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‘I know the difference it has made in people’s lives’: Perceptions of Rural South Australian Nurses Extending Their Role to Administer Chemotherapy

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Declaration of Originality

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

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Qasem Alnasser

Signed: _____ On: November 20, 2014

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Abstract

Nurses in rural Australia are currently administering chemotherapy in centres where this was not previously the case. This has resulted from an Australian Government strategy to contain and close the gap in population health outcomes between rural and metropolitan residents in Australia. One initiative has been education of rural health care professionals who work with cancer patients. In South Australia (SA) a State-wide Chemotherapy Education and Assessment Program was implemented using the Antineoplastic Drug Administration Course (ADAC) developed by the Cancer Institute of New South Wales (NSW). This research project explored the perceptions of nurses working in level-one rural centres administering low risk chemotherapy protocols in SA.

Critical social theory was used to explore the hidden constraints, conscientize and empower participants. Through individual interviews a dialectic process was developed to collect the data from eight participants who were rural registered nurses working in low risk chemotherapy centres.

The data analysis revealed four main categories of findings. These were; 1) role extension, preparedness and self-confidence; 2) chemotherapy services in rural areas; 3) power relationship, referrals and sustainability; and 4) communication with other cancer settings and professionals. These four categories represent the participants' perceptions of their role and the provision of chemotherapy services in rural areas.

Participants valued the service highly but identified areas that they find problematic including maintenance of knowledge and skills. It was also perceived that rural nurses do not have input into the referral process and fear that the service is being underutilised due to low referral rates from metropolitan centres.

Based on the findings, literature review and current knowledge of cancer education some recommendations were suggested. These recommendations included, developing an education module for rural cancer chemotherapy practice, implementation of an annual re-credential course and clinical rotation to a higher chemotherapy administration service, a more explicit patient referral process would

help to identify patients eligible for chemotherapy treatment in low risk centres, upgrade of centres to enable them to manage medium risk level treatments would increase the volume and familiarity of nurses administering treatments, and lastly, use of telehealth communication for education and communication.

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List of Abbreviations

AACR	Australian Association of Cancer Registry
ADAC	Antineoplastic Drug Administration Course
AIHW	Australian Institute of Health and Welfare
ANMC	Australian Nursing and Midwifery Council
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australian Standard Geographical Classification
BSA	Body surface area
CanNET	Cancer Services Network National Demonstration Program
CINAHL	Cumulative Index to Nursing and Allied Health Literature
COSA	Clinical Oncology Society of Australia
CPD	Continuous Professional Development
CSC	Clinical Service Coordinator
CST	Critical Social Theory
EPICC	Education Program In Cancer Care
EdCaN	National Cancer Nursing Education Project
GP	General Practitioner
HREC	Human Research and Ethics Committee
MDT	Multidisciplinary Team
MDC	Multidisciplinary Care
MOGA	Medical Oncology Group of Australia
PEPA	Program of Experience in the palliative Approach
PICC	Peripherally Inserted Central Catheter

RCC	Regional Cancer Centre
RCMP	Rural Chemotherapy Mentoring Program
RRMA	Rural, Remote and Metropolitan Areas
USA	United States of America

Chapter 1 Introduction

Preface

This chapter introduces the study by providing a background to the research topic, defining the key terms and describing the study context. This chapter will outline and clarify the research question, aims and study significance. As a result, when reading the following chapters, the reader will be able to link and build a better understanding of the whole study.

1.1 Introduction

Cancer disease has the greatest disease burden in Australia. Approximately one-third of people diagnosed with cancer live in rural Australia, where tertiary cancer care services are largely unavailable (Australian Institute of Health and Welfare (AIHW) & Australian Association of Cancer Registry (AACR) 2012). Examples of the disparity in health services and treatment outcomes in rural Australia include: limited expert services available in rural areas, increased travel burden on rural residents to access specialised health services, and higher mortality rate among people in rural compared to urban areas (AIHW 2012; George, Ngo & Prawira 2014; Underhill et al. 2009; Zucca et al. 2011). This disparity is well recognised in Australian literature.

In response to this, extensive strategies have been implemented to contain and close the gap in health outcomes between rural and metropolitan residents in Australia. Improving and facilitating access to health services in rural areas, linking regional and metropolitan cancer services and educating rural healthcare professionals who

work with cancer patients have been initiatives by the Australian Government, the Clinical Oncology Society of Australia (COSA) and other rural cancer professionals (Boyce 2009). As a result, people with cancer living in some rural and regional areas are now able to receive cancer care and treatment closer to their hometown. In part, this is due to additional training undertaken by rural clinicians (general practitioners (GPs) and nurses) in the delivery of some cancer treatments; hence, their practice has expanded to accommodate these changes to their roles. Supported by these measures, chemotherapy administration has recently become part of some rural nurses' roles, including in South Australia (SA).

However despite the establishment of chemotherapy administration in rural areas in SA and elsewhere, there are gaps in the research about the experiences of the rural nurses who administer cancer treatments: in particular, how they perceive their roles and whether they feel equipped with the required knowledge and skills. The aim of this qualitative research was to explore how registered nurses who administer chemotherapy in rural SA perceive their expanded roles, and whether they feel equipped with the knowledge and skills required to undertake them.

1.2 Remoteness Classification

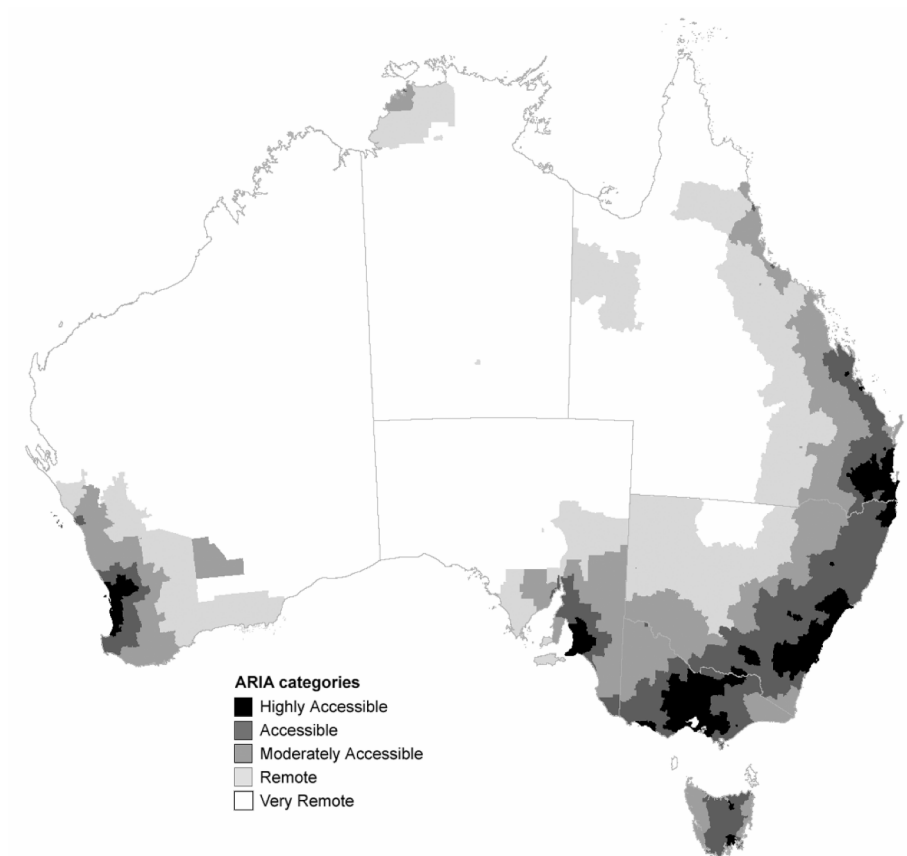
Defining 'rural' and 'remote' is challenging because of the diversity in these areas. Thus, it is important to define the terms 'rural' and 'remote' in our study context, to clarify for readers what we mean by these terms. According to AIHW (2004) some definitions used previously were based on community size, distance from population centres and/or access to services. In general, these definitions described those areas outside major cities. Major regional centres can have rural

characteristics but may not provide the same level and type of service as in major metropolitan areas, for example specialist health care services.

According to the AIHW (2004), there are seven different remoteness classifications of Australian geographical areas. The three most often used are as follows:

- I. **Accessibility/Remoteness Index of Australia (ARIA):** This classification consists of five ARIA classes (highly accessible, accessible, moderately accessible, remote and very remote).
- II. **Australian Standard Geographical Classification (ASGC):** This classification consists of six ASGC remoteness area classes (major cities, inner regional, outer regional, remote, very remote and migratory).
- III. **Rural, Remote and Metropolitan Areas (RRMA):** This classification consists of three broad zones (metropolitan, rural and remote) and seven finer classes as follows:
 - a. Metropolitan
 - i. Capital cities
 - ii. Other metropolitan areas
 - b. Rural
 - i. Large rural centres
 - ii. Small rural centres
 - iii. Other rural areas
 - c. Remote
 - i. Remote centres
 - ii. Other remote areas

The ARIA is a geographical measurement approach to defining remoteness. The most widely used current ARIA product is ARIA+; hence, the classification of the targeted areas in this research will use this particular classification. ARIA+ is a continuous varying index, with values ranging from 0 (high accessibility) to 15 (high remoteness). It is calculated on road distance measurements from over 12,000 populated localities to the nearest service centres in five size categories, based on population size. The last version of ARIA+ was published in 2011 as described on the University of Adelaide's (2014) website, and is used in this research. Figure 1.1 below shows a map of ARIA+ areas of Australia.



Source: AIHW (2004, p10)

Figure 1.1: ARIA Areas of Australia

1.2.1 Study Context

One-third of the Australian population lives outside major cities, including a high proportion of Aboriginal and Torres Strait Islander people with 58 per cent living in remote areas and 8 per cent in regional areas (AIHW 2008). Those who live in rural and remote areas generally have poorer health than their counterparts in major cities. This is reflected in higher levels of mortality, disease and health risk factors (AIHW 2008). There is evidence to suggest health services in rural and remote Australia are not as accessible as in metropolitan areas, and people in these areas are at higher risk of poor treatment outcomes (National Rural Health Alliance & COSA 2009).

1.2.2 Rural Nurses

Rural nurses are those who practise outside metropolitan areas, whether in hospitals or in community settings and provide care to rural residents who have limited access to health services. Rural nurses must possess excellent critical thinking and problem-solving skills and have experience in various nursing settings, such as emergency, paediatrics and mental health, as well as being able to liaise with other healthcare providers. Indeed this is an acceptable part of the rural nurses' job environment. Further, the role of rural nurses is expanding due to the lower number of medical and allied health care specialists in these areas (National Rural Health Alliance 2005).

1.2.3 Chemotherapy in Rural South Australia

In an effort to improve access to chemotherapy and cancer services for rural residents affected by cancer, SA Health developed, coordinated and delivered the Rural Chemotherapy Mentoring Program (RCMP) in 2007-2008. Further details about this particular program will be discussed in chapter two. Subsequently, the Antineoplastic Drug Administration Course (ADAC), developed by the Cancer Institute of New South Wales (NSW) was also implemented in SA. Currently, all rural chemotherapy nurses in SA have to undertake the ADAC course and participate in a chemotherapy administration workshop in a cancer centre in a tertiary hospital as accredited to administer chemotherapy. This standardisation of training and skill development was implemented after being identified as a priority in the *South Australian Cancer Control Plan 2011–2015*.

The ADAC program has standardised the minimum competency required for the safe handling and administration of antineoplastic drugs. The ADAC program consists of eight modules that include online questions and a full day workshop prior to clinical placement and assessment of competency (Cancer Institute NSW 2014), (see Appendix 1 for full structure of ADAC).

1.2.4 Rural Cancer Units in South Australia

As part of its aim to increase the number of patients accessing chemotherapy closer to home, the South Australian Cancer Clinical Network Steering Committee has overseen the development of the *Standards for Chemotherapy Services in SA* (Doherty 2010) and developed chemotherapy risk stratification, a risk assessment

of both patient and planned treatment. The risk levels are grouped from level one to three (low risk chemotherapy treatment), level four (medium-risk chemotherapy) and level five to six (high risk treatment) (Doherty 2010). For more information see Appendix 2. This information is used to determine what the safety requirements are prior to chemotherapy administration, what can be safely administered and how chemotherapies should be administered.

