Victoria, this was of benefit to advanced rural nurses because it identified nurses as innovators in the provision of nurse-led rural services and the project provided the impetus for the further development of new rural PHC models incorporating advanced nursing services (NRHA, 2005). The Victorian Nurse Practitioner Task Force (1998) evaluated NP demonstration projects and reported to the Minister of Health. It recommended legislative changes to formalise NP roles and these changes, which occurred the following year (Bradley & McLean, 1999). Another advanced nursing innovation that has been previously discussed RIPRN endorsement in Queensland in 1996 (Mills et al., 2010; Timming, 2006).

In New Zealand, the Ministry of Health introduced the PHC Strategy (2001) that instigated the drive to further development of advanced rural nursing. An Expert Advisory Group for Primary Health Care Nursing was appointed by the MoH in 2002 that developed a framework to activate primary health care nursing. The MoH then purchased eleven PHC nursing innovation projects in 2003, which were funded over a three-year period; these projects were subsequently reported on by the PHC nursing innovation evaluation team in 2007 (Connor et al., 2010; Nelson et al., 2009; PHCNIET, 2007).

**Category two: Contemporary models of rural PHC.**

Thirteen of the twenty-four articles identified rural health strategies and policy reforms to improve the health outcomes of rural populations in Australia and New Zealand.

Rural models of health care are changing in New Zealand out of necessity and design (NZRIH, 2008). The Primary Health Care Strategy (2001) has seen rural PHC move in many new directions, with the emergence of local solutions to health provision with a multidisciplinary focus which includes advanced rural nursing roles (O‘Malley et al., 2009; Ross, 2001). The literature in this review provides examples of collaborative PHC approaches incorporating advanced nursing to rural health care in New Zealand including the Reporoa project and the Neighborhood Nurses in Reefton model (Connor et al., 2010; Nelson et al., 2009; O‘Malley et al., 2009; PHCNIET, 2011). Other examples of collaborative GP and nursing practice in rural New Zealand were also offered (Adair et al., 2012; Lancaster, 2011).

The Australian literature indicates a trend towards a number of alternative nurse-led and collaborative models of advanced PHC nursing practice, and these models appear to have been positively evaluated by GPs, allied health professionals and communities (Bradley & McLean, 1999). The NRHA (2005) discussed some specific examples of successful rural and remote Australian nurses working in autonomous and collaborative relationships demonstrating advanced nursing practice. A example used was the ‘Quality Care in the Bush’
project completed by Monash University School of Rural Health, which aims to identify the advanced practice of Bush Nurses in Australia.

Chapter Summary.

This chapter has presented the results of the literature search, quality appraisal of the data, and the data extraction process. It has described the results of the data analysis and inductive coding process, which resulted in the generation of nine categories, and three themes that have been presented:

- The development of advanced rural PHC nursing roles in Australia and New Zealand;
- The factors influencing the development of advanced rural PHC nursing in Australia and New Zealand; and
- The future of advanced rural PHC nursing in Australia and New Zealand.
CHAPTER FOUR: DISCUSSION

This chapter discusses the nine categories and three themes. The research strengths, limitations are presented along with the implications for advanced rural PHC nursing practice. Recommendations for further research are made and final conclusions are drawn.

Theme One: The development of advanced rural nursing in Australia and New Zealand.

The literature included in this review has identified distinct differences in the nomenclature used to describe the scope, titles, roles and functions of advanced rural PHC nurses. There are considerable differences in the way rural health care is defined and delivered in terms of geography and context in the international setting. This is recognised by the author as a factor which influences the comparison of the results presented in this theme.

Category One: Nomenclature in the titles and scopes of practice for advanced rural nurses.

Titles for Advanced Rural Nurses.

The results of this integrative review have highlighted that titles appear to be an important factor in providing clarity for the role and function of advanced PHC nurses. The background chapter explained that some countries such as the United States have clear legislation and regulations that protect the titles for advanced nurses and this provides clarity in distinguishing advanced roles. However, there is also an identified lack of international agreement about the use of advanced nursing titles. This exacerbates role confusion when the same title is applied to different roles with variation in the purpose, educational preparation and scopes of practice (Bryant-Lukosius et al., 2004).

The Australian and New Zealand literature examined for this review confirms inconsistent nomenclature in the terminology and titling of advanced rural nursing practice. This is creating professional boundary obscurity and exacerbating the failure to recognize the value of highly skilled advanced registered nurses working in rural PHC practice (Cant et al., 2011; Hegney, 1996).

The wider literature presents evidence to support the standardisation of roles and titles in Australia. While the discussion applies to all advanced nursing roles points were made that
provide a valuable contribution to this review. There is a suggestion in the literature that individual nurses who have specific titles feel that they have a unique and valued role which holds some professional status, as opposed to nurses using the generic RN title (Duffield, Gardner, Chang, Fry & Stasa, 2011). Nurses are seeking to define themselves as highly skilled professionals using titles such as Rural Nurse Specialist. But the current ad hoc use of titles to describe advanced nursing positions has the potential to detract from patient outcomes. National professional regulation would bring competency standards to the levels of care provided to patients by speciality nursing practice (Duffield et al., 2011).

Scopes of Practice.

There are two definitive scopes of RN practice that rural nurses in Australia and New Zealand are practising within that are recognized by professional nursing bodies, namely Registered Nurse and Nurse Practitioner (NCNZ, 2014; NMBA, 2014). Legislation governing nursing practice in these countries has competency standards that make all nurses clearly accountable for their individual scopes of practice and the outcomes of their nursing practice (Keyzer, 1997).

The international perspective is that there is no single definition of advanced nursing scopes of practice. However, there is agreement that advanced nursing practice extends beyond the traditional scope of nursing practice to involve highly autonomous practice which maximises the knowledge and contribution of these nurses to the development of the nursing profession (Bryant-Lukosius et al., 2004).

There were valid concerns identified in the literature for this current integrative review that rural nurses in Australia and New Zealand are working well beyond what is considered to be the conventional RN scope of practice. The implication of this is that rural nurses are being placed in a vulnerable position that potentially threatens their authorisation to practice and could compromise patient safety (Hegney, 1996; Ross, 1999). Ross (2001) stated “that rural nurses are currently fulfilling a variety of roles throughout New Zealand but the scope and effectiveness of their practice has not been described nationally” (pg. 20).

However, there is evidence in the wider literature that attempts are being made by nursing bodies to address the scopes of practice levels. In 2004 Nursing Council New Zealand (NCNZ) began approving professional development and recognition programmes (PDRP) under Section 41 of the Health Practitioners Competence Assurance (HPCA) Act 2003. The intention was that nurses would demonstrate continuing competency to practice. But what also occurred as a result of these programmes was the development of support networks for
individual nurses to extend their practice and have their additional contributions to nursing recognised by their employers and peers (NCNZ, 2004).

The New Zealand Nurses Organisation (NZNO) College of Primary Health Care Nurses (2009) developed specific PDRP tools for RNs to receive professional recognition for their advancing knowledge and skills within their specialty area of practice at three levels. The highest level of endorsement is expert, which acknowledges advanced nursing practice and this includes rural PHC nurses. Despite the introduction of PRDP tools in New Zealand recommendations are still being made that further review of nursing scopes of practice are required. The Primary Health Care Nursing Innovation Evaluation Team (2007) presented a report to the MoH suggesting as a result of the rural nursing innovation projects, there is a growing recognition that the two scopes of practice may not be sufficient and additional review is required in the future.

Similarly in New Zealand, the Rural Nursing Workforce Strategy (2009) recommended that scope of practice issues need to be addressed by national nursing professional bodies. It suggested that professional engagement should be undertaken with rural nurses working in relatively independent practice. These nurses could provide advice on competency standards, advanced scopes of practice and professional development. The report highlighted that the NCNZ is providing some focused consideration to the issues raised by rural nurses in the current scope definition evaluations (O’Malley et al., 2009).

NCNZ (2013) consulted on two proposals that would extend prescribing rights to suitably qualified RNs. Proposals for two levels of nurse prescribing were developed following discussion with professional groups. An analysis of over 200 submissions regarding the proposals showed a high level of support for specialist nurse prescribing, which would enhance advanced nursing roles for multidisciplinary health teams, including those in general practice.