The following statement by Doherty (2010), in the Standards for Chemotherapy Services in South Australia, emphasises the importance of enabling safe provision of chemotherapy services, which lead to the development of risk stratification and chemotherapy service delineation:

It is important to enable the safe provision of chemotherapy services, because it can aid in the identification and stratification of anticipated risks and enable the key factors of patient safety to be considered in a structured and consistent way. There are some factors that should be considered in the risk assessment for any patient planned for chemotherapy and it includes some of the following; patient age, comorbidity, performance status, current disease and the route of planned treatment. It is known that not all cancers and/or cancer treatments present the same level of risk and therefore chemotherapy provision should be delineated within the health regions to ensure that care is provided in an environment that has adequate infrastructure, workforce, resources and support services to provide consistent and sustainable care (p. 16).

In line with this, rural SA has 12 chemotherapy services that administer low-risk chemotherapy, as well as three medium-risk chemotherapy services. High-risk chemotherapy is only administered in tertiary level units in Adelaide (capital city of South Australia). The units administering low-risk chemotherapy are targeted for this research, as nurses in these units are likely to be newly accredited to administer chemotherapy. In addition, they are not likely to administer chemotherapy frequently. This is due to their location and the limited scope of chemotherapy that units have been authorised to administer. Hence, these nurses' perceptions of their role as rural nurses involved in cancer care may be different from those who frequently administer a wider range of chemotherapy. Metropolitan nurses are also more likely to have better access to a range of allied health services within their hospital supporting the administration of chemotherapy in ways not available currently in rural settings.

1.3 The Researcher's Experience of Chemotherapy Administration in Saudi Arabia

In this section, I will detail my own experience in Saudi Arabia concerning the provision of chemotherapy in rural areas. The total population of Saudi Arabia is more than 27 million, with approximately more than four million living in rural areas, accounting for approximately 16.4% of the total population (Index Mundi 2011; Ministry of Municipal and Rural Affairs 2014).

Unfortunately, all rural patients currently have to travel to metropolitan areas to receive cancer treatment. It is regrettable that chemotherapy administration has not been approved for administration in rural hospitals; hence, patients must travel to

receive their cancer treatment. In some cases, patients need to travel 300 to 500km to the nearest metropolitan hospital. Based on anecdotal evidence and personal experience this means that the travel-related burden in Saudi Arabia has a discernible impact on the patients' ability to adhere to a treatment plan. As there are neither studies nor statistics regarding the percentage of those patients who decline treatment because of access difficulties, I will recount my own experience to confirm the scope of significance of this issue. Indeed a typical example of this occurred on the Gastrointestinal Oncology Clinic, when my colleague and I stamped 'No Show' on five different patient charts. All of them were due for a cycle of chemotherapy treatment, and none of them was from the metropolitan area where our hospital was located. In addition, patients from rural areas who are able to get chemotherapy treatment in one of the major hospitals still face another serious problem when they return to their hometown, as rural hospitals have no trained clinicians to care for cancer patients. For patients who receive cancer treatment then return to their local areas and develop post-chemotherapy complications, such as febrile neutropenia, they are at risk of not receiving the same care and treatment of their metropolitan counterparts.

I hope that this study will help me to work with other interested people from my country to develop provisions for chemotherapy administration in Saudi Arabia in the future.

1.4 Statement of the Research Question

The research question that has guided this study is as follows: How do registered nurses who administer chemotherapy in rural areas perceive their extended roles?

As this research focuses on the nurses' perceptions of undertaking a chemotherapy administration role, the question was best examined using a qualitative approach, with critical social theory (CST) as the research methodology. This methodology empowers groups to be conscientious about the positions and roles they provide. It allows groups and individuals to reflect critically on their practices or situations, and critique them to generate change (Whitehead 2013). More details about using this particular methodology to answer the research question will be provided in Chapter 3 ('Methodology').

1.5 The Aims of the Study

The aims of this research were to explore how registered nurses who administer chemotherapy in rural SA areas perceive their expanded roles, and whether they feel equipped with the knowledge and skills required to undertake this role. In addition, this study sought to explore how they sustain their knowledge and skills in a rural workplace that has moderate accessibility to medical services.

1.6 Significance of the Study

This study was conducted in several rural hospitals in SA, where chemotherapy is administered. It was anticipated that it would create new knowledge about rural nurses in chemotherapy administration roles in SA. This will help authorities such as SA Health and SA Country Health to review, modify and apply any necessary changes to the role of those nurses and their workplaces. Further, it was anticipated that this study could enable other states to learn from the results when implementing similar programs. It was hoped that this study could enable the

researcher to focus on the role of rural nurses administering chemotherapy, who are less represented in the literature.

1.7 Assumptions

The literature previously discussed showed that the role of rural nurses is expanding; it was important to explore if rural nurses in SA who administer cancer treatment were facing this situation. It was also important to determine what the other cancer-related roles might be that rural nurses were undertaking, besides chemotherapy administration. Knowing that the expansion of the rural nurses' role is due to both the limited number of rural health specialised professionals and the expansion of rural health services but not to the high acuity and number of patients, leads to asking what might be helpful for rural nurses to sustain their skills and knowledge. Indeed this research will provide a better understanding of the rural nurses' perception in the chemotherapy administration role.

1.8 Conclusion

This chapter has introduced the reader to the research topic and stressed the significance of exploring this area of practice. Chemotherapy provision in rural and remote areas has enabled rural patients to receive treatment close to their homes. Additionally, rural nurses have been equipped with skills and knowledge about cancer care and treatments. Unfortunately, the significant role of rural nurses who administer chemotherapy and other cancer treatments has still not been thoroughly explored or highlighted. Although the role of rural non-specialist nurses had been somewhat addressed in the literature, it was the focus of this researcher's interest,

as it is currently an important and developing issue in rural SA. This study focused on building knowledge about the role of rural nurses who administer chemotherapy, by exploring their perceptions about their role. The primary researcher also hoped that this research would support the development of rural chemotherapy administration in Saudi Arabia in the future, as all rural patients in that country currently have to travel to metropolitan areas to receive cancer treatment.

Chapter 2 Background and Literature Review

Preface

This chapter reviews the literature relating to the topic: the role of rural nurses in chemotherapy administration and cancer care. The gap in the available published literature regarding this topic will be identified and discussed.

2.1 Introduction

An extensive literature search was undertaken to understand the existing role of rural nurses who administer cancer treatments, and the knowledge and skills required to undertake this role. I performed a preliminary literature review before I began this study, to prepare the research proposal and verify a need for the study. After this literature review, a gap was identified: limited research was available about rural nurses in chemotherapy administration. It appeared that no study had investigated the perceptions of rural nurses in chemotherapy administration roles. As there was little information available, a structured approach was applied to the review, to give the best chance of finding any available published literature. As the research process commenced, the limited knowledge obtained from the literature review was placed aside to focus on the participants' views and reflections.

2.2 Searching the Literature

It is reasonable to explain the search process to the reader, to show that even though efforts were made to locate studies about the topic of interest, limited national and

international relevant research studies were found. Before beginning the literature search, keywords that would illuminate the research idea were identified with the help of a university librarian. The keywords were: *rural nursing, cancer, role, experience, perception, remote and regional area and chemotherapy administration*. Table 2.1 shows all search terms used to locate relevant studies.

Table 2.1: Keywords

Keywords				
Regional	Nurse	Chemotherapy	Perception	Administration
Rural	Nursing	Antineoplastic	Experience	Treatment
Remote		Cytotoxic	Perceive	Infusion
Outreach		Cancer		
		Neoplasm		

After this step, the databases for searching were determined. These included: PubMed, as it covers major nursing journals; Embase, as it includes some other European materials not included in PubMed; and the Cumulative Index to Nursing and Allied Health Literature (CINAHL), as it covers a vast amount of nursing and allied health literature (The University of Adelaide Library 2010). In addition, Boolean operators (and, not, or) were used to gather all keywords and to retrieve the most relevant studies.

The article's relevance was decided after reading the title and abstract, and then for an article to be considered it read more comprehensively which required multiple readings to justify its relevance to the research topic and to identify the gap in dealing with the topic. To ensure the search process was comprehensive and precise,

the SA Health, AIHW, Rural Health and National Rural Health Alliance websites were also browsed. This enabled all relevant publications to be identified and the development of a better understanding and knowledge of the rural health system in Australia.

2.3 Background and Literature Review

Due to the limited number of studies about the role of rural nurses in chemotherapy treatment, the literature review was divided into different focuses. These overall provide an integrated perspective of chemotherapy provision, particularly in rural SA. Firstly, the healthcare access burden for rural cancer patients, improvements in the access of healthcare services in rural areas, and the education provided to rural clinicians to undertake this expanded role are highlighted. Then the limited studies investigating the role of rural nurses who administer cancer treatment, and interstate provision of chemotherapy administration in rural Australia are commented on.

2.3.1 The Changing Role of Nurses in Rural Cancer Care

2.3.1.1 Healthcare Access Burden

Cancer disease has the greatest burden of any disease in Australia. Approximately one-third of people diagnosed with cancer live in rural Australia, where the majority of tertiary cancer care services are unavailable (AIHW & AACR 2012). According to Heathcote and Armstrong (2007), there are inequalities in cancer survival and disparities in cancer treatment among people living in rural and remote areas of Australia. As there are few expert cancer services available locally for rural patients, rural residents have had to travel or relocate to access specialist care. In a

study by Underhill et al. (2009), the researchers surveyed 161 regional hospitals administering chemotherapy in Australia. They found that 38 per cent of these hospitals had neither a resident nor visiting medical oncology service. In addition, 61 per cent of these hospitals had an urgent need for psychological services and support (Underhill et al. 2009). In addition, the mortality rates of some cancer types are higher in people living in regional areas compared to their metropolitan counterparts (George, Ngo & Prawira 2014). A study by the Clinical Oncology Society of Australia (COSA) (2012) found there were marked deficiencies in cancer services in rural and regional areas of Australia, and that the quality and availability of services directly influenced survival rates (National Rural Health Alliance & COSA 2012). In addition to the deficiencies in rural cancer services the access to treatment is another issue for rural residents.

Residents in remote and rural areas with cancer experience barriers to accessible treatment. While it has been shown that nearly all patients undergo treatment despite the barrier of distance, rural residents experience a greater level of hardship related to treatment and travel than their metropolitan counterparts (Zucca et al. 2011). Some difficulties faced by rural cancer patients include: travelling a long distance to receive chemotherapy; being away from home and family, and staying in an unfamiliar place; chemotherapy side-effects (nausea, fatigue); and travelling back home after treatment. In an effort to address these issues, the Australian government has been working with COSA and other rural cancer professionals, resulting in three key initiatives, which will be discussed in the following sections.

2.3.1.2 Improving and Facilitating Access to Health Services in Rural Areas

In its efforts to improve cancer care for people living in rural areas, COSA (with other cancer care professionals) recommended and advocated for the establishment of Regional Cancer Centres (RCCs) that could provide multidisciplinary care and improve access for rural cancer patients (Boyce 2009). As part of the Australian government major infrastructure program to build a world-class cancer care system, \$560 million was committed in the 2009–10 budget to establish a network of best practice RCCs and associated accommodation facilities (Department of Health 2013). There are 26 RCCs and associated accommodation facilities across rural and regional Australia. The aim of this initiative is to improve access and support for cancer patients in rural and remote Australia (Department of Health 2013). As a result, people with cancer living in some rural and regional areas are now able to receive cancer care and treatment closer to home. In addition, clinicians in rural areas (GPs and nurses) have undergone further training that has allowed them to be accredited to delivery of some cancer treatments that has ultimately allowed them to expand their practice and accommodate changes in their roles. Chemotherapy administration has therefore recently become part of some rural nurses' roles, including in SA. These nurses have received education about cancer and chemotherapy administration, for example via the RCMP in SA (Hoon et al. 2009); however, the effect of this expanded role has not been explored.

2.3.1.3 Linking Regional and Metropolitan Cancer Services

Seven nationwide cancer service networks were developed in 2009 to 2010, to link regional and metropolitan cancer services for better patient outcomes. This was

achieved by initiating the Cancer Service Networks National Program (CanNET) under Cancer Australia (CA). The overall achievements—as discussed in the final national evaluation report by Miller (2009)—are described below. Firstly, the network was developed by bringing interested people, who would not normally come into contact with one another, around a common module to plan a strategic framework for cancer services. Secondly, consumer engagement was enabled; indeed, CanNET Victoria and SA developed a consumer participation strategy and effectively involved consumer in-service planning, delivery and evaluation. Thirdly, multidisciplinary care and primary care involvement was ensured through the multidisciplinary team process. The subsequent national report showed that network members better recognised and understood the importance of multidisciplinary care, alongside better engagement with the primary care sector. Fourthly, agreed referral pathways were developed to improve practice quality and consistency. Currently, all CanNET networks have developed agreed referral pathways. Fifthly, continuous professional development (CPD) was emphasised, where more than one thousand healthcare providers from across Australia participated in CPD activities through the CanNET program. This has helped to develop the availability of rural cancer services, in which nurses play a central role, for example, through chemotherapy administration (Miller 2009).

2.3.1.4 Educating Rural Healthcare Professionals Who Work with Cancer

Patients

There are two governmental funded programs to educate cancer professionals: the first is for medical staff and the second is for nursing staff.

The Education Program In Cancer Care (EPICC) was developed by the Medical Oncology Group of Australia (MOGA) for non-oncology specialist medical practitioners (Cancer Australia 2012). The nursing-related program is the National Cancer Nursing Education Project (EdCaN), designed for all nurses, whether cancer specialist, non-specialist or novice. The program includes educational resources for nurses with different degrees of contact and roles in caring for people affected by cancer. The EdCaN project has led to the establishment of the *National Professional Development Framework*, and a set of capabilities and competency standards expected of nurses working in cancer control. The framework adapts and applies the Australian Nursing and Midwifery Council (ANMC) competency standards to cancer control for registered nurses, enrolled nurses and nurse practitioners. It also demonstrates the competency standards for specialist cancer nurses (Aranda & Yates 2009). The non-cancer specialist nurses who administer chemotherapy in rural areas could be categorised in the EdCaN as being in the group of the many nurses who participate in the care of patients affected by cancer, but without having a predominant focus of their practice in specialist cancer control. The framework also fosters and encourages on-going learning and research to improve current practices of cancer control. As such, the research in this current study will focus on the current practices and experiences of rural nurses who administer cancer treatments, exploring their learning and educational needs.

Prior to the establishment of Cancer Australia, in 2005 the Department of Health and Ageing awarded grants to 21 Australian organisations, to help them develop mentoring systems that linked cancer professionals working in regional, rural and remote areas with major urban hospitals. There are 21 projects Australia wide which have four main foci:

1. Mentoring relationships and/or clinical exchanges for health professionals.
2. Delivering education and training in regional and rural areas (often using staff from larger cancer centres).
3. Families and children.
4. Establishment of multidisciplinary teams and/or care (MDTs/MDC) in rural and regional areas (Cancer Australia 2013).

2.3.2 Limited Research on Rural Nurses Working in Cancer Care

2.3.2.1 Internationally

Few national and international studies have addressed the role of nurses administering chemotherapy in rural settings: those conducted have mainly focused on the nurse practitioner role, a result of rural nurses' expanded roles. For example, an important (but dated) article by Bushy (2002) from the United States of America (USA) compared and contrasted nursing practice in rural areas of Canada, Australia and the USA. Bushy (2002) highlighted that in these three nations, much work was taking place to prepare nurses for advanced and expanded practice roles, such as nurse practitioners. Ten years later, Dallred, Dains and Corrigan (2012) stated that the role of rural and remote cancer nurses would expand as a result of decreasing the number of oncology specialists.

Unfortunately, the significant role of rural nurses who are non-specialist cancer nurses, but who administer chemotherapy, has not been addressed specifically in the literature. Thus, it is the focus of this researcher's interest, due to its important and topical implications for cancer care in rural SA.

2.3.2.2 Nationally

As outlined in the previous sections, Australian educational needs for rural and regional nurses involved in cancer care have been addressed through the implementation of cancer treatment provisions in rural areas, and training for involved healthcare staff. Below I will highlight the programs that have been developed and implemented to facilitate chemotherapy provision in rural Australia.

South Australia

In its efforts to improve access to chemotherapy and cancer services for rural residents affected by cancer, SA Health developed, coordinated and delivered the RCMP, which was founded by the Australian Government Department of Health and Ageing (Hoon et al. 2009). The RCMP is a unique program in its structure and aims. It gave rural nurses and GPs opportunities to enhance their knowledge and skills in the delivery of chemotherapy and cancer care. The RCMP enrolled five rural GPs and 38 rural nurses, who attended a five-day clinical placement at one of three cancer care specialist units in metropolitan SA. The objectives of the program were knowledge acquisition and transfer of experiences between metropolitan and rural areas (Hoon et al. 2009). The program enabled patients affected by cancer to access treatment closer to home, rather than travelling to Adelaide (SA's capital city). It also equipped rural clinicians with new skills and knowledge about cancer and cancer treatment. The perceptions of those who have undertaken this training and expansion of their role has not yet been explored; part of this work's purpose was to investigate the perspectives of rural nurses who were either involved in this, or a similar program, in SA. The RCMP was conducted once, and there was no

clear reason for the program's discontinuation. Additionally, it was not clear from the program evaluation (done by Hoon et al (2009)) what happened in centres where staff did not receive training.

A second state-wide chemotherapy education and assessment program is also being implemented in SA, using the ADAC program developed by the Cancer Institute of NSW. This standardisation of training and competence was identified in the *South Australian Cancer Control Plan 2011–2015* as a priority. Now all rural chemotherapy nurses in SA have to complete the ADAC modules, attend a workshop and demonstrate competency assessment in a tertiary hospital for a three-day clinical placement to be accredited for administering chemotherapy. As a result, formally trained nurses are now administering chemotherapy in rural centres where this was not previously the case (Calver 2014, pers.comm., 23 July).

Queensland

In Queensland, a study by Dewar et al. (2003) evaluated regional and rural nurses' perceptions of an intensive mode, post-graduate cancer nursing education program. Programs attended by respondents (147 rural oncology nurses) were: Cancer Nursing for Enrolled Nurses, Palliative Care for Registered Nurses, Introduction to Cancer Nursing for Registered Nurses, Breast Cancer Nursing for Registered Nurses, and Chemotherapy Awareness for Registered Nurses. Respondents working in highly accessible and accessible-to-very-remote areas (as classified according to the ARIA) were surveyed after attending the programs. The results suggested that "intensive mode cancer nursing education programs were a preferred and effective learning mode for regional and rural nurses" (Dewar et al. 2003, p. 1). Respondents

reported that they would like further education in pain and symptom management, psychosocial and palliative care and communication skills. The study did not explore the perceived roles of rural nurses and their experience of chemotherapy administration; instead it evaluated the nurses' perceptions of a particular mode of education.

New South Wales

In 2007, two rural cancer nursing education pilots were conducted in rural NSW, providing rural nurses with increased opportunities to access face-to-face education in a regional centre (Adams, Sinclair & Bishop 2007). No further details were found about this specific program.

However, the Cancer Institute of NSW has developed a significant web based information resource called eviQ, which provides health professionals with evidence-based, peer reviewed best practice cancer treatment protocols and information (Cancer Institute NSW 2014b). EviQ is not only utilised in Australia, but is also being accessed in over 56 countries. It gives users access to standardised, and evidence-based information (Cancer Institute NSW 2010).

The ADAC training course was developed by Cancer Institute NSW and uses eviQ content. It supports health professionals develop the necessary knowledge and clinical skills to administer antineoplastic drugs and handle related waste safely. The ADAC course includes high quality interactive scenario-based eLearning guides, eQuizzes, supervised clinical practice, competency assessments and a clinical skills workshop to consolidate theory into practice (Cancer Institute NSW

2014a). Currently, this course is used widely in Australia. Indeed in SA nurses need to prove their proficiency after completing the course to be eligible to work with, and administer, chemotherapy.

Western Australia

The Western Australian (WA) Department of Health conducted the cancer mentoring program for rural clinicians—Improving Outcomes in Cancer Care. The aim of this program was to increase the knowledge of contemporary cancer care among rural healthcare workers, including registered and enrolled nurses, allied health staff and Aboriginal health workers (Cancer Australia 2013). To the author's knowledge, this program has not yet been evaluated.

Victoria

In response to recommendations by the Department of Human Services in Victoria, Gippsland Regional Integrated Cancer Services (GRICS) was formed in October 2004. Subsequently, Gippsland Mentoring Program for Cancer Professionals and Latrobe Regional Hospital was developed (Craighead 2012). The focus of the program was to Fostering mentoring relationships and/or clinical exchanges for rural nurses and surgeons in Gippsland (Cancer Australia 2013).

Northern Territory

The Department of Health and Community Services NT has developed the Hub and Spoke Cancer Mentoring Program. The aims of the program were to increase the exposure of NT health professionals to best practice methods in cancer care and provide an enhanced level of care to cancer clients in regional and remote hospitals

in the Northern Territory by supporting a network of multidisciplinary health professionals in sustainable mentoring relationships (Cancer Australia 2013).

Based on the extensive search conducted by the researcher there were many and different mentoring programs in the whole previous territories and states. However there was no data about any other similar mentoring programs in the Australian Capital Territory and Tasmania.

In summary, work has been done to decrease inequities in cancer outcomes. Educational courses have been conducted to up-skill cancer professionals, but these mainly focused on oncology knowledge and skills. There is no study to date that has investigated the experiences of rural nurses who administer cancer treatments, how they perceive their roles in rural areas, and whether they feel equipped with sufficient knowledge and skills to care for the person undergoing cancer treatment. By undertaking this research, I wanted to determine if nurses think these programs give them sufficient skills and knowledge to care for a person with cancer and receiving cancer treatment in a rural setting.

2.4 Conclusion

Work had been done to facilitate access to specialised health services in rural Australia, by means of developing cancer treatment centres in rural areas and to equip rural nurses with cancer knowledge and chemotherapy administration skills. This expanded role of rural nurses has not been previously investigated. I used all my search experiences, efforts and library resources to locate contemporary studies regarding the role of registered nurses who administer chemotherapy in rural areas,

but few relevant studies were available. This had supported our assumptions about the literature gap concerning the role of rural nurses who administer chemotherapy.

As this study was conducted in several cancer units in rural SA, I explored what cancer-related courses the participants had completed, if they felt equipped to undertake this role after attending a particular course and how they perceived their role administering cancer treatment in a rural setting.

Chapter 3 Methodology

Preface

In this chapter, the reader will be introduced to the research paradigm used in this research, the methodology and the theoretical framework that guide the research process, and finally the rationale of using this particular methodology to answer the research question.

3.1 Introduction

Qualitative research is a type of scientific research that seeks to understand a research problem from the perspective of the research participants or population. The relevant literature contains no one single definition for qualitative research; however, most emphasise the social reality of individuals, groups and cultures. The following definition has been chosen, as it was recently illuminated and described in nursing literature: ‘*Qualitative research* is a form of social inquiry that focuses on the way people interpret and make sense of their experiences and the world in which they live’ (Whitehead 2013, p. 104).

Qualitative research intends to understand the life experiences, interpretations, perceptions, opinions and feelings from research participants’ perspectives. As mentioned above, qualitative research is a broad paradigm that covers different research approaches. These different approaches include but are not limited to descriptive explanatory research, phenomenology, ethnography, grounded theory and critical research. Using a particular research approach or methodology is

dependent on the nature of the study and the type of knowledge the researcher wishes to uncover (Whitehead 2013).

Regarding the determinants of using a particular research approach, Whitehead noted the following:

Regardless of approach, research is conducted to examine and expand current knowledge and understanding of different concepts and phenomena within a particular philosophical framework. Research is therefore guided by the following concepts: ontology, epistemology and methodology (2013, p. 23).

It is important to note some vital terms and concepts that will be used in this chapter. Hence when reading, hopefully the reader will understand the concept of this chapter and link its parts. Below are the definitions of the concepts and terms that will be used frequently in this chapter:

Research paradigms: are patterns of beliefs and practices about the nature of reality and knowledge construction shared by communities of researchers; thus, all disciplinary research is conducted within paradigms (Weaver & Olson 2006).