A submission from Rural Women New Zealand (RWNZ) was pertinent to this review; the group recognized and supported the extension of nurse prescribing to ensure better options for rural patients to access medications. RWNZ described that a precedent has already been set with the success of specialist nurse prescribing for diabetic patients in rural areas, and the group further strengthened their argument by describing the “tyranny of distance and lack of choice of GP is a barrier that the extension of the current nurse prescribing would go a long way towards remedying” (pg. 1).

In 2010 the Australian professional nursing bodies changed to a centralised system of national, rather than state, registrations. This change in systems highlighted the fact that
although there are RN and NP scopes of practice, there is no national recognition or legitimization of advanced nursing practice scopes (Cant et al., 2011).

The NRHA (2005) supported this in a position paper on advanced nursing practice in rural areas stating that:

some expert nurses in remote areas are recognized and endorsed as nurse practitioners and have undertaken appropriate further education and competence assessment; while others critically apply best practice guidelines to legally provide aspects of care in their remote communities (pg. 10).

The NHRA (2005) recommended the funding of a national project to validate competency standards for advanced registered nurses along with a framework for credentialing pathways for remote nurses. A similar national project was undertaken in New Zealand the Rural Practice Nurse Skills Project (1996) recommended and set out educational and clinical requirements for advanced rural nursing roles (Ross, 1999).

The literature for this review produced evidence of one advanced scope of nursing practice sitting between the RN and NP scopes in Australia. Queensland Health (2001) announced a quality improvement and enhancement program to expand the scope of RN practice for nurses working in rural areas. The Rural and Isolated Practice Nursing Endorsement allows rural nurses to work under the Health (Drug and Poisons) Regulations 1996 to supply and administer some medications without medical officer’s orders.

There appears to be an abundance of evidence that nursing practice regulators recognise, and are working towards, solutions to the scope of practice issues for rural nurses. There are compelling arguments that rural nursing is a specialist area of nursing practice that lacks legitimisation and regulation, with an accompanying lack of critical systems in place to protect both nurses’ professional boundaries and the safety of communities they work in (Cant et al., 2011; Nelson et al., 2009; O’Malley et al., 2009; Ross, 1999).

**Category Two: Roles and Functions of the Advanced Rural Practice nurse.**

As a result of health care restructuring, there is international recognition of the development of many different advanced nursing practice roles, but it is unclear to what extent these roles truly reflect advanced practice. Inconsistency in the interpretation of advanced nursing roles has created barriers for these nurses to reach their full potential (Bryant-Lukosius et al., 2004).

Role conflict and overload, along with variable stakeholder acceptance, are reported as problems associated with the introduction of advanced nursing practice roles. As with
advanced scopes of practice, there is no international agreement on the use of titles to distinguish advanced practice roles, resulting in confusion when the same title is applied to a variety of different roles with different purposes, educational levels and scopes (Bryant-Lukosius et al., 2004).

The literature review confirmed the similarities in advanced rural nursing practice roles and functions in Australia and New Zealand. Advanced rural nurses were described as specialist-generalists who provide a lifespan approach to health care, whose role is influenced by the context in which they practice (Francis & Mills, 2010; Hegney et al., 1999; Mills et al., 2009). Changes in the delivery of rural health services in both countries has led to a shift in the roles and function of rural nurses and this has emerged from attempts to meet the rural community's demands for diverse options in health care (London, 2002; NRHA, 2005; Ross, 2001).

Nevertheless, the literature confirms that within the specialist-generalist rural nursing role, there is diversity in the range of skills and levels of experience, with a continuum of rural nurses working in roles which range from novice to expert levels (Mills et al., 2010; NRHA, 2005). Furthermore, studies in Australia and New Zealand show that there is a distinct lack of comprehensive quality data about rural nursing. An emphasis is placed on the need for further research, in order to gain an explicit and in-depth understanding of advanced nursing roles that are not universally well understood at this time (Duckett, 2005; O'Malley et al., 2009).

When exploring the wider literature, it was found that the International Nursing Council (2003) believes that competency domains are a far better indicator of advanced nursing practice than titles and roles alone. This includes competency domains for clinical practice, education, research, leadership and professional development. There is also mounting agreement in the international setting that postgraduate education combined with clinical practice experience is a mandatory requirement for advanced nursing roles (Bryant-Lukosius et al., 2004).

The literature analysed concludes that it is essential to develop structure and policy to clearly articulate a competency framework, career pathway, educational requirements, and appropriate regulation for the advanced rural nursing roles (London, 2002; Mills et al., 2010; Nelson et al., 2009; O'Malley et al., 2009; Ross, 2001). Also as previously highlighted titles and roles cannot continue to develop in such an ad hoc manner or there will be negative consequences for all of the consumers of health care (Duffield et al., 2004).
Summary of Theme One

Consensus abounds that there is inconsistent nomenclature regarding the titles and scopes of practice for advanced rural nurses in both the local and international context (Bryant-Lukosius et al., 2004; NHRA, 2005; O’Malley et al., 2009). The problem appeared to be intensifying as rural PHC continues to develop. The roles and functions of rural nurses are significantly changing with the shift to community-based service partnerships, population-based health and multi-disciplinary approaches to providing communities health care needs (NRHA, 2005).

Advanced rural nurses are seen as very desirable and effective in collaborative multidisciplinary PHC models. These nurses work in specialist roles where on-site medical support may not be available, which adds the dimension of nurse led care to PHC practice models (London, 2002; NHC, 2010; NRHA, 2005). However, the literature has shown there is much to be clarified in terms of scopes, titles and roles in order for advanced rural nursing practice to move forward (Bryant-Lukosius et al., 2004; Duffield et al., 2004).

Theme Two: The factors influencing the development of the advanced rural nurse in Australia and New Zealand.

Category One: The rural communities need for a sustainable health service.

The background chapter highlighted that rural areas have a range of common problems that influence the provision of health care services. Many rural population groups are now exploring solutions to their unique situations with many possible innovations being proposed. It is argued that there is a requirement for deliberate and targeted action by rural societies to improve the health outcomes of their unique people and communities (Adair et al., 2012).

The impetus for self-sustainable models of rural PHC and the focus in population-based health care has strengthened local community input into decisions regarding health service provision in their area (Nelson et al., 2009; PHCNIET, 2007). This has increased rural communities expectations to be provided with high quality first response and primary health care services (Keyzer, 1997; NZIRH, 2008). The challenge for rural health providers including nurses has been to respond to the changes in the delivery of rural health care while learning to work with rural community personnel to meet local health needs (Ross, 2001).

The advantage for experienced advanced rural nurses is that they are well known by the rural communities they serve and have often had a long and trusting relationship with their patients (Hegney, 1996). This enables rural nurses the potential to utilise every opportunity to
provide health care and advice to the communities they serve in increasingly more complex health service situations, which often includes the absence of other health professionals (Ross, 2001).

However, this can be negatively offset by the potential constant expectation and demand by rural consumers that rural nurses will function in extended roles, particularly in the absence of a GP. This is compelling registered nurses to work at the boundaries of their RN scopes of practice, with the potentially unsafe blurring of practice boundaries (Hegney, 1996; London, 2002; Nelson et al., 2009). In relation to the issues of rural community boundaries in healthcare two distinct groups of rural PHC nurses working in advanced roles were revealed in the literature for this review. There are those who relish the autonomy of their advanced roles, and there are others who are dissatisfied with the stress and uncertainty of the position they have been placed in (Hegney, 1996).

NZIRH (2008) prepared a discussion paper regarding rural health which further supports the concern that clinical safety is an issue of significance for rural nurses, identifying that services are running with low numbers of suitably qualified staff and tight fiscal constraints. Rural staff identified poor access to ongoing education thereby potentially exposing rural populations to health care that does not necessarily reflect best practice. A point of importance made in the NZRIIH (2008) discussion paper, in regard to rural health societies, is that “at some point personal commitment and skill of health professionals is not enough to ensure the safety of the consumer” (pg. 2). Perhaps the issue of safety may not have occurred to nurses in their overwhelming desire to serve their communities. However, as the literature suggests, the advanced rural nurses desire to provide care and commitment to rural communities must not outweigh clinical safety and boundaries of practice (Hegney, 1996; Ross, 2001).

**Category Two: The rural health workforce.**

This integrative review has highlighted significant rural workforce issues which are complex and overlap other themes within this review. International changes in health care trends accompanied by the poor global economic climate has caused fluctuations in the supply and demand for the rural health workforce. The increased demand for more PHC-based services has imbalanced the supply of the rural health care workforce (Byrant-Lukosuis et al., 2004).
Rural Workforce Supply and Demand

There is an identified demand for nurses in rural areas to provide expanded services to meet health care needs. The demand comes both internally from the local communities and externally from health care providers, who both see advanced nursing roles in rural areas as the answer to workforce gaps. Organisations often permit the development of advanced nursing roles as solutions to health care needs and demands while failing to clearly understand a local health care need or providing role clarity in order to achieve the defined government health priority for improving health outcomes (Byrant-Lukosius et al., 2004).

As identified in the results of this review there is a predicted shortage in advanced rural nurses in Australia and New Zealand due to an ageing workforce group. This was further supported in the wider literature that was explored. Health Workforce Projections Modelling (2009) was done in New Zealand as a forecasting report to predict the future supply of the rural nursing workforce. It found that NZ has an aging nursing workforce, explaining that although the rural nursing workforce has rapidly grown in recent years, the workforce gains have come mainly from urban areas. The nurses moving to rural areas tend to be older and more experienced, while the younger nurses are going to urban areas for education and work experience. Eventually the increasing rural nursing workforce demand will not keep up with the increase in exit rates caused by an ageing and retiring rural nursing workforce (Health Workforce Information Programme, 2009).

Australian nursing workforce data that was presented in the results also recognises the same issues. Duckett (2005) discussed two nursing workforce inquiries instigated at Senate and Commonwealth government levels. Both these inquiries highlighted workforce problems including a lack of long-term nursing workforce planning. There is fragmentation of responsibilities for different aspects of nursing practice, and they also identified a critical shortage of nurses. The implications of, and potential solutions to, workforce issues are discussed in the next section of this review which pertains to the recruitment and retention of the rural nursing workforce.

Recruitment and Retention of the Rural Health Workforce.

When exploring the rural health workforce, a frequently discussed matter is recruitment and retention of the rural health workforce. Traditionally much of the focus has been on research into the recruitment and retention of the rural GP workforce in countries with large landmasses and isolated communities such as Canada, Australia and New Zealand (Goodyear-Smith & Janes, 2008). However, with the identification of the critical issues in the rural nursing workforce, which include the ageing workforce and a lack of succession
planning to replace the valuable advanced nursing team, more research is being undertaken on the recruitment and retention of the nursing workforce (Duckett, 2005; O’Malley et al., 2009).

The current rural nursing workforce data portrays an age distribution of three generations of nursing employees; amongst these groups there is a new generation of nurses who are more discerning in regard to their working conditions and career opportunities – new entrant nurses are now seeking better professional career prospects and clear professional pathways (Duckett, 2005; Francis & Mills, 2010).

It is clear that without adequate recruitment and retention strategies to promote the competent delivery of rural nursing services, the acute and constant shortages of appropriately skilled nurses will continue. Hegney (1996) supported this discussing that the extended role requirements of rural nurses must be considered in the preparation of strategy to arrest workforce attrition.

Another rural nursing workforce concern highlighted in the Rural Nursing Strategy (2007) was the perception by the current nursing workforce that rural areas are not seen as attractive career prospects and potential career backwaters. Recommendations were made in Rural Nursing Strategy (2007) including recruitment tactics such as a national branding exercise promoting the benefits of working in rural health. Additionally retention strategies suggested include research funding to address the issues of pay equity, clinical supervision and distance support (O’Malley et al., 2009).

In Australia, health policy makers have also recognised the need for health workforce reforms, with the critical need to expand the existing scopes of practice for health professionals to create new roles that optimize workforce capacity to meet the needs of health population groups (NRHA, 2005). This is evident in the Australian National Rural and Remote Health Workforce Innovation and Reform Strategy (2013), which is closely aligned to the National PHC Strategy and the National Strategic Framework for Rural and Remote Health (2012).

The objectives of the rural workforce policies appear to meet the new PHC philosophies of a socially-based model of care where a multi-disciplinary team provides a flexible health services meeting the local community’s needs. Bush Nursing Centres (BNC) in Victoria, Australia, were given as a successful model of rural practice with a multi-disciplinary approach combining the use of specialist nursing roles providing first point of contact care in emergencies in remote locations (NRHA, 2005). Bush nursing centres are discussed further in this integrative review.
Category Three: Education and career development.

Nursing professional bodies hold the ultimate responsibility for defining advanced rural nursing practice. This includes the standards for practice, education and career pathway development to ensure the safety, quality and effectiveness of the advanced nursing practice roles. The legitimacy of advanced nursing is dependent on professional support for the fundamentals of advanced practice; this includes postgraduate education, career pathways and appropriate licensure (Bryant-Lukosius et al., 2004).

There is international and local variability in the educational preparedness for advanced nursing practice roles and this exacerbates the problems associated with role clarity, role scopes and ultimately effective utilisation of advanced nurses (Bryant-Lukosius et al., 2004).

The current situation with undergraduate education for rural nurses.

The results of this literature review highlight criticism from members of the rural nursing sector in Australia and New Zealand, that the current undergraduate nursing programs do not prepare new graduate nurses for the demands of rural nursing practice and the programs currently lack a vital rural component (NRHA, 2005; O’Malley et al., 2009). Furthermore, it is argued that the broad experience offered by rural placements is being under-utilised by educational providers. Nursing students live in urban areas and find the cost of accessing the rural nursing experience on top of their usual student expenses prohibitive in accessing rural placements (Hegney, 1996; NRHA, 2005; O’Malley et al., 2009; Ross, 2001).

However, the results of the literature review identified that this has been recognised and there is a move towards more support from governments in both countries to fund more undergraduate student placements with a specific example of rural undergraduate immersion nursing programmes in Australia and New Zealand (NRHA, 2005; O’Malley et al., 2009). It was felt that it is beyond the scope of this review to investigate this further.

The current situation with postgraduate education for rural nursing.

The results reveal that postgraduate nursing programmes with a rural focus are currently offered in both Australia and New Zealand (Cant et al., 2011; NRHA, 2005; O’Malley et al; 2009; Ross, 2001). However, it was identified that although advanced rural nurses can attain postgraduate education, there are difficulties with the ongoing maintenance of their advanced skill sets and the many advanced rural nurses fear of professional stagnation due to ongoing rural isolation. (NRHA, 2005; O’Malley et al., 2009). These are issues that require ongoing attention as it is argued that a gap exists between rural nursing as a
professional group, and nursing educational services and health providers. Liaison between the groups is needed to explore the quality of competency standards, and the level of skills and experience of all rural nurses. This applies right from undergraduate through to postgraduate level in order to put in place solid strategies for recruitment and retention of the rural nursing workforce (Bradley & McLean, 1999; O’Malley et al., 2009).

The international literature also cautions that there is a fine line between generic advanced nursing practice education and training programmes, and the specific skills required for different types of advanced nursing roles. For instance rural advanced nursing roles are described as generalist-specialist roles, whereas other advanced nursing roles look after very specific types of patients such as diabetes nurse specialists (Delamaire & Lafortune, 2010).

*Career pathways for rural nursing.*

Francis and Mills (2010) explain that advanced practice requires role extension which comes with a greater acceptance of responsibility and comes with the expectation of career advancement. It is argued that structured and acceptable career pathways are a necessary ingredient in the arrest of current rural nursing workforce attrition. This is supported in the findings of an analysis of the PHC nursing innovations in New Zealand. It indicated that there is a need for systems to support nurses, and to map professional progression in times of change in the health sector which would sustain the workforce (Nelson et al., 2009).