In general, research is divided into two broad paradigms: qualitative and quantitative, and those are subdivided by different methodologies. Particularly in nursing, researchers have used different paradigm approaches, such as, positivist, post-positivist, interpretive and CST to enrich the available knowledge, and widen the direction of theory

development (Whitehead 2013). Weaver and Olson (2006) claim that adherence to a single paradigm predetermines the direction of theory development for a discipline, and ultimately delimits the knowledge available for use in practice. In this research, I will use the methodology of critical theory. In addition, I would recommend different methodologies for the same research topic to contribute to this aspect of nursing literature.

Ontology: is the study of existence. It concerns questions about what exists (e.g., what is the nature of reality?): this concept provides the worldview that guides the study (Whitehead 2013).

Epistemology: is the study of knowledge. It concerns questions about what we can know about what exists. For example, how do we know what we know? (Whitehead 2013).

Methodology: provides a framework and design for conducting a study. It concerns the manner in which we gain knowledge, how we know the world or gain knowledge about it (Denzin & Lincoln 2005).

The connection between the three concepts is that, if social reality consists of the experiences and understandings of people, and then reality will be the knowledge of those experiences, while the methodology is the framework that we conduct or use to form and to build our understanding.

3.1.1 The Appropriate Methodology

Choosing the right research methodology to answer the research question is relatively complex. According to Hoskins and Mariano (2004), researchers should understand some characteristics that help them choose the appropriate methodology for their research. Researchers should choose a methodology with the potential to answer the research question, be relatively precise and efficient, and produce valid and reliable results.

3.1.2 Critical Social Theory in a Qualitative Paradigm

In this research, I claim that CST or critical theory (used interchangeably in this research) is the most appropriate methodology to answer the research question. Hence, a qualitative paradigm is the approach planned for this study, and CST is the methodology that will answer the research question. The justification of using this particular methodology over others, and how CST will answer the research question, will be detailed in the following discussion.

3.2 What is Critical Social Theory?

In the literature, the term ‘CST’ or ‘critical theory’ was initially referring to the work of the Institute for Social Research, better known as the Frankfurt school, but the work has now extended beyond these beginnings. The Frankfurt school was not a specific place. It was a school of thought that referred to a group of mostly German theorists who developed powerful analyses of the changes in Western capitalist societies (Granter 2009). According to Rasmussen (1996), critical theory

is a metaphor for a certain kind of theoretical orientation: Kant, Hegel and Marx were the first leaders of this school of thought. The theoretical perspectives of the originators of critical theory were based on creating new perspectives and theories about how we understand and develop knowledge about reality. Critical theory was systemised by Horkheimer and his associates at the Institute for Social Research in Frankfurt, and was finally developed by a group led by Jürgen Habermas, who has sustained it (under various redefinitions) to the present day. Indeed, Rasmussen (1996) in the previous statement has mentioned all the key theorists who founded and developed the critical theory, not forgetting other respected and brilliant theorists.

3.3 History of Critical Theory (The Frankfurt School)

Discussing the history of the origins and development of critical theory is overwhelming, but interesting. As with any philosophical theory, ‘critical theory’ has undergone different stages and reformations since its origin in the seventeenth century (Morrow & Brown 1994; Rasmussen 1996). This reforming and aesthetic process has helped sustain critical theory over this period. Below is a historical narrative of critical theory. This history will be divided according to the generation of theorists who contributed to the development of critical theory. Discussing the history of critical theory will help the reader better understand the origins, development and current use of critical theory as a research methodology.

3.3.1 Immanuel Kant (1724–1804), Georg Wilhelm Hegel (1770–1831)

Critical theory in general started with German critical philosophy, which began with Hegel's critique of Kant. At that time, the term 'critical theory' was not in use. Hegel's critique mainly focused on the philosophy of action and reflection. Hegel successfully combined the two philosophies, giving rise to the most significant German philosophical discourse: that of the proper relationship between theory and human practice (praxis). To demonstrate the interrelationship between thought and action, Hegel proposed the following example, 'the master-slave dialectic'. In his attempt to demonstrate the proposition about self-consciousness, Hegel stated that the slave transforms his or her identity by moulding and shaping the world, and thus becomes something other than a slave (from slavery to emancipation) (Rasmussen 1996).

3.3.2 Karl Marx (1818–1883)

The most well-known philosopher of this time is Karl Marx, who was not only a philosopher but also a social theorist, economist, political scientist and revolutionary activist. Marx is perhaps best known for his political work, but also he wrote extensively on social science, and his writing has influenced the way people think (Porter 1998).

Marx argued from Hegel's critical insight into the context of modern society and concluded that the course of human freedom, culminating in the modern state, was not emancipation at all. Indeed, the promised liberation of modern society from the shackles of the Middle Ages had not occurred. Hence, the task of social

emancipation, which could be conducted by critical reflection, would lead the very agents of that reflection to a further task: namely, the transformation of society through revolution. Although the traditional assumption was that the purpose of reflection was for knowledge itself, Marx was not convinced by this notion and initiated ontological and epistemological questioning about the nature and origin of this knowledge. In 1843, Marx answered these questions in the form of class theory, in which the newly emerging proletariat (low class workers) were to play the central role (Rasmussen 1996). He stressed the importance of labour, arguing that human activities of production and reproduction are what gave humans our uniqueness. He was critical of capitalism, as he believed that workers were exploited and that capitalism prevented human development.

Marx argued that the class division between owners and non-owners of the means of production created a fundamental division in society, and that this division drove history forward. He said that as long as this division remained, there would be social conflict. Marxism developed the idea of the proletariat and workers' movements for social transformation (Porter 1998). As Hegel asserted, like any economic system, capitalism bore the seeds of its own destruction. Marx went beyond that and—based on historical scientific investigations—he developed a predictive formula announcing the end of capitalism based on the 'falling rate of profit'. Marx said that as capital advanced, it would be difficult to generate more profit, which would lead to a loss of incentive and immanent self-destruction (Rasmussen 1996).

Although Marx did not always write specifically on issues of health, he claimed that the exploitation and poverty suffered by the oppressed proletariat resulted in

the preventable destruction of their health. For this, he blamed capitalism (Porter 1998). Marx died in 1883, and left tremendous and enormous ideas and theories in social science; he also left the door open for scientists to build on his work and challenge his theories.

3.3.3 Max Horkheimer (1895–1973)

Horkheimer was a German philosopher and sociologist, famous for his work in critical theory, as a member of the 'Frankfurt school' of social research. According to Rasmussen (1996), the term 'critical theory' owes its definition (more than anything else in the twentieth century) to Max Horkheimer. Horkheimer became the director of the Institute for Social Research (established in 1922, in affiliation with the University of Frankfurt) in 1930, after the departure of the director Karl Grunberg.

Before Horkheimer became its director, the Institute for Social Research was considered analogous with science. Hence, the Institute conducted research and work on capitalist accumulation, economic planning and imperialism. When Horkheimer was made director, certain events in Germany and the world had reshaped the Institute and led it away from Marxist orthodoxy. These global events were the rise of fascism, the breaking down of the workers' movement and the Stalinisation of Russia. The Institute roster at that time included Theodore Adorno, Leo Lowenthal, Erich Fromm, Friedrich Pollock, Herbert Marcuse, Walter Benjamin and others. It is claimed that modern critical theory can be dated from this period (Granter 2009; Rasmussen 1996).

The problem with modern critical theory is the demise of the working class as an organ of appropriate revolutionary knowledge and action. Horkheimer and colleagues believed that to de-couple the link between theory and revolutionary practice, as was commonplace in Marxist theory, would mean forging a unique theoretical perspective in the context of modern thought. It will not be easy to study worker movements or to define Marxist science. It was anticipated that the Institute would show its character in line with emergent local and international changes. Hence, Horkheimer took critical theory in the direction of epistemology and began to consider more general questions regarding theory and meaning. By doing so, Horkheimer moved the critical theory approach from a transformative tradition in German thought (and as it was shaped by Hegel and Marx), to the constitutive tradition in knowledge analysis. Examples of the constitutive elements of knowledge as Horkheimer described include the distinction between individual and society, the concept of society as bourgeois and the idea that knowledge is centred in production. According to Rasmussen (1996) Horkheimer was not prepared to follow his own unique vision. Horkheimer died in 1973, and paved the way for contemporary theorists and scientists to challenge and build up on his work.

3.4 Jürgen Habermas and Critical Social Theory

Jürgen Habermas is considered the most iconic contemporary German critical social theorist of the twentieth and early twenty-first centuries. The aesthetic and rehabilitation of CST have been taken to a higher level with Habermas. He rehabilitated the notion of critique in critical theory. The work of Habermas is more popular among philosophers and social scientists, as it addresses problems that are

familiar to them. Habermas developed a systematic methodological revision of critical theory in the late 1960s (Morrow & Brown 1994).

Habermas claimed that the problem of critical theory was the ‘validity of knowledge’, where the link between validity and critique can be established through the transcendent moment of self-reflection, associated with autonomy and responsibility. Indeed, this has shifted Habermas’ work from the philosophy of subject to the philosophy of language, thereby constructing the theory of communicative action. Habermas wrote extensively on the theory of communicative action (or communicative rationality), where he located rationality in the structure of linguistic communication, rather than in the structure of the universe (Rasmussen 1996).

It is interesting to note what Habermas (1984) said about how critical theory led him to the philosophy of language and the theory of communicative action, claiming the validity within it:

A communicatively achieved agreement has a rational basis; it cannot be imposed by either part, whether instrumentally through intervention in the situation directly or strategically through influencing decisions of the opponents. A communicative action has within it a claim to validity which is in principle criticisable, meaning that the person to whom such a claim is addressed can respond with either a ‘yes’ or a ‘no’ (1984, p. 287).

This theory has advanced the objectives of human emancipation and maintained a universal moral framework. It states that all speech acts have an inherent end, the goal of mutual understanding, and that human beings possess the communicative

competence to bring about such understanding. Some argued that this theory replaced older critical theory, but to Habermas this was part of the reconstruction and rehabilitation of critical theory (Rasmussen 1996).

The two criteria for analysing and validating discourse, as identified by Habermas, are content and relationship. Content deals with the truth and clarity of every communicative action, while relationship deals with the appropriateness and sincerity of those actions. For Habermas, participants in a scientific discourse are committed to finding a solution by force of better argument, and must adhere to domination-free cooperation and communication. Facts may not be misrepresented, and jargon may not be used to mystify, as this would violate the principles of ideal discourse (Morrow & Brown 1994).

3.5 Definition of Critical Social Theory

There are many similar definitions of CST, but the one used in this thesis is the definition applied by Horkheimer and his associates from the Institute for Social Research:

Critical theory is a social theory oriented towards critiquing and changing society as a whole, in contrast to traditional theory oriented only to understanding or explaining it: a theory is critical to the extent that it seeks human emancipation, 'to liberate human beings from the circumstances that enslave them' (Horkheimer 1982, p. 244).

Theorists and researchers have described the circumstances that enslave human beings by oppression and the unequal distribution of power and resources. These

oppressions might be social, political or economic circumstances (Lutz, Jones & Kendall 1997; Stevens 1989). From its beginning, the intention of CST (as perceived by Marx), has been to transform or change social situations through people's liberation. However, liberating or emancipating people should be preceded by raising consciousness. Thus, CST has two inseparable components: self-consciousness and emancipation. Marx elicited the idea of interpreting the world to change it. This was a philosophical perspective based on Hegel's concept of moving a subject through the process of self-reflection, coming to know itself at a higher level of consciousness. Hegel was able to combine a philosophy of action with a philosophy of reflection, so that activity or actions were necessary moments in the process of reflection (Rasmussen 1996).

In this thesis, I will use this particular methodology of 'CST' to answer my research question, aiming to shed light on the self-consciousness concept as described by CST. By allowing the rural nurses who administer cancer chemotherapy to reflect on their roles and practices, it is hoped that they will become more aware of their weaknesses and strengths, and be more capable of determining and deciding their educational, administrative and/or political needs. This research will not seek to implement action after the process of reflection, as discussed by Hegel and Marx, but will report and suggest some recommendations based on the results elicited from participants. The justification of using critical theory to answer the research question will be detailed later.