The West Coast District Health Board (2009) developed a rural generalist specialist postgraduate curriculum framework, within this there is a postgraduate generalist nursing pathway. Amongst the aims of the pathway is the preparation of advanced rural nurses for a generalist career pathway to NP. This rural pathway recognises that rural areas tend to see a more diverse range of patients than their urban counterparts, and this requires a broad range of knowledge, skills and therapeutic interventions. It is envisioned that this type of career pathway could provide an appetite for rural practice in the formative undergraduate years for all rural health professionals (O’Malley et al., 2009). The framework is presented in Figure 2 below.
Figure One: Training Centre for Rural Excellence

Figure 2 - WCDHB (2010) Nursing Entry to Practice (NETP) with an additional Expansion Pathway Programme Handbook
Despite the development of frameworks and strategies directed towards rural nursing career pathway progression, the health sector appears to remain firmly devoted to an informal process for utilising advanced nurses. Nurse Practitioners remain the only professionally agreed advanced nursing endorsement with an appropriate career and educational pathway. Regardless of the many attempts to reapportion qualified advanced rural nurses to deliver a high level of health care in Australia and New Zealand, many structural barriers have been identified on the NP pathway that has stalled the only definitive advanced career pathway for rural nurses (Cant et al., 2011; Nelson et al., 2011).

**Category Four: The need for support systems for advanced rural nurses.**

A constant category identified in the results indicated that rural PHC nurses practicing in advanced roles feel lonely, isolated from their colleagues and unsupported in their roles in a variety of ways. This is further exacerbated in Australia and New Zealand because rural PHC models are in their infancy and this appears to have increased the level of isolation (Hegney, 1996; O’Malley et al., 2009). Internationally health services lack the planning and preparation required to accommodate the needs of advanced nurses in new PHC models of practice (Bryant-Lukosius et al., 2004).

The NRHA (2005) also describe professional isolation as an issue for rural nurses in Australia explaining that the “geographical, social, professional and culture isolation can have significant effects on professional growth, practice and wellbeing of the nurses” (pg. 13). Recommendations have been made in both Australia and New Zealand regarding the need for support systems for rural nurses in advanced practice roles. These recommendations include adequate funding to provide fair remuneration, clinical supervision and distance support facilities for rural nurses (NRHA, 2005; O’Malley et al., 2009).

**Category Five: Funding and Purchasing.**

Internationally there is significant variability in the organisation and funding of PHC services, there are different models of organisation and funding that provide different incentives for the development of more advanced nursing roles. It appears that advanced PHC nursing practice is more developed in countries where there is a group delivery of services as opposed to solo GP models (Delamaire & Laforêtune, 2010).

The literature for this integrative review highlights that there are issues relating to the funding, purchasing and provision of health services in the rural sector in Australia and New Zealand, which significantly influence the development of advanced rural nursing services.
Remuneration

The Australian and New Zealand literature highlighted rural nurses have identified concerns regarding the adequate remuneration for service provision, on-call allowances, financial support for continuing education and clinical supervision for nurses practicing at advanced levels (Ross, 2001). In Australia the NRHA (2005) recommended that rural nurses in advanced roles should be recognised and remunerated according to the level of skill, education and responsibility, along with the degree of isolation and autonomy.

The Rural Nursing Workforce Strategy (2007) in New Zealand has shown that rural nurses perceive fragmentation and inequity in funding and employment arrangements, that leave nurses uncompensated for the cost of working in advanced roles in rural locations. Recommendations were made in the Rural Nursing Workforce Strategy for nursing bodies to develop a national approach to remuneration, job titles and scopes of practice. However, despite these recommendations the issue remains unaddressed to date (O’Malley et al., 2009).

Funding and Purchasing.

The value of advanced rural nurses is recognised in both Australia and New Zealand, and a range of initiatives and support programs have been in place in the last decade to develop new models of rural health practice incorporating the advanced level of nursing care (Bradley & McLean 1999; NRHA, 2005; PHCIET, 2007). However, despite the recognised value of advanced nursing services many issues remain unresolved. The literature has explored the process of transition from rural nurse to NP, finding that despite the support for the NP pathway, funding barriers remain in both Australia and New Zealand that have failed to address the full potential of these nurses (Carrey et al., 2011; Mills et al., 2009).

In New Zealand the MoH (2003) introduced part funding to GP services through a ‘capitation’ system, with funding determined by the enrolled patient population at a general practice. High deprivation groups such as Maori, Pacific Islanders and Indians, and groups living in the lowest socioeconomic areas attract more funding. Extra funding is also allocated to practices via programmes to improve access to care for some high-risk health groups, such as diabetics, by enrolment in long-term management programmes (Hoare et al., 2010).

However, despite the fact that it is usually advanced nurses in PHC who coordinate long-term health programmes, the practice management team does not generally recognize the financial gain provided by the nurse in the advanced role, and a significant barrier for NP employment development in rural PHC practice is that there is no ‘capitation’ attracted to the role (Carrey et al., 2011).
In 2007 an Enhanced Primary Care Programme was introduced to improve access to care for the older population and improve and coordinate long-term condition care in Australia. This was relevant to PHC nurses as the Government added eight items to the Medical Benefits Scheme, which related directly to nursing care. However despite this incentive, there is the suggestion that GPs have been quite obstructive in the process by inhibiting collaborative practice opportunities (Hoare et al., 2011). NPs in Australia do not have access to the Medical Benefits Scheme or the Pharmaceuticals Benefit Scheme and this has influenced the low numbers of NPs able to provide advanced nursing in rural areas (Mills et al., 2009).

**Summary of Theme Two**
Theme two has outlined the many complex and overlapping issues that influence advanced rural nursing roles in Australia and New Zealand that have potential implications for not only rural health care but the rural communities which rely heavily on the continued support of its nurses. As discussed in the background for this review, PHC services have significantly changed with systemic and ideological reforms in the way rural health services are delivered. Communities are now involved in the delivery of health care in their regions, linking the social ideologies of communities to the health care need for individual and unique regions, they expect integrated health care that is quick, reliable and easily accessible (Bryant-Lukosius et al., 2004).

Rural PHC systems both internationally and locally are beginning to utilise opportunities to increase the efficiency of service delivery by exploring skill mix options in the response to ageing populations and increasing chronic disease burdens. Research has identified workforce gaps and forecasted potential future workforce issues, advanced rural nurses appear to have a place in the future of the rural workforce force; with careful planning in the formative years, career pathways can be achieved. The literature indicates the need for funding barriers to be addressed for advanced nursing roles at a high level in the governments of both Australia and New Zealand (Hoare et al., 2011; NRHA, 2005; O’Malley et al., 2009).

**Theme Three: The future of advanced rural nursing in Australia and New Zealand.**

In line with the international move towards PHC-based health care models, there has been an optimistic response by the Australian and New Zealand rural PHC sector to develop
strategies that address the health care needs of rural communities. Rural nurses appear to be crucial to the development of rural PHC (Bradley & McLean, 1999; Nelson et al., 2009). This theme discusses the future for advanced rural nursing in Australia and New Zealand discussing two categories that emerged from the literature.

**Category One: Innovation in Advanced Rural Nursing.**

When discussing innovation in advanced rural nursing, it is important to first reflect on the attributes of the rural nurse. Bigbee (1993) described rural nursing as a specialty area “characterised by a unique approach to practice that requires an innovative, truly generalist approach” (pg. 131). The fluid role of rural nurses was further explained acknowledging the adaptability and generalist nature of rural nursing, with the need to be able to deal with anything, anywhere at any time (Barber, 2007). These are perhaps the qualities that health regulators have recognised that make advanced rural nurses innovative practitioners and potential leaders in the further development of rural PHC models of practice (Bradley & McLean, 1999).

In the late 1980s a new direction developed in Australian and New Zealand national rural health policy, and strategies emerged that increased national and regional attention to the importance of rural health issues. There was recognition that isolated communities heavily relied on nurses for extensive health care services; this bought with it the desire by governments in both Australia and New Zealand to seek innovative ways of providing health services to rural communities. Many projects have been undertaken to examine new ways of working that include the skills of advanced rural nurses (NRHA, 2005; O’Malley et al., 2009).

The projects recognised some very important issues and the wider implications for the development of rural advanced nursing practice in New Zealand. While each of the eleven projects had unique characteristics, two general models were reported on including a leadership model and a PHC nursing practice model (PHCNIET, 2007). The Leading PHC Nursing Development Model created leadership roles at District Health Board and Primary Health Organisation level with initiatives to further develop the nursing workforce. The second model was of interest, as it highlighted and explored newly modified and expanded PHC nursing practice models. Two of these models focused on the nursing care in the rural communities of Reporoa and Reefton (Connor et al., 2009).