3.6 Critical Theory and the Research Question

Currently, critical theory has developed as a meta-theory beyond its origin in the form of critical hermeneutics associated with the Hegelian Marxist historicism of the early Frankfurt school (Morrow & Brown 1994). Critical theory is considered an alternative research paradigm, as discussed by Habermas. Critical theory has the ability to measure social facts and to develop general laws of social life. Morrow and Brown noted that:

The justification of critical theory as a research program thus has found independent corroboration, at least as a critique of positivism. And in the context of critical realism and certain developments in poststructuralist and feminist theory, it also finds some further complementary support (as well as constructive criticism) (1994, p. 142).

A qualitative approach is the design planned for this study, and CST is the methodology that will be used to answer the research question. CST serves to empower groups to be conscious about the positions and roles they provide. It allows groups and individuals to reflect critically on their practices or situations, and critique them to generate change. Habermas believed that understanding any aspect of social phenomena could only be achieved if it was related to the history and structure in which it was found (Whitehead 2013; Williamson & Prosser 2002).

The research process will enable rural nurses who administer chemotherapy to reflect on their roles and daily practices, and to consider if these roles and practices reflect their scope of practice. It is a dialectic process between the researcher and the interviewee. This is what Habermas claimed about the validity inherent or

concealed within linguistic communication in his theory of communicative action. This situation can be achieved only if individuals are aware of and free from the hidden oppressions in their working lives (Fulton 1997). Indeed, we cannot claim that rural nurses in this study are facing constraints and oppressions in their working lives unless we analyse the data collected in interviews. Hence, CST will be used to promote praxis (reflection with action), which triggers the self-reflection and awareness, followed by emancipation. It is claimed that reflection without action is meaningless. The scope of this research is to enable conscientiousness in participants' reporting their perceptions, and if there are any oppressions or constraints hidden in participants' reports, as discussed by Hedin (1987).

The theoretical framework of the study will be based on Habermas's development of critical/emancipatory knowledge, as an alternative theory of knowledge to positivistic science. Unlike the single interest of positivist knowledge, Habermas suggested three basic forms of scientific interest in knowing about the world: first, empirical-analytical interest, which is rooted in a desire for potential technical control over external and internal natures; second, hermeneutic-historical interest, which is based on the ideographic interpretations of human activity, founded on hermeneutic principles. This is also a historical interest, as the meanings that come to constitute societies are the outcome of the development of historical tradition; third, critical-emancipatory interest. Simply, this is a special aspect of the hermeneutic-historical tradition, but it involves a different attitude towards meanings. Rather than describing and understanding them, it criticises and transforms them (Morrow & Brown 1994; Stevens 1989). Habermas promotes critical theory as an essential part of scientific knowledge, which describes 'distortions and constraints that impede free, equal and un-coerced participation in

society' (Stevens 1989, p. 58). Social science will enable individuals to see these conditions and promote self-reflection to achieve freedom. Self-reflection is the fundamental methodological approach (Fulton 1997).

Based on the communicative theory and reflection process, I aim to engage with my participants in a dialectic manner to trigger self-consciousness about their role and uncover any hidden oppressions, constraints or difficulties in their daily roles.

3.7 Conclusion

This chapter has presented the research paradigm and the methodology used in this study. This chapter has presented the framework that the study used to guide the research process and answer the research question. Choosing the appropriate methodology to answer the research question was significant. Attention needed to be paid to some important elements that would assist in selecting the right methodology and framework successfully.

Critical theory has undergone different stages and a reforming process since its beginning in the seventeenth century with Kant, Hegel and Marx from the Frankfurt school, until the present day with Habermas. Critical theory has become a research program with a unique and scientific form of knowledge generation, which was the 'critical-emancipatory interest in knowing'.

As mentioned previously, critical theory has two main components: 'self-reflection (self-awareness) and action (emancipation)'. CST highlights the self-consciousness concept as described by CST, and within the process described earlier in this chapter. Creating a change or emancipation after the reflection process is not the

researcher's role. This is because suggesting changes to the workplace, or to nursing practice or healthcare, is a long and complicated process and not the individual responsibility of the researcher. However, what this research can do instead is, by reporting the results as per the participants' perspective, inform the relevant authorities if change is necessary. More importantly, the participants will be better equipped to advocate for change and use the study results to support their position.

Chapter 4 Methods

Preface

This chapter provides an overview of how this research study was undertaken. It will describe the method used to collect data, and how this is congruent with the methodology used to answer the research question. It will also describe the population and sampling strategy, the setting of the study, and the data analysis process used.

4.1 Introduction

Methods in research are approaches (or tools) that researchers use to facilitate the research process. They can include deciding on a study population, the study setting, inclusion and exclusion criteria, data collection, recruitment to the data analysis and ensuring participant confidentiality. In qualitative research, there are different methods for data collection that include observations, visual or textual analysis and interviews with either individuals or groups. However, the most common data collection methods used in healthcare research are the interview and focus group (Gill et al. 2008).

Interviews and/or focus groups are the preferred methods in critical theory studies. This is because the relationship between researchers and participants in critical theory is a dialogue, the process that is obvious in interviews (Boog 2003). According to Habermas (1979, cited in Fulton 1997, p. 530), there are ‘validity claim[s]’ in all human linguistic communications. This involves speech being intelligible, meaningful and truthful. In addition, Hedin (1986) stated that

researchers in critical methodology are building a dialectic process with the research subjects by starting with a question that uses dialogue to gather data.

Individual interviews were chosen as the method to trigger self-awareness of situation and knowledge, giving participants the power to look for and suggest changes related to their situations. Mooney and Nolan (2006) have stated:

Liberation stems from the development of self-awareness and knowledge, with a resulting power over forces of control. Forces of control such as, habits, convictions, meanings and rules (p. 241).

4.1.1 Pilot Interviews

To test the feasibility and clarity of the interview questions, two pilot interviews were conducted with an allied health practitioner and a registered nurse. Details of the pilot interviews are explained below.

Pilot studies are highly supported in nursing literature as a procedure used to prepare for a large research project (Connelly 2008). Pilot studies may prevent unexpected problems that might emerge during the major study. Additionally, they use the same methods and protocols that will be used in a future study (Connelly 2008; van Teijlingen & Hundley 2002). Pilot studies have numerous reasons and purposes. They can be used to test instruments that will be used in the future study, the sampling and recruitment procedures, and the data collection tools, such as surveys, questionnaires and/or interview questions (Connelly 2008). Indeed, pilot interviews are highly recommended, especially if the interviewer is a novice researcher (Lopez & Whitehead 2013).

Aiming to test the interview questions, two pilot interviews were undertaken. The first interview was with a metropolitan healthcare clinician, and the second was with a cancer nurse who had experience in chemotherapy administration in rural and metropolitan hospital. These interviews assisted me in different ways. First, they assisted me examine the feasibility of my questions and whether the questions were clear, understandable and specific. Second, they helped me to form new explanatory questions that allowed participants to add more information about the research topic in relation to the methodology used. Third, they aided me (as the primary researcher) to evaluate and develop my interviewing ability and skills, and to manage the time needed for interviews.

The pilot interviews were conducted in a location that the interviewees felt comfortable in. The first interview lasted 18 minutes: this was because the first interviewee was a healthcare clinician not a nurse, and did not answer some questions that only related to experienced rural nurses. The first interview helped me to practice the interviewing process, to manage my time, and to familiarise myself with the recording device.

The second interview was with an experienced cancer nurse working in a metropolitan hospital but with two years experience in a rural hospital in a chemotherapy administration role. The second interview lasted 22 minutes. The interviewee answered all the questions, but because she did not have current experience, she did not discuss or explore some questions extensively. Indeed, some questions could not be answered because they were intended for nurses currently practicing in the rural area.

The second interview helped me to ask the questions more confidently, and to create a dialectic interview. It helped me to highlight the questions I wanted the interviewee to explain or discuss more. From this interview, I was able to develop three additional questions related to the topic and the methodology used in this research. These questions were:

1. *Do you feel that being in a rural area has affected your care delivery? (I mean if you are a chemo nurse in a metropolitan area, how will your care delivery will be different to how it is now?).* In this question, I was trying to explore their opinions on their preparedness in taking this role, and whether they felt that if they were in a metropolitan hospital, they would have different or more current knowledge and skills.
2. *Do you have a network and contact with metropolitan cancer settings that you utilise as external resources?* I added this question to the pre-asked question about 'Using Online or External Resources' that rural nurses might use. From this question I wanted to explore what kind of help rural nurses in cancer treatment roles might ask for from metropolitan cancer nurses or oncologists.
3. *If you have an idea or a suggestion that you think it will enhance, support or improve your practice or workplace, to whom you would take this idea?* By asking this question, I wanted to explore if they had a pathway or instructions that they followed to speak about their suggestions and take them to a higher level or authority. If 'YES', have they utilised it? And was it effective?

The pilot interviews assisted me in different ways; in managing the interview time, developing my interview skills by performing a dialectic interview and being confident in asking the questions. Finally, they helped me to make new and important questions and ideas.

4.2 Data Collection

4.2.1 Interview

The method used to collect data was semi-structured interviews. The individual interviews allowed participants to reflect on their daily practices and discuss their perceptions of their extended role of rural nursing in cancer care, especially in chemotherapy administration.

Semi-structured interviews consist of several questions that help to explore the area of interest, but they also allow the interviewer or the interviewee to deviate, to explore a new idea or ask or respond in more detail. This approach helps to discover new information that is important from the interviewees' perspective, but may not have been considered by the interviewer previously (Gill et al. 2008).

Each participant received the interview questions four to five days prior to his/her interview time. This was to familiarise participants with the interview questions and to make them think, prepare and be ready to answer the questions during the interview. One participant commented *'it alleviated my stress and made me feel more comfortable, I know in advance what sort of questions I'll be asked. It is really good because this is my first time [participating] in research'*.

4.2.1.1 Categories of the Interview Questions

The interview questions were divided into seven sections (see Appendix 3):

1. About the general nursing experience and cancer nursing experience
2. About the chemotherapy administration role, specifically in the current workplace
3. About the participants' perceptions of being rural nurses with a chemotherapy administration role, and how they perceive their role in caring for cancer patients
4. About competency and qualifications, how did they become authorised to undertake this role?
5. About the day-to-day challenges
6. About using external resources and getting external help and support
7. Finally, participants were asked to make suggestions to promote, develop or enhance the role of rural nurses in cancer care.

4.2.1.2 Physical Setting of the Interviews

The interviews were conducted in a quiet room at the participants' workplace, where they felt comfortable. To build trust and to develop a positive relationship with my participants, I tried to present and introduce myself carefully, to leave a profound impression on the respondents; this could have a positive influence on the success of the study (Fontana & Frey 1994). In addition, I was aware that my personal dress code and general presentation would have some influence on how comfortable a participant would feel, and how comfortable he/she would be to

disclose more information. Hence, I made an effort to portray a professional image during all interviews.

After obtaining the participants' consent, the interviews were audiotaped and then transcribed for analysis. Before starting the interview, I appreciated the participants' willingness and agreement to take part in this research. Then I went through the information in the participants' information sheet, together with my participant and asked the interviewee if he/she wanted further clarification. The participants were familiar with the interview questions because I had sent a copy of the questions earlier, and during the recruitment process. Participants were informed that they had the right to answer or to not answer any question that might be difficult, questions that made no sense or ones they felt did not apply to them. I clearly addressed the terms of confidentiality, and participants were happy to audiotape their voices. I prepared my interviewees when we moved from one section to another of the interview questions, to make the interview process more organised and smooth. During the interviews, I recorded any unusual body language or facial expression after each question on the question sheet. This is a non-verbal aspect of the interview (Lopez & Whitehead 2013). The predicted length of interviews was 30 to 60 minutes. Fortunately, participants answered all the research questions and added some valuable information.

4.2.1.3 Transcribing the Interviews

After every interview, I downloaded the recordings to my computer and had the interviews transcribed by a professional provider. The transcribers were English speakers and were experienced in this work. In the audiotaped recording, there was

nothing recognisable about participants' names or their workplace location. After two weeks, I obtained all the transcripts from the transcriber. Then I checked if the transcripts were 100 per cent identical with the records, by listening to each interview and comparing it with its transcript. After becoming satisfied with the records and the transcripts, I started the data analysis process; this will be described later.