Reporoa is a small community in central New Zealand that required accessible health care for its community after the loss of its GP. The governance group in Reporoa believed
that the nurses were prepared to advance their practice in response to the need of their local community and innovation funding was sought to undertake the project (Connor et al., 2009).

The Health Reporoa innovation funding enabled nurses to expand their practice to provide free first level contact and outreach clinics to an isolated rural community with the problem of limited GP access (PHCNIET, 2007). An exploration of the impact of the Reporoa project reported positive outcomes for both the community and the nurses involved. The nurses achieved advancement of their nursing practice and developed connections to the wider nursing profession and health care community. It is believed that this model could serve as a blueprint for other rural communities, and enhance and validate advanced nursing roles (Connor et al., 2009).

The West Coast District Health Board in New Zealand was successful in its application for PHC nursing innovations funding in 2003. The funding was intended to aid the development of new models of advanced nursing practice to reduce fragmentation and duplication of services on the West Coast (PHCNIET, 2007).

A generic nursing model was proposed to enable nurses to respond more freely to the patient and community health needs, without service delivery constrained by contractual work streams (West Coast DHB, 2007). The evaluation of the Neighbourhood Nurses in Reefton project was positive; it was initially slow to gain momentum but progressed to provide new comprehensive health services, which met the MoH goals for the contribution of nursing to the PHC strategy (PHCNIET, 2007).

In the overall evaluation of the PHC nursing innovation projects, the authors noted that some significant factors to consider in the redevelopment of PHC nursing roles including the potential difficulties with the redesign of advanced nursing roles within existing local PHC workforces. The PHCNIET warned that the issues associated with human resource development and employment should not be underestimated, and recommendations were made that health professionals must have the opportunity to actively participate in the restructuring of roles. The group also cautioned that rural communities’ with diminishing services can be vulnerable and suspicious of the potential for service changes and must be consulted on the process and the implications for them (PHCNIET, 2007).

**Category Two: Contemporary Models of rural Primary Health Care**

As discussed in the background for this integrative review, rural PHC is in its infancy in Australia and New Zealand. Advanced rural PHC nurses are beginning to play an important role in the progression and development of new models of rural PHC practice. Internationally
it has been shown that advanced nursing practice roles are influenced by fluctuations in supply and demand of health care workers, practice trends, and the health care economy (Bryant-Lukosuis et al., 2004).

The literature highlighting the local rural PHC sector trends indicates congruence with the international health sector. In the last decade both Australia and New Zealand embarked on rural strategies and policy reforms to improve the health outcomes of growing rural populations (Francis et al., 2010; London, 2002).

The NZIRH (2008) explained that rural models of health care are changing in New Zealand out of necessity and design. The Primary Health Care Strategy (2001) has seen rural PHC move in many new directions, with the emergence of local solutions to health care provision with a multidisciplinary focus. The literature shows that traditional professionally-focused service delivery models create a professional silo with very professional specific knowledge and skill sets, impeding the possibility of multidisciplinary models. These models do not foster an environment of teamwork and generalist rural health care (Keyzer, 1997; O’Malley et al., 2009; Ross 2001).

The Australian literature reveals a trend towards a number of alternative nurse-led and collaborative models of advanced PHC nursing practice, and these models appear to have been positively evaluated by GPs, allied health professionals and communities (Bradley & McLean, 1999). In Australia the NRHA (2005) discussed some specific examples of successful rural and remote Australian nurses working in autonomous and collaborative relationships demonstrating advanced nursing practice. Figure 3 shows the ‘Quality Care in the Bush’ project completed by Monash University School of Rural Health, which aims to identify the advanced practice of Bush Nurses in Australia.
Swifts Creek is in the northeast sub-alpine region at the foothills of the Great Dividing Range, an area devoted to farming and forestry with a history of gold mining. The first nurse came to the area in 1914, and a single nurse practitioner continues to provide primary health care to a community of 450 and an increasing number of tourists.

Cann River, in the far eastern part of Victoria, provides services to small settlements in South Eastern NSW and Victoria. The main industries in the region are farming and forestry and a rapidly expanding tourist industry. A sole nurse was appointed at Cann River in 1920 and until 1960 was also responsible for the nearby district of Mallacoota.

Like many small rural communities in East Gippsland, Cann River and Swifts Creek have no local medical officer, hospital or pharmacist. Rather, general practitioners play an important role in providing the two nurses with professional co-operation, referral, collaborative consultation and medical advice. Further knowledge and support for the project is provided by pharmacists, clinical nurse associates, local Committees of Management and communities.

The role and function of these two nurses represent a model of advanced nursing practice, demonstrated by them working autonomously, in collaboration, and with referral to, local medical and allied health professionals. Formal recognition of advanced nursing practice in rural and remote areas contributes to securing access to safe, appropriate and effective health care for isolated communities, as well as supporting those nurses who are often required to provide services beyond the traditional scope of practice.\[1\]

Figure 3 - Quality care in the bush project. (The National Rural Health Alliance (2005))

New Zealand also presents an example of a contemporary rural PHC practice model that incorporates advanced rural nursing practice. Neighborhood Nurses in Reefton continues to flourish today (see Figure 4). It has strengthened the provision of health services to relatively isolated communities on the South Island’s West Coast in several ways. In Hokitika the neighbourhood nurses have been integrated into the District Nursing Service with debate continuing on a complex needs modelled approach to health care. In Dobson the neighbourhood nurses work collaboratively with the local general practice, and in Reefton the nurses are providing comprehensive care to adolescents and Maori as part of both the practice and community health team (O’Malley et al., 2009).
INTEGRATING INNOVATION WITH IMPROVEMENT IN HEALTH STATUS AND COMMUNITY DEVELOPMENT

Outcomes from and supports required for the Neighbourhood Nurses in Reefton Innovation

taking the most holistic/broadest perspective possible

Figure 4 – WCDHB (2006) Neighbourhood Nurses in Reefton model

The current trend towards multidisciplinary PHC approaches appears to be maintaining its momentum. A report released by the National Health Committee (2010) in New Zealand, which has been previously discussed, recommends in its key actions on service delivery that nurse-led care and Integrated Family Health Centres continue to be developed. However, there is evidence in both Australia and New Zealand that despite initiatives and innovation projects for rural nurses for education, professional development and the
introduction of NP scopes of practice, there are still a large number of rural nurses providing nurse-led collaborative care without formal endorsement or the protection of legislation governing their extended scope of practice (NRHA, 2005; Ross, 2001).

The NZIRH (2008) discussed that while the focus of multidisciplinary team work is embraced by rural health professionals, it is tempered by a number of factors. This includes the desire to work in a rural locality, and issues such as professional isolation, difficulty accessing ongoing education and family priorities. On top of this rural health professionals are trying to maintain the competency requirements for the Health Practitioners Competency Act (2003).

Summary of Theme Three.

The national literature from both Australia and New Zealand has revealed successful examples of integrated rural PHC models with advanced rural nurses providing autonomous client care in collaborative relationships with other allied health professionals. It is encouraging to see that diverse rural health care models are being developed to sustain individual communities by developing fulfilling relationships and models that fit their community context and need. However the need remains to address the barriers to further development of rural practice models that incorporate advanced nursing care.

Summary of Themes and Categories.

This chapter has drawn together the themes and categories identified throughout this integrative review. Theme one, ‘the development of advanced nursing roles in Australia and New Zealand’ identified two categories; there is confirmed inconsistent nomenclature in the titles and scopes of practice for rural nurses in advanced roles. The problem was identified both internationally and locally, with the lack of clarity creating professional boundary obscurity. This exacerbates the failure to recognise registered nurses working in advanced roles in rural primary health care practice.

The second category pertaining to the roles and functions of the advanced rural nurse revealed a significant diversity in the context of rural practice and confirms that there is no international agreement on the competencies required to distinguish advanced nursing practice roles from that of other advanced nursing roles, such as NPs. There are a variety of different roles with different purposes and educational levels resulting in blurring of practice boundaries and role confusion for nurses at advanced levels.
Theme two, ‘the factors influencing the development of the advanced rural nurse in Australia and New Zealand’ identified the significant barriers and opportunities for advanced rural nurses created by PHC models of health practice. Category one identified the rural community’s need for sustainable health services. The relationships between communities and health professionals were explored along with the barriers and facilitators to rural community-based health care models. The current recommendations to provide quality rural community health care services were explored.

Category two examined the rural health workforce and the need was identified to expand the existing scopes of practices. It was recognised that advanced rural nurses can be utilized to create new roles that optimise the workforce capacity to meet populations’ health needs. This would align with the new PHC philosophies of a socially-based model of care where a multi-disciplinary team provides a flexible health service meeting local communities’ needs.

Category three confirmed an underestimated and neglected need for support systems for advanced rural nurses who are often professionally isolated. Many recommendations have been offered to address the issues associated with the lack of support systems for rural nurses, but to date the problems appear to remain unaddressed. Category four discussed education and career development for rural nurses offering an example of a career pathway of value for rural health professionals, and category five described an overview of the current funding barriers that are inhibiting the development of advanced nursing roles including NP.

The third theme, ‘the future of advanced rural nursing in Australia and New Zealand’ discussed the innovations in rural PHC that have paved the way to the introduction of successful models of integrated rural PHC with autonomous advanced nursing practice roles in collaboration with GPs and other allied health professionals. There does appear to be a bright future of advanced rural nurses in PHC practice but many of the barriers need to be further addressed to allow these nurses the opportunity to flourish.

**Limitations and strengths.**

**Limitations**

The limitations of this review include a paucity of Australian and New Zealand literature on certain aspects of the research topic. There is limited quantitative data available on advancing rural nursing practice in these countries and the literature acknowledges doctors have been the traditional focus of data collection. The importance of advanced rural nursing roles is still emerging and the research is ongoing. The author also acknowledges the
difficulties encountered when attempting to draw conclusions in relation to advanced rural nursing due to the inconsistent nomenclature and the numerous differences in the way rural health care practice is described and viewed around the world. When considering the Australian and New Zealand perspective, the strength of the literature supporting and highlighting issues in advanced rural nursing is clear, but there is frustration in the lack of ability to articulate a clear advanced rural nursing pathway that is agreed upon by all the parties involved in rural PHC practices both internationally and in Australia and New Zealand (Bryant-Lukosius et al., 2004; Lowe et al., 2011; NRHA, 2005; O’Malley et al., 2009).

**Strengths**

The strengths of this review included the use of the valid data evaluation and data analysis tools namely the JBI (2011) critical appraisal tools and Thomas’ (2003) general inductive approach for data analysis. The use of these tools assisted in assessing the validity of the research and literature and the results and this enhanced the credibility and rigor of the review.

The review achieved the stated research aims by exploring the development of advanced rural PHC nursing in Australia and New Zealand. The factors influencing the role’s progression and future implications have been identified. There was not enough evidence to draw conclusions regarding the New Zealand context on its own; however the commonalities with Australia provided strength for the results and practice implications in this country.

**Implications for Advanced Rural Nursing Practice.**

This literature for this review along with the wider body of literature has shown that advanced rural nursing practice has numerous definitions depending on the country and practice setting. The advanced nursing practice role has developed in the rural setting in response to GP shortages and in response to the unmet health care needs of rural populations. There are many inconsistencies around the advanced nursing role definition, educational standards and credentialing (Bryant-Lukosius et al., 2004; Hegney, 1999; Lowe et al., 2011; Mills et al., 2009; Ross, 2001).

Clarity around advanced nursing scopes, titles and roles is paramount in order to effectively utilise the opportunity to improve rural health care delivery. It is very difficult to justify the efficiency and cost effectiveness of advanced roles without consistency and clarity. If roles and functions become clearly articulated then the difference advanced nursing practice
makes can be measured against clear practice indicators. Clarity by standardisation measures will become the set point to provide validity to efficiency, cost effectiveness and, most importantly, quality patient outcomes (Bryant-Lukosius et al., 2004; Lowe et al., 2011).

This review has provided validity to collaborative rural models of health care with advanced rural nurses as integral member of the team. Professional nursing bodies and regulators have a responsibility to affirm the value of advanced nursing roles by continued discussion and reform around the standardisation of scopes, educational and competency standards. A unified stance will aid the acceptance of advanced nursing roles by other health professional groups and also by the public bolstering the significant value nursing brings to a variety of settings including rural health care (Lowe et al., 2011; NRHA, 2005; O’Malley et al., 2009).

Nurses in advanced roles are encouraged to participate in local and national policy making. This integrative review has identified the ongoing need for advanced rural nurses themselves to actively seek and participate in the clarification process, and to provide a sense of professional identity. Advanced nurses are well positioned to highlight the benefits and shortcomings of the current role, which will maintain the momentum of evidenced-based improvement and ongoing reform in the nursing profession (Lowe et al., 2011; NRHA, 2005; O’Malley et al., 2009).

This research has provided an active voice in the development of the nursing profession by providing a variety of perspectives through exploration of the various available works to date. It has provided an overview of the international and more particularly the Australian and New Zealand perspective where there are more similarities than differences existing in the rural health care setting. There is a favourable outlook for rural nurses practicing in autonomous roles, if the nursing profession can move on from the current status quo.

**Opportunities for future research.**

Opportunities for future research have been identified throughout this review. A lack of locally produced literature as well as a lack of quantitative evidence to support the numbers and types of advanced rural nursing practice in the Australian and New Zealand context was acknowledged by the author.

While completing this review the College of Health at Massey University announced a New Zealand Nursing Practice Survey (2014). It is described as the first large scale study that will apply a research framework exploring the many different roles and titles of nurses in
New Zealand. The study aims address the confusion and differences in nursing roles for all types of RNs and NPs (NZRGPN, 2014). The findings of this review have not yet been reported.

Carryer (2014) is one of the researchers undertaking the New Zealand Nursing Practice Survey (2014), in a recently published letter she confirms the inconsistency in role and titles in New Zealand and its pertinence to advanced nursing. Research is currently being conducted in Australia to more clearly delineate advanced nursing practice roles, particularly RN and NP roles. The early indications in the Australian study provide value to the tool being used; therefore the NZ researchers are employing the same method (Kai Tiaki, 2014). This research could be the first step in providing the required clarity for advanced rural nursing roles in New Zealand; the findings will be used to provide a framework for evaluating the levels of practice in nursing (Massey University, 2014).

Concluding Statement.

In an effort to clarify the opportunities to advanced rural nursing practice in Australia and New Zealand, this review explored the development of advanced rural PHC nursing and identified the factors that influence the roles progression and implications for the future.

This integrative review identified three themes and nine categories. Theme one explored the development of advanced PHC nursing in Australia and New Zealand concluding that there is inconsistent nomenclature in the scopes, titles, roles and functions of advanced rural nurses not only in these two countries but broadly in the international context. There appears to be no clear pathway to clarify a designated and regulated level of advanced rural nursing practice internationally and this is making national progress very slow.

Theme two identified the factors influencing the development of advanced rural PHC nursing in Australia and New Zealand. Five categories were identified that strongly influence advanced rural PHC practice including rural communities’ need for a sustainable health service, the rural health workforce, education and career development, the need for support systems and funding and purchasing. The literature demonstrated that strategic planning and consultation with all key stakeholders in rural health care services could overcome many of the challenges in establishing and delivering quality collaborative health care. Well-developed clinical and educational career pathways for rural advanced nursing roles hold the potential to provide significant opportunities for advanced rural nurses, should the health sector engage in the regulation of these roles.
Theme three identified future directions for advanced nursing in rural PHC in Australia and New Zealand. There is literature has demonstrated and reinforced the importance of robust planning, collaboration and consultation at all levels of rural PHC nursing. Coupled with ongoing evaluation and adaptation this will ensure advanced rural nurse-led care is successful, safe and beneficial to rural communities’ in Australia and New Zealand as a whole and warrants further and ongoing debate and professional dialogue.
REFERENCES.


Barber, M. (2007). Exploring the Complex Nature of Rural Nursing: rural nurse specialists' role is a complex and challenging one, performed, as it is, within the communities in which nurses live. Kai Tiaki, 13(10), 22-23.


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New Zealand Rural General Practice Network. (2014, October 5). e-zine. The New Zealand Nursing Practice Survey, Rural Networker


APPENDIX A

Joanna Briggs Institute (2011)
Critical Appraisal Tools.