4.2.2 The Setting

In rural SA, there are 12 chemotherapy services that administer low-risk chemotherapy and three medium-risk chemotherapy services. High-risk chemotherapy is only administered in metropolitan SA (in Adelaide). The units administering low-risk chemotherapy were targeted for this research, as nurses in these units had only recently taken on the role of chemotherapy administration. They did not administer chemotherapy frequently, due to their location and the limited scope of chemotherapy that units had been authorised to administer. Hence, their perceptions of their roles as rural nurses involved in cancer care may be different from those nurses who administer chemotherapy daily.

A key person from Country Health SA helped the researcher to target six rural health services and hospitals (out of the 12 that administer low-risk chemotherapy) in rural SA. These hospitals and health services are distributed around SA.

4.2.2.1 Geographical Location of the Study Setting

Based on ARIA+ classifications, as outlined in Chapter 1, the targeted hospitals of this study are moderately accessible, which means that they have a significantly

restricted accessibility of goods, services and opportunities for social interaction. They have been classified as both outer regional by ASGC and rural according to RRMA classifications. None of the study settings were in a remote area (Rural & Regional Health Australia 2014).

4.2.3 Population

In total, and based on the information provided by a key person at Country Health SA, there are 86 accredited rural nurses able to administer chemotherapy in the 15 sites (Calver 2014, pers.comm., 23 July). Of those, 66 rural nurses work at the 12 low-risk chemotherapy sites. Out of the 12 sites, only six rural chemotherapy services were targeted; the total number of nurses in chemotherapy roles who are working in these particular sites totals 35. The aim was to recruit six to eight of the total of 35 nurses.

4.2.3.1 Inclusion/Exclusion Criteria

Rural nurses who had been accredited to administer chemotherapy and were working in low-risk chemotherapy units in SA and attended the ADAC course were included in this study. There were no constraints on the length of experience. In contrast, all cancer nurses working in metropolitan or rural areas, but in higher-risk chemotherapy settings, were excluded.

4.2.3.2 Sampling and Participants

Sample size is usually not predetermined in qualitative research; the richness of data collected is more important than the number of participants. However, a

common range of participant numbers in qualitative research is something between eight to 15 participants, with some variation based on the study approach (Lopez & Whitehead 2013).

For this research, purposive sampling as discussed by Whitehead and Lopez (2013) was used to recruit participants; the reason for choosing this particular process is because the study's purpose is to provide a particular type of knowledge about the phenomena. Hence, participants should have the required experience and knowledge to provide in-depth information (Lopez & Whitehead 2013). The population was rural nurses who administer cancer treatment in rural SA. As mentioned earlier, a key person from Country Health SA provided the researcher with a list of key persons in six rural chemotherapy administration services in SA.

4.2.3.3 Rural Nurses' Willingness to Participate

Unexpectedly, I got emails from two nurses who met the study criteria, even before I started the recruitment process. Those two nurses had heard about the study from their Director of Nursing and they promptly expressed their willingness to participate.

4.2.3.4 Recruitment

An invitation letter was sent that included a participant information sheet and the consent form by email to those key persons in the targeted research hospitals. The inclusion criteria was clearly stated in the participants' information sheet, and those who met the criteria were asked to communicate directly with the primary researcher, either by email or phone, to arrange the location and interview process.

The recruitment process, from sending the invitation letter to the unit leader/senior nurse in the unit, until the targeted number of participants was achieved, was about 44 days. After the first email, three participants responded. Then two weeks later, a follow-up email was sent to the key persons and another two participants had responded and agreed to participate in the study, while another two respondents had expressed refusal to participate. Then a follow-up phone call was made to the units that had not answered our previous emails. This follow up call resulted in a further, three nurses from the same cancer unit expressing their willingness to participate, after more information was provided about the research project.

Respondents were recruited and received a call from the primary researcher to arrange an interview time. Participants autonomously chose the date, time and location of the interview. The interviews were running during the recruitment process (see interview schedule and recruitment time in Appendix 4). Saturation was reached after six participants were interviewed, but two more nurses were interviewed, as these interviews had already been scheduled. This was also done to ensure no new ideas were forthcoming or presented. The eight participants were from four rural low-risk chemotherapy administration units.

4.2.4 Data Analysis

Inductive content analysis is used in many nursing studies to describe data in a conceptual form. This is a method of analysing written, visual or verbal communication messages. Content analysis as a research method uses systematic and objective means to describe and quantify phenomena. Through content analysis, it is possible to distil words into fewer content-related categories (Elo & Kyngas

2008). According to Krippendorff (1980), content analysis aims to provide knowledge, new insights, a representation of facts and a practical guide to action: it is used as a research method that makes replicable and valid inferences from the data to their context. Inductive content analysis is recommended when little is known about the phenomenon, and the researcher in inductive content analysis derives categories from the data that explain the phenomenon from different aspects (Elo & Kyngas 2008).

The inductive content analysis process is represented in three phases: preparation, organising and reporting. In the preparation phase, the whole interviews were analysed as a unit as described by Graneheim and Lundman (2004). Second, I kept reading the transcripts over and over until I became immersed in and familiar with the data, and to understand and obtain sense of the whole (Elo & Kyngas 2008). In the organising phase, I looked for the commonalities between participants' narratives, where coding was applied manually for the common meaning units. I kept putting open coding or headings on the transcript margins while I read them. I placed as many codes as I thought appropriate to describe all aspects of the content. Next, I collected the codes and put them on a separate coding sheet, where I created categories easily. Having semi-structured interviews enabled me to group the codes easily. This was because the questions were flowing in order; hence, it was convenient and fluent to match and compare participants' answers and to extract the meanings of their narratives. Then, to reduce the number of primary categories, I started looking for similar categories; I then grouped the similar categories under higher-order categories. At the end, this has led me to the abstraction process, where similar events and incidents to the sub-categories were grouped to form the general categories. From the general categories, I developed the main categories.

Finally, in the reporting phase, I presented the results as the main categories interpreted or explained by the general categories, and the subcategories.

4.2.5 Trustworthiness

In qualitative research, rigour is linked to trustworthiness (Harding & Whitehead 2013). To judge trustworthiness, I showed the findings' credibility in different ways, and examined how well the categories covered the data. First, I collected data continuously to the point of saturation, where more data collected did not reveal new ideas. Second, the research supervisors reviewed the data analysis process. Third a key person from Country Health SA was asked to review the draft analysis and discussion chapters to consider the congruence and relevance of the information to the current practice. A clear description of the context, selection and characteristics of participants, data collection and process of analysis was provided to facilitate data transferability or fittingness.

4.3 Ethical Considerations

The research proposal was submitted to the SA Health Human Research Ethics Committee (HREC) through the Australia Online Forms for Research website. In addition, a site-specific application (SSA) was lodged to all six sites involved in this research. The recruitment process and data collection were commenced after confirmation of full ethical approval from the SA Health HREC and an authorisation letter from each site had been signed by the Director of Nursing at that specific site (see appendix 5). The approval process took eight weeks, with a

requirement to make minor changes to the information sheet and the invitation letter.

4.3.1 Participants' Anonymity

Using pseudonyms ensured participant anonymity. Before the interviews commenced, participants were asked to choose a pseudonym that they preferred to be used during the interview. I ensured that pseudonyms matched the transcripts and the researcher's notes, so they were used correctly in the data analysis. Additionally, the workplaces were given a code number.

For the purpose of higher confidentiality, and because there was only one male participant in the study, participants are not described by male or female names only in the reporting phase; instead, the pseudonyms have been replaced with two unrelated letters and a single number. I will be the only one who can recognise what these letters and numbers mean. This was because if I had just replaced the real name of my male participant, he still might be easily recognised by his manager and colleagues through his gender. However, pseudonyms and code numbers are still applied and documented in the transcripts and the audio records.

Using letters and numbers to represent the participants in the reporting phase ensured confidentiality of the participants and the setting where they worked during the research process and after completion. The University stored the audiotape and transcript securely and it will remain for seven years. After this, the transcript will be shredded and the audiotape will be deleted and discarded, in accordance with the National Health and Medical Research Council (NHMRC) (2007) guidelines and

procedures for the safekeeping and destruction of information. Only research supervisors and the Country Health SA expert will have a chance to assess the theme arising by reading the analysis and discussion to ensure that the student's analysis of the data is congruent with the raw data, and correct.

Participants were informed that the findings from this research would be used firstly for the purpose of this thesis, but may also be published in a journal article, and as a conference paper. They were assured that their confidentiality would be ensured in any form of data presentation through the methods outlined above.

4.3.2 Informed Consent

Informed consent in research means that research participants have received all the information needed for them to make a voluntary informed decision to participate in that research (Medical Dictionary 2014).

Each participant received a participant information sheet and a consent form before the recruitment process. Those who agreed to take part in this research were asked to email the primary researcher, then the participant and the researcher arranged a time to meet, to go through the participant information sheet, and to sign the consent form before the interview.

Prior to starting the interview, the interviewee was asked to give his/her consent and to express any concerns, or to ask for any clarification regarding the participant information sheet. No coercion was used with any potential participants and all were informed in a plain language statement that their participation was voluntarily. In the plain language of the participant information sheet, the participants were

made aware of the time commitment for the interview, and that the information would be audio recorded, that the participants would be anonymous and that the participant could withdraw from the study at any time without prejudice. (See Appendix 6 for the withdrawal, consent form and letter of invitation). The participants then read the consent form and signed it; this was witnessed and countersigned by myself and deposited in a safe place under locked conditions.

4.4 Conclusion

This chapter has outlined the entire research process. Based on the research question, the setting and population of the study were decided. Individual interviews were used for data collection, as the most congruent method for critical theory research. It was beneficial to undertake pilot interviews before the actual interviews as I was able to exercise my interview skills and become prepared. I was also able to prepare the recording device and to perfect, modify and organise the interview questions. Sending the interviews to a professional body for transcription ensured that time was used effectively and this was done following the pilot study, which demonstrated how long the transcription would take. Through an extensive review (by listening to the recordings and reading through the transcripts), I ensured that all transcripts were identical to the recordings.

Although the time intended for this study was limited, the ethical approval and recruitment period were reasonable for a multi-site study.

Much effort was put into ensuring the participants' confidentiality; congruent with the legal and ethical commitment to the participants who volunteered their time and

thoughts. Through the process of anonymity and coding, it was ensured that no participants could be identified either by colleagues, friends and/or managers; neither could their work place be identifiable.

This chapter also discussed the process of data analysis and the steps involved. The next chapter will present the results without re-stating the analysis process.

Chapter 5 Analysis

Preface

This chapter provides a brief recap of the analysis process and findings. It will describe the findings in categorical and sub-categorical forms. Direct quotations from the participants' narratives are applied after each category to show the relevancy and congruency between the major category, sub-category and the script. Then an interpretation of the findings will provide an explanation of the meanings derived from the data.

5.1 Introduction

One of the aims of this study was to obtain, through the process of analysis, the participants' perspectives of working in a rural area and having a chemotherapy administration role. Through the dialectic process, as described by Boog (2003) and Hedin (1986), participants reflected on their daily practices and knowledge to uncover their core perceptions of this topic about which little is known.

Inductive content analysis is the process used to describe data in a conceptual form, as discussed by Elo and Kyngas (2008), but with a critical theory lens to uncover the hidden oppressions of the participants' narratives (Fulton 1997; Hedin 1987). The three phases of the inductive content analysis, as described by Graneheim and Lundman (2004), were applied to report the findings in categorical and sub-categorical forms. The whole process has already been discussed in the previous chapter, so it will not be described again here. Instead, I will present the findings

directly, as this is the main purpose of this chapter. Sub-categories or sub-themes will be illustrated by quotations.

5.2 Participants' Characteristics

5.2.1 Demographic Data Analysis

Table 5.1 illustrates the analysis of demographic data.