JBI Critical Appraisal Checklist for Narrative, Expert opinion & text

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
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<tbody>
<tr>
<td>1. Is the source of the opinion clearly identified?</td>
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<td>3. Are the interests of patients/clients the central focus of the opinion?</td>
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<td>4. Is the opinion's basis in logic/ experience clearly argued?</td>
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<td>5. Is the argument developed analytical?</td>
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<td>6. Is there reference to the extant literature/evidence and any incongruency with it logically defended?</td>
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<td>7. Is the opinion supported by peers?</td>
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Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

________________________________________________________________________
________________________________________________________________________

68
JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research

Reviewer ___________________________ Date ___________________________

Author ___________________________ Year __________ Record Number __________

1. Is there congruity between the stated philosophical perspective and the research methodology?  Yes ☐ No ☐ Unclear ☐ Not Applicable ☐

2. Is there congruity between the research methodology and the research question or objectives?  ☐ ☐ ☐ ☐

3. Is there congruity between the research methodology and the methods used to collect data? ☐ ☐ ☐ ☐

4. Is there congruity between the research methodology and the representation and analysis of data? ☐ ☐ ☐ ☐

5. Is there congruity between the research methodology and the interpretation of results? ☐ ☐ ☐ ☐

6. Is there a statement locating the researcher culturally or theoretically?  ☐ ☐ ☐ ☐

7. Is the influence of the researcher on the research, and vice-versa, addressed? ☐ ☐ ☐ ☐

8. Are participants, and their voices, adequately represented? ☐ ☐ ☐ ☐

9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? ☐ ☐ ☐ ☐

10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data? ☐ ☐ ☐ ☐

Overall appraisal: ☐ Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reason for exclusion)

________________________________________________________________________

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69
JBI Critical Appraisal Checklist for Descriptive / Case Series

Reviewer .......................... Date ..........................

Author .......................... Year .......................... Record Number ..........................

1. Was study based on a random or pseudo-random sample?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

2. Were the criteria for inclusion in the sample clearly defined?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

3. Were confounding factors identified and strategies to deal with them stated?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

4. Were outcomes assessed using objective criteria?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

5. If comparisons are being made, was there sufficient descriptions of the groups?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

6. Was follow up carried out over a sufficient time period?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

7. Were the outcomes of people who withdrew described and included in the analysis?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

8. Were outcomes measured in a reliable way?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

9. Was appropriate statistical analysis used?  
   - Yes  
   - No  
   - Unclear  
   - Not Applicable

Overall appraisal:  
   - Include  
   - Exclude  
   - Seek further info

Comments (including reason for exclusion):

________________________________________________________________________

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APPENDIX B

Summary of Findings and Critical Appraisal Tool
### Summary of Text and Expert Opinion.