Table 5.1: Participants' Demographic Data

DATA	Analysis		
Gender	Female		Male
	7		1
Age Group	36-45 Yrs.	46-55 Yrs.	56-60 Yrs.
	2	4	2
Work Status	Full Time		Part Time
	3 p		5 p
Unit Working Days	1dpw	2dpw	4dpw
	1 U	2 U	1 U
Nursing Experience	Minimum	Average	Maximum
	4 Yrs.	37 Yrs.	41Yrs.
Working in Chemotherapy Unit	On average once every three to four weeks		
Experience In Chemotherapy Role	Between 12-18 months		
Yrs. = Years, p=Participant, dpw=day per week, U=Unit			

5.2.2 Experience in Chemotherapy Role

While participants were all experienced nurses, with an average of 37 years' experience, their experience in chemotherapy administration was limited, even those who used to administer chemotherapy before attending ADAC program and being accredited.

5.2.3 Non-Categorical Findings

Before I began describing the findings in categorical forms, I noticed that some of the information extracted from the interviews was general information that did not belong in a finding category as such, but informed the study findings and needed to be presented separately. It is important information that gives the reader a better understanding of how rural nurses in SA are being credentialed to administer chemotherapy.

All the study participants had undertaken an ADAC course and had completed their competency assessment in one of the tertiary cancer units in SA, and were accredited and credentialed to administer chemotherapy. None of the participants had participated in the RCMP program mentioned earlier in the literature review chapter. RCMP was developed and implemented in SA for only one phase in 2007 to 2008; and ADAC was subsequently implemented. The reason for this was unknown to the researcher. Although a formal email was sent to Cancer Australia to clarify this information, I did not receive a response. However, the aim of this research is not to compare outcomes of those two programs. Indeed, it was preferable that all participants completed the same program to facilitate analysis and allow inferences and generalisation.

5.3 Categorical Findings

Part of the organising phase of the inductive analysis was the abstraction process, where I formed the main categories; these have generic categories and are followed by sub-categories as outlined by Elo and Kyngas (2008). At the end of this extensive and complex process, four main categories were created that described all

aspects of the content; however, they should always be read together with the generic and sub-categories. Table 5.2 below shows all the main categories with their sub-divisions.

Table 5.2: Categorical Findings

Main Categories	Generic Categories	Sub-categories
1. Role extension, preparedness and self-confidence	a) Chemotherapy-related roles	i. Chemotherapy administration and management
		ii. Central lines access and management
		iii. Holistic assessment and patient education
		iv. Care coordination and Liaising with other cancer professionals
		v. Staffing and rostering
	b) Non-chemotherapy-related roles	i. Extended role
		ii. Role to educate other nurses
	c) Level of confidence	i. Lack of confidence without previous exposure
		ii. Lack of confidence with previous exposure
		iii. Confident with previous exposure
	d) Education and training	i. Time lag and inadequacy of the program
		ii. Lack of rural focus
2. Chemotherapy in rural areas	a) Benefits of the service	i. Decreased travel burden
		ii. Patients get treatment by trained and knowledgeable nurses
	b) Constraints of the service	i. Disconnected from the patient's metropolitan care centre
		ii. Lack of support
3. Power relationship Referrals and sustainability	a) Low number of referred cancer patients	i. Oncologist decide who goes to rural service
		ii. Limitation of care and being only low-risk service
	b) Difficulties in sustaining knowledge and skills	i. Lack of on-going education and up-skilling
		ii. Lack of facilities
	c) Concern of losing the rural chemotherapy service	iii. General nurses and GPs knowledge and attitudes towards cancer patients
4. Communication with other cancer settings and professionals	a) Limited network between metropolitan and rural cancer services	i. Liaising with different tertiary hospitals and oncologists
	b) Organised network with metropolitan hospital	ii. Liaising with one metropolitan hospital
	c) Sub-optimal handover between the referring and the receiving hospital	iii. Receiving some essential documents
		iv. Relying on patient to discuss their progress

Note: quotations for every sub-category will be presented with descriptions in the following section.

5.3.1 Main Category (1) Role Extension, Preparedness and Self-Confidence

It is a challenge [GC2].

I don't feel overly confident in the area, I must say [NC7].

This category consists of five generic categories and 13 sub-categories, where participants expressed the different roles that they undertook in their daily duties. They listed some chemotherapy and non-chemotherapy-related roles to show how their role extended specifically after being credentialed to administer chemotherapy. Following are the generic categories with a list of sub-categories representing the different roles that fall under each category. Quotations from the participants' scripts will be used to show the congruency between the developed category and the transcript.

5.3.1.1 Chemotherapy-Related Roles

Chemotherapy Administration and Management

Participants described the different chemotherapy-related roles that a nurse in the cancer unit would usually do. From setting up the chemotherapy unit, for example priming the IV lines, checking blood results and making sure that the chemotherapy is available to the assessment of cancer patient and administering chemotherapy are some of the roles described by the participants.

So, everything from setting up for that chemo, to checking blood results, to cannulation, to delivering the chemotherapy, obviously in the checking process working out BSAs (body surface areas) and ensuring that ... and doing ... performing the toxicity screen on patients, and generally making

sure that they're coping okay with their treatment, and then booking the next appointment [NC7].

One participant mentioned that making sure chemotherapy is available on the day of infusion is important, because not having the chemotherapy is another irritating issue that puts extra pressure on rural nurses.

Yes, look, obviously, they come in. We make sure we've got the drugs here, And, yes, we assess them, make sure they're not, you know, going downhill or something like that, and administer the drugs. Obviously, it's also being their advocate [RC1].

Central Lines Access and Management

Apart from administering chemotherapy and performing the standard chemotherapy administration assessments, a participant highlighted another important chemotherapy-related role, which is accessing and managing central lines. Those nurses who have chemotherapy administration roles handle this particular practice uniquely in many situations in rural areas:

I basically come in, the first thing I do is make sure I've got my chemo, obviously get my patients' notes organised, go through, get my blood results, make sure that they're all within the parameters that I needed. Usually we'll, because there has to be two chemo-trained people to check it, so I get somebody else to come and check it, patient's in, access whatever I need, IV, whether it's a port, or what it is. Two of us would check it, do our standard time-out and check through, administer it, de-

cannulate or de-access the patient, whatever, send them home, make their next appointment [OC6].

Holistic Assessment and Patient's Education

The following quotations from two participants show that they both have experienced multifaceted issues surrounding the holistic care of people affected by cancer. They specifically mentioned how they assess patients holistically and meet the cancer patients' educational needs:

I'll see what I've got on for the day, collect their notes, get my head around what I'm going to be administering, [do a] quick read-up if there's something I don't know, check that the drug that I'm going to be administering has arrived, find all the different bits of paperwork that I need, such as the order, the prescription and anything else, blood results, that all needs to be collected. And then make sure that there's another chemo-accredited nurse on so that they can come and check it with me, because you need to have someone else who's been chemo-accredited here at the same time to make sure we're administering the right drug to the right patient [TC8].

Besides giving chemotherapy, I suppose we advocate for them, because we're managing their treatment remotely from the bigger units. We educate, and we assess them physically, emotionally and mentally [IC5].

Care Coordination and Liaising with Other Cancer Professionals

Only one of the study hospitals had a cancer care coordinator who worked in patient care coordination, liaising with metropolitan hospitals and other services but did not administer chemotherapy. In the other study hospitals, the nurses who worked in the cancer units and administering chemotherapy had to coordinate patient care liaison with oncologists and pharmacists and undertake other extra roles. The following quotations are from the non-coordinator role:

So, for me, I've been, probably, involved with trying to set up systems to help with, you know, bookings and organising patients and working out cycles and liaising with the oncologists and other girls in the metro [IC5].

[My role] I guess, is to liaise with the oncologist if we have any issues, yes, and then booking the next appointment [NC7].

Sometimes the coordination of getting the drugs to this area is awkward. We'd call the pharmacy and find out where the chemotherapy drug is in the first place and see if it's in transit or not. It can get a little bit confusing but once again it's just putting the right procedures in place and getting everybody on board [RC1].

Ordering the chemotherapy for their next treatment, we need to make sure that it's ordered, checking out whether they need more bloods, when they need more bloods, have they got their blood forms? We do a fair bit of liaison with the ... [hospital] through teleservice, telemeds. So if the patient needs to have an appointment with their oncologist, they don't

always have to go to town, we do telemed here. So instead of driving down there, just to see the consultant, they can have a telemed. We book those [OC6].

Staffing and Rostering:

One participant talked about staffing issues that indirectly affects their on-going experience of caring for cancer patients:

Staff are rostered in there on a Tuesday and a Thursday, so we try and ... the dilemma, here, was trying to work out how to manage staffing for it, so we picked two days, one not being a Monday, because of public holidays etc., and so we staffed two chemo-trained staff on those days, either one in the unit and one on the ward [IC5].

Rostering trained nurses on only two days in working unit is challenging; usually nurses work part time and work in different nursing units to cover those on extended or sick leave. The situation was explained by a participant

Well, we have six trained. One is on extended leave and that's not counting her. So, we've got five that can work in here. One, two, three that actually have ... are still being sort of, supernumerary people. So, they're actually working with another person. We actually have, like a ... three people that are supernumerary at the moment, so they need to work with somebody. The other two girls, there's one that started off her training with me, completed it, started, and then she got sick, as well, so she's off on extended leave. And then there's another girl has just

finished, but because she's in another position, ... if she comes back to the ward then she will have to be orientated, so she'll have to work in here as supernumerary, so. It is a challenge [GC2].

5.3.1.2 Non-Chemotherapy-Related Roles

Extended Role

All the participants in this study had other nursing roles, such as working in operating rooms, medical surgical departments and/or renal dialysis. When chemotherapy was introduced to their health facility and they were assigned to this role, they considered this as an expansion of their role. The following statement explains the situation:

I do think, in the country we have our fingers in so many pies and are expected to have such a broad knowledge based on everything we deal with, that I think that this 'chemotherapy' is just another extra area that we now have to become competent in [NC7].

Role to Educate Other Nurses

Participants highlighted frequent non-chemotherapy-related tasks that they have to undertake with their nursing colleagues, using their expertise in accessing and managing central lines (specifically, PICC lines (Peripherally Inserted Central Catheter) and CVAD (Central Venous Access Devices)). This is because cancer patients often come in with either PICC lines or CVAD. As they have been trained to deal with these types of central lines, they usually engage in formal or informal teaching of other staff regarding these types of vascular access devices:

We are currently going to be running in-services into the hospital in regards to PICC management, because that's something that we're finding the general nursing staff just aren't happy to manage on the ward regardless of whether it's a chemotherapy patient or not [LC4].

One participant had acted proactively by developing an education folder and distributing it to the nursing department. This included information on accessing and managing central lines and some other chemotherapy-related precautions. The participant did this because she noticed that general nurses usually had issues in dealing with these central lines. Although she expressed her willingness to help any time she was asked, she developed this folder to educate and assist her colleagues to locate the information easily:

Oh, any of the nurses that are on, but, usually if they know that they've got a, say, they've got a port (CVAD) or a PICC or any of that stuff, they will, you know, say, ask me or one of the other girls, and what I actually did was developed a resource folder for them, about how they had to manage them, ... how to access ports and PICCs [IC5].

5.3.1.3 Level of Confidence

This generic category has two sub-categories or sub-themes, where participants expressed their level of confidence to undertake the chemotherapy role. The majority of participants expressed their lack of confidence to undertake the role, whether they had administered chemotherapy before the ADAC course or not.

Lack of Confidence without Previous Exposure

In the following statement, a participant showed her/his perception of the practical section of the ADAC course:

When I initially came out, no, I did not [feel confident]. I actually felt very, very nervous and quite frightened. Because I don't think three days was enough [OC6].

Additionally, this participant linked the lack of confidence to the long gap between accreditation and opening and receiving patients to their cancer units:

There was a bit of a long gap between getting in here and actually doing it, so, it was really quite ... I suppose I was suffering from a bit of lack of confidence at times, and, so, I found it a bit nerve-wracking at first [TC8].

One participant linked the lack of confidence to the lack of knowledge about cancer and treatment. This was also linked to the low number of referred patients. The following quotation was in answer to the question about confidence and preparedness:

I would have to say no. I feel that I practice in a safe manner when I'm giving chemotherapy, but I honestly feel I don't have a very good knowledge base on the drugs I'm giving, and I believe that is because I'm dealing with it so infrequently ... I don't feel overly confident in the area, I must say [NC7].