<table>
<thead>
<tr>
<th>Author/Title</th>
<th>Year</th>
<th>Country</th>
<th>Article Type</th>
<th>Key Findings</th>
<th>JBI Tool Used</th>
<th>JBI Score</th>
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</table>
| Adair, Coster, & Adair. Review of the International and New Zealand literature Relating to Rural models of care, Workforce models and Opportunities for the Use of new Technologies. | 2012 | NZ      | Expert opinion | Models of Rural Health Care  
**Themes identified**  
- Potential workforce shortages.  
- The semi-independent and collaborative role of advanced rural nurses  
- The role of communities in rural health  
**Practice Implications.**  
- Predicted rural doctor and nursing workforce shortages need to be addressed.  
- Multidisciplinary rural health care models | NOTARI       | 85%      |
The nursing workforce as been heavily relied upon for many years, providing extensive service in remote areas without access to medical or allied health professionals.  
As the result of one Victorian rural health workforce project expert nurse practitioners have emerged who are establishing models for best practice and innovative service models.  
Including bush nursing centers and collaborative nurse –GP models.  
The issuing this group of nurses is facing includes recognition of their roles, prescribing rights, recruitment, funding and service purchasing, educational standards, attitudes of GP colleagues. | NOTARI       | 100%     |
<table>
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<tr>
<th>Author/Title</th>
<th>Year</th>
<th>Country</th>
<th>Article Type</th>
<th>Key Findings</th>
<th>JBI Tool Used</th>
<th>JBI Score</th>
</tr>
</thead>
</table>
| Cant, R., Birks, M., Porter, J., Jacobs, E., & Cooper, S. | 2011 | Australia | Qualitative | **Key themes Identified.**  
The increasingly complex nature of health care has led to nurses practicing beyond their traditional scopes, particularly in rural locations.  
- The role of NP in an advanced position is recognized, however the role of advanced nurses undetermined  
- Nurses in Australia qualified to practice at an advanced level are fulfilling expanded roles in the rural setting in response to service needs and workforce demands.  
- Advanced roles require postgraduate education and an expectation of a higher level of competence than RN.  
- The ad hoc development of advancing roles has lead to a blurring of roles and responsibilities.  
- Advanced nursing practice is delivered in a variety of settings, in a variety of ways.  
**Practice Implications.**  
- Advanced nursing practice has no national recognition nor agreed role definition. The nurses in the study were positive about the potential for advanced practice in rural centers, however there are significant barriers due to industrial and organizational structures.  
- Advanced nursing practice roles need to be formalized by policy, regulation, pay structures. A consistency of standards would aid the formalization of this process.  
- The ANP roles described by the study participants concur with previous studies describing role expansion and extension. Role expansion is consistent with career advancement necessary to arrest the attrition of the nursing workforce.  
- ANP report greater job satisfaction in keeping with staff retention strategy.  
- Health services will need to change to accept responsibility for nursing education to maintain expanded scopes of practice. Integration and collaboration required to enhance models of health care. | MASTARI | 80% |
<table>
<thead>
<tr>
<th>Author/Title</th>
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</thead>
<tbody>
<tr>
<td>Carryer, Boddy &amp; Budge. Rural Nurse to nurse practitioner: an ad hoc process.</td>
<td>2011</td>
<td>NZ</td>
<td>Qualitative</td>
<td>Exploration RN to NP. <strong>Themes identified</strong> -NP the only legitimized advanced scope, with career pathway -Substituting for GPs -Role ambiguity, broad scope -Four key themes, uncertainly, support vs. resistance, concern meeting NP competencies in rural, challenges of rural setting <strong>Practice Implications.</strong> -Slow uptake of NP scope in rural -Formalized support needed -Legislative barriers to address to progress.</td>
<td>MASTARI</td>
<td>100%</td>
</tr>
<tr>
<td>Connor, Nelson &amp; Maisey</td>
<td>2009</td>
<td>NZ</td>
<td>Expert Opinion</td>
<td>The impact of innovation funding on a rural health nursing service: The Reporoa experience. -Advanced nurses after the loss of their GP responded to the communities need for nurse led care. -Confirms nomenclature regarding titles and recognition of roles -Provided as a potential ‘blue print model’ of advanced nurse led care in rural NZ.</td>
<td>NOTARI</td>
<td>90%</td>
</tr>
<tr>
<td>Duckett Health workforce design in the 21st Century.</td>
<td>2005</td>
<td>Australia</td>
<td>Expert Opinion</td>
<td>Health workforce design. <strong>Themes identified.</strong> -There is potential for nurse to undertake roles, which were traditionally doctors. -Problems with GP recruitment and retention in rural areas <strong>Practice Implications.</strong> -Expansion of nursing roles could lead to better workforce retention, career prospects and pathways.</td>
<td>NOTARI</td>
<td>100%</td>
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<tr>
<td>Author/Title</td>
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<tr>
<td>Francis &amp; Mills</td>
<td>2011</td>
<td>Australia</td>
<td>Expert Opinion</td>
<td>Sustaining and growing the rural nursing workforce.</td>
<td>NOTARI</td>
<td>85%</td>
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<tr>
<td>Sustaining and growing the rural nursing and midwifery workforce:</td>
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<td></td>
<td><strong>Themes identified.</strong></td>
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<tr>
<td>Understanding the issues and isolating directions for the future.</td>
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<td></td>
<td></td>
<td>- Expanded scope of practice, role blurring.</td>
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<td>- Ageing rural nursing workforce</td>
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<td>- Limited career pathway for rural nurses.</td>
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<td>- Lack of career advancement strategies.</td>
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<td><strong>Practice implications.</strong></td>
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<td>- Recruitment and retention issues.</td>
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<td>- Future workforce shortages.</td>
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<tr>
<td>Goodyear-Smith &amp; Janes</td>
<td>2006</td>
<td>New Zealand</td>
<td>Rural Workforce</td>
<td>NZ rural workforce survey including nurses.</td>
<td>MASTARI</td>
<td>85%</td>
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<tr>
<td>New Zealand rural primary health care workforce 2005: More than just a</td>
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<td>Survey</td>
<td><strong>Themes identified</strong></td>
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<td>doctor shortage.</td>
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<td>- Nurse-led clinics, autonomy</td>
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<td>- Extended scopes of practice</td>
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<td>- Increased ratio of nurses to GPs</td>
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<td>- GP recruitment issues highlighted</td>
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<td>- Increase in team approach to rural health care</td>
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<td>- Opportunities for education and up skilling improving</td>
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<tr>
<td>Goodyear-Smith &amp; Janes</td>
<td>2008</td>
<td>NZ</td>
<td>Expert opinion</td>
<td>Discussion on results of NZ rural workforce survey 2005.</td>
<td>NOTARI</td>
<td>100%</td>
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<tr>
<td>The 2005 Rural Health Workforce Survey.</td>
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<td><strong>Themes identified</strong></td>
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<td>- Paucity of data pertaining to rural nursing workforce group</td>
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<td>- Shortage of rural health workers</td>
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<td>- Lack of specific role definition for rural nurses</td>
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<td>- Increase in nurse led clinics</td>
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<td><strong>Practice Implication</strong></td>
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<td>- Indicates the need for further rural nursing workforce research</td>
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<td>Author/Title</td>
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| Hegney                      | 1996 | Australia| Expert opinion | The status of rural nursing.  
**Themes identified**  
-Rural nurses extended roles, multi skilled. Blurred boundaries  
-Social and professional isolation  
-Limited access to education and support  
-Shortages of rural GPs  
-High consumer expectation of rural nurses in extended roles.  
**Practice implications.**  
-Recruitment and retention issues  
-Lack of preparation for rural  
-Lack of support               | NOTARI | 100%    |
**Themes identified**  
-Scopes of practice influence by size of rural service.  
-Lack of on-site GP  
-Advanced nursing roles  
**Practice Implications.**  
-Blurred boundaries causing stress  
-Lack of support an issue  
-Teamwork and collaboration  
-The need for rural nursing competency frameworks | MASTaRI | 85%     |
| Keyzer                      | 1997 | Australia| Expert opinion | The advanced rural nurse and doctor relationship.  
**Themes identified**  
-New community models of rural health service delivery emerging.  
-Advanced nursing roles lack definition  
-Rural nurses and GP have complimentary roles.  
**Practice Implications**  
-Clinical nursing expertise strengthens collegial relationships with GPs. | NOTARI | 100%    |
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<thead>
<tr>
<th>Author/Title</th>
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<th>Key Findings</th>
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</thead>
</table>
**Themes identified**  
- Rural nurse career cohort  
- Post grad nursing qualifications  
- Changing roles  
- Clinical practice and mentorship  
**Practice Implications**  
- Improved collaborative relationships with post grad education. | MASTARI      | 85%      |
**Themes identified**  
- Variable roles in nursing practice  
- Nurse –led care  
- Nurses used to support GP rosters  
- Multidisciplinary approach  
- Paucity of nursing data  
**Practice Implications**  
- Identified need for more nursing workforce data. | MASTARI      | 100%     |
**Themes identified**  
- Problems with recruitment and retention of GPs  
- Integrated health care, community partnerships.  
- Advanced nurse led care  
**Practice implications.**  
- Framework for rural health care | NOTARI       | 85%      |
<table>
<thead>
<tr>
<th>Author/Title</th>
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<th>Article Type</th>
<th>Key Findings</th>
<th>JBI Tool Used</th>
<th>JBI Score</th>
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</thead>
</table>
| Mills, Birks & Hegney. The status of rural nursing in Australia: 12 years on | 2010 | Australia | Expert opinion. | The status of rural nursing in Australia.  
**Theme identified.**  
- The roles of rural nurses  
- Rural and Isolated Practice Endorsement  
- Lack of funding  
- Lack of support and isolation  
- The link rural society and nurses  
- Recruitment and retention issues.  
  Lack of career pathway and educational.  
**Practice implications.**  
- Lack of boundaries and appropriate legislation | NOTARI | 100% |
| National Rural Health Alliance Advanced nursing practice in rural and remote areas. | 2005 | Australia | Expert opinion. | Advanced nursing practice in rural and remote areas.  
**Themes identified**  
- The role and definition of expert rural nurses.  
- Communities heavily dependent on nurses  
- GP shortages  
- Workforce and legislative issues.  
- Collaborative rural health models  
**Practice Implications.**  
- New models of rural practice  
- Career and educational pathways | NOTARI | 85% |
<table>
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<tr>
<th>Author/Title</th>
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<th>Article Type</th>
<th>Key Findings</th>
<th>JBI Tool Used</th>
<th>JBI Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson, K., Wright, T., Connor, M., Buckley, S. &amp; Cumming, J. Lessons from the eleven primary health care nursing innovations in New Zealand.</td>
<td>2009</td>
<td>NZ</td>
<td>Qualitative.</td>
<td>PHC innovation projects. <strong>Themes identified</strong> -Nurse -led services -Issues include education, support systems, regulatory environment, and finding. <strong>Practice Implications.</strong> -Projects informed policy and procedure development.</td>
<td>QARI</td>
<td>100%</td>
</tr>
<tr>
<td>New Zealand Institute of Rural Health. Discussion paper for Moving forward in Rural Health.</td>
<td>2008</td>
<td>NZ</td>
<td>Expert Opinion.</td>
<td>Moving forward in rural health. <strong>Themes identified</strong> -Staff shortages, declining workforce -Difficulty accessing education -Professional issues in rural areas inadequately addressed -Rural consumer expectation and demand -Changing models of rural health <strong>Practice Implications.</strong> -Lack of education exposing rural communities to safety risks. -Workforce issues in rural health -Multidisciplinary approach</td>
<td>NOTARI</td>
<td>85%</td>
</tr>
<tr>
<td>Author/Title</td>
<td>Year</td>
<td>Country</td>
<td>Article Type</td>
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**Themes identified**  
- Lack of definition rural nursing  
- Complex role  
- Aging workforce  
- Limited formal rural nursing data  
- Isolation, lack of support and career pathway  
**Practice Implications**  
- Recommendations for career pathways, education, succession plans | NOTARI     | 100%     |
**Themes identified**  
- Expanded nursing roles  
- Advanced PHC services  
- Innovative nursing models  
- Scopes of rural nursing practice  
**Practice Implications**  
- New models of PHC nursing practice  
- Reconfigure services to improve access to health care  
- Multidisciplinary approach  
- Workforce development, education, peer support, career pathways | NOTARI     | 100%     |
| Ross Perspectives on the developing advanced role of rural nursing in New Zealand. | 2001 | NZ      | Expert opinion.    | Perspective on the development of advanced rural nursing in NZ.  
**Themes identified**  
- Advanced role to meet demand  
- Gap left by other health professionals  
- Blurred boundaries and scopes  
- Isolation from peers, education  
**Practice Implications.**  
- Independent/collaborative roles | NOTARI     | 100%     |
<table>
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<tr>
<th>Author/Title</th>
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<th>Article Type</th>
<th>Key Findings</th>
<th>JBI Tool Used</th>
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</thead>
</table>
| Ross The development of the advanced roles of rural nurses in New Zealand. | 1999 | NZ      | Descriptive survey. | The development of advanced rural nursing roles in NZ.  
**Themes identified**  
- Isolation  
- Variety of skills and advanced roles  
- Education and professional development  
**Practice Implications.**  
- Potential for collaborative models of rural health care | MASTARI    | 85%      |
**Themes identified**  
- Endorsed scope of advanced practice.  
**Practice Implications.**  
- Scope entrenched in rural practice  
- Recommendations made for further development of this role in Australia. | NOTARI    | 100%     |
APPENDIX C

Reference List of Excluded Literature.