Lack of Confidence with Previous Exposure

Although this participant had previous experience and had administered chemotherapy around ten years ago in hospital-based training, he/she did not feel confident to administer it after being credentialed:

We were terrified ... and it was—what they say—the blind leading the blind, so. And, it was actually quite hard, and it was actually really stressful. You know you've got the knowledge and the theory, but putting it down in practice, and you say, are we doing the right thing, aren't we doing the right thing [GC2].

Similarly, this participant did not feel completely confident to undertake the role after being credentialed. The participant linked the lack of confidence to the limited exposure to cancer patients and cancer treatments, along with the gap between accreditation and the actual start of giving chemotherapy in their workplace:

Partly confident, because ... I felt that we definitely need more exposure to protocols and the drugs. I don't feel that we are... regularly updated and supported in that sense. ... like, we did the training ... and there's been nothing since. Like, there's been absolutely nothing since and we have low numbers of patients being referred here for treatment ... it's very difficult and you then start thinking, you know, am I doing this right still? ... Yes, I think absolutely. Not just your skills but your confidence [HC3].

One participant related the confidence to undertake a chemotherapy role to the extra courses and university degree that he/she had done:

I don't think the ADAC course specifically did it (talking about confidence). So, certainly, I think, we were all probably scared a bit at the beginning. But I'd done a four-day PEPA placement at ... and the cancer nursing course gave me a better understanding of the actual disease process, ... so, that research for those definitely gave me a lot more knowledge [IC5].

Confident to Undertake the Role with Previous Exposure

In total, five participants had previous experience and had administered chemotherapy a long time ago before attending the ADAC course. Of those, only two participants felt confident to undertake the role, despite their previous experience.

One participant felt completely confident after attending the ADAC course. The participant believed that ADAC program was comprehensive and expressed her/his confidence and preparedness by saying:

Yes, completely. Completely. Yes, no worries. Well, coming from a critical care environment, a decade or more, you see it all there [RC1].

Similarly, another participant felt confident to undertake the role immediately after being assessed, but he/she could not distinguish if the confidence was because of the previous experience or not:

Yes, I felt prepared and competent, but I don't know how competent I would've felt if I hadn't had that previous experience ... I think also the fact that I'd had previous experience in chemotherapy was a great benefit for me [LC4].

5.3.1.4 Education and Training

Under this generic category, there are two sub-subcategories, where participants expressed their perceptions of the course they experienced, to be qualified and credentialed to undertake a chemotherapy administration role.

Time Lag and Inadequacy of the Program

All participants had the same perception and experience, where there was a big lag between the training program and the opening of the cancer units in their areas:

So we did our training and that was great and, then there was this big lag time before we even had anybody referred here for us to manage them [HC3].

One participant talked about the training program—as it was not well prepared—as well as the gap between the training and administering chemotherapy in the workplace:

I don't think three days (the training) was enough; because, as I said, when you learnt what we learnt, it's actually so involved and is actually so dangerous. And when we're here working, we are on our own ... so we finished our training ... and then we didn't do any chemo for about four

months or five months. So there was a very large gap where I felt I deskilled [OC2].

One participant discussed the process of how their group has been credentialed; not only was there a big gap between the accreditation and the actual work, but also the credentialing process was long and unreasonable:

Okay, so, we did the ADAC course, yes. And then we had a one day training (workshop) after that, then we had three days at ...[hospital] to get some clinical experience, which wasn't that successful. But, then, the three days that we did in ...[hospital] one staff member went each week, so that was a process that took, you know, seven weeks to get us all through, then, when we came back, because we had this booklet we were supposed to get checked-off on, which we expected they would have done up there, but they didn't. So we had to go down to another hospital for a day and get credentialed, which was just crazy [IC5].

Well, there was a long gap between when we went and did our training at (metropolitan hospital) ... and then we went to (another hospital) ... for half a day to do some more hands-on [work], then there was a bit of a long gap between getting in here and actually doing it [TC8].

Besides the gap between the training and the practice, a participant stressed the ambiguity of the three days training and the unclear instructions to trainees and the trainers:

I must say, having spent the three days at (metropolitan hospital), it wasn't very user friendly, I might add. I felt that those staff didn't know what the expectation was, and we didn't know ... or I didn't know what my boundaries of practice were, and so I wasn't allowed to do anything much until the third day I was there, and I found that very frustrating. I think if we were ever to go back and do a placement at these tertiary hospitals, I think there needs to be much clearer boundaries on what is our expectation, and the staff there need to be very clear on what we're there for [NC7].

Lack of Rural Focus

Participants thought that the entire training program, including the theoretical course and the practical proficiencies, only suited the initial purpose of opening low-risk services. Although it was based on general cancer care, spill management and chemotherapy administration, the course needed some modifications that focused on practice in rural cancer services:

I just think that there wasn't enough of a rural focus for us and I, personally, feel quite isolated from ... [HC3].

It was a good basic introduction and I think it suits the purpose of working in a low-risk chemotherapy unit, but I think it's very much based on a tertiary centre [LC4].

It was good to start with, but I felt that it was all to do with metropolitan ... like coordinating stuff was not part of the education, these things you have to do and learn it yourself [GC2].

I think it's something that we needed to do to start off with, but I think we need to revisit it, and whether there could be another module added on for rural practice, that was more specific for rural practice [NC7].

In the following statement, a participant suggested that a program be designed specifically for rural nurses who administer chemotherapy:

I'm not sure if there is actually a program that is for rural nurses, but I think that would be really helpful, if there was something that was specifically designed to support rural chemotherapy units' education [LC4].

5.3.2 Main Category (2) Chemotherapy in Rural Areas

It's closer for them, it's closer for the family [GC2].

This category consists of two generic categories and four sub-categories, where participants revealed their perceptions of the benefits and the limitations of having cancer services in rural areas. Following are the generic categories, with list of sub-categories and direct quotations from participants' scripts, to show the congruence between the developed category and the script.

5.3.2.1 Benefits of the Service

Participants discussed some advantages of having chemotherapy services in rural areas; namely decreased travel burden, nurses learning new knowledge and skills and patients getting treatment by trained nurses. Below are these sub-categories, with direct quotations from participants.

Decreased Travel Burden

One participant discussed the benefit of getting treatment closer to home, where patients can be with their family members and do not have to worry about transport and accommodation:

So, the plusses are that there is potential for them to have their treatment here, which is great, because they've got their family, they've got their friends, they've got their supports and it's easy, so, like ... and it's probably much, much cheaper in terms of transport and accommodation. Because those are huge costs and they're never able to get it all back [HC3].

It's closer for them, it's closer for the family. They don't have to travel [GC2].

Look, the advantages are huge for the patients because they don't have to go to Adelaide, and the space and the parking there's atrocious. Time, travel, all that. It's better if they can come somewhere like here; they're

familiar with the staff, the environment. The parking's easy. It doesn't cost anything at the moment [RC1].

Patients get Treatment by Trained and Knowledgeable Nurses

Participants argued that, although chemotherapy used to be administered in rural areas a long time ago, there was always an issue with patients and nurse safety. This was because nurses were trained in hospital-based training programs, where the expert taught the novice. Currently, they are more competent and confident to administer chemotherapy, because they have been educated more appropriately, and they are accredited to administer chemotherapy by a professional body.

In the following quotation participants described the advantages of administering chemotherapy in rural areas for both patients and nurses. In addition, the participants explained how receiving education has helped them protect their patients and themselves:

For the patients, it is fantastic. They don't have to travel long distance to receive their treatment, so, it's great for them. For us, it's even great, too. We get to have a bit more education on the chemo medicines, and so, we can protect ourselves, protect the patients, because we have that education, and they can come in, you know, any time because cancer's so prevalent now, it's nice to have that education [TC8].

A similar idea was also presented by another participant:

The advantages I see are now patients are getting their chemotherapy by people who have at least got some training, so they understand the implications of what they're doing [OC6].

One participant expressed her/his feeling about administering chemotherapy before participating in a formal cancer education program like ADAC, and how uncomfortable she/he was:

No, we weren't really trained. Yes, so, I actually didn't like doing it, because—and neither did a lot of the other girls—because we didn't feel that we had the training to do it [IC5].

5.3.2.2 Constraints of the Service

In this generic category, participants outlined two sub-categories representing their perceptions of the limitations of chemotherapy services in rural areas.

Disconnected from the Patient's Metropolitan Care Centre

Out of eight participants, four discussed their feeling of being disconnected from the patient's metropolitan care centre and the lack of support in rural areas:

I do feel dislocated from the case management and often have to rely on the patient or the family to provide advice or updating of what's happening in their care. And that's not okay [HC3].

Do you know what Oasis is? Because I don't really. We don't have access to that. I have got a printout, so our parameters are actually slightly different [OC6].

One participant had also mentioned an important challenge was when they became involved in caring for and assessing local cancer patient who got his/her chemotherapy in metropolitan hospital but presents to their local EMS with cancer treatment-related complications.

Whereas, there's still people, around that go to Adelaide through the private or public system, that may present here for similar illnesses, but we don't know that they're having chemo, or they say they are, but they don't know what protocol they're on, so it's difficult. That's a challenge, yes [IC5].

Lack of Support

Two participants talked about how the lack of support affected care delivery:

I think it absolutely does, because you don't have the support of oncology staff right there that you can ask. For example, if you have an issue with a PICC or a port, and you read the instructions and you still can't work it out, you've got to find somebody that you can talk to, but often you don't have another chemo nurse ... well, we always have two in the area, but the other chemo nurse is only as experienced as you are, and so I think it does affect the care sometimes, yes [NC7].

If we have difficulty in needling, we haven't got a doctor that we can just pull off the ward, we have to grovel and beg and go to theatre and say, please, otherwise we have to wait until their own doctors will come in. And see, that delays their chemotherapy [GC2].

5.3.3 Main Category (3) Power Relationships, Referrals and Sustainability

We are here. Utilise our services [RC1]

This main category consists of three generic categories and five sub-categories. Participants disclosed their lack of power regarding the level of service, the number and type of referred patients and the sustainability of their cancer knowledge and skills. Below is a description of this category.

5.3.3.1 Low Number of Referred Cancer Patients

In this generic category, participants related the low number of referred patients to oncologists, who decide who should be referred, plus the limitation of care and being only a low-risk service.

Oncologist Decides who Goes to a Rural Service

The following Participants believed that a patient's referral was mainly the oncologist's decision:

We've actually dwindled down a bit now. So, we actually are waiting. Waiting for Adelaide to make their mind up and give us some more patients [GC2].

We have low numbers of patients being referred here for treatment. Obviously, if they (oncologists) think a patient needs to remain under their care then they're not going to refer them to us [HC3].

From what I've heard from the patients and the relatives, is that the oncologists themselves don't want them to go anywhere else except their own hospital. So we have to get over that hurdle and let the oncologists know that going to a regional centre isn't a death warrant. All we can do is just try and tell them, the oncologists, that we're here. Utilise our services [RC1].

Limitation of Care and Being Only a Low-Risk Service

One participant explained a patient's dilemma: who lives closer to the participant's hospital but goes to a higher level hospital for chemotherapy, and comes to the participant's hospital for non-chemotherapy infusion:

He lives closer to us than he does. But, the chemo drug he was on, we couldn't give here, because it's not a low-risk one. So ... but he comes to have, like, the magnesium infusion here, yes. So, he's a chemo patient, but we're not giving him chemo, sort of thing [IC5].

The participant also added another important issue by saying:

Some patients still have to travel, like, even though we're here, there's some drugs we can't give, so they've still got to travel [IC5].

Similarly another participant pointed out the limitations of the service and expressed their willingness to upgrade it so they could administer chemotherapy to more cancer patients in their community:

The disadvantages are that we're only a low-risk unit, so we're actually only accredited to give low-risk chemotherapy, which is very limiting ... that's why we want to try and grow it so that we can administer to more of the population [LC4].

One participant pointed out the two previous sub-categories (oncologist decide who goes to rural services and limitation of care and being only low risk unit) in the following:

You might see them on the ward for something else, you know, they might present with another medical or surgical issue but they might be undergoing chemotherapy or they could be there with a family member and they will tell you, I really would like to come and have chemotherapy at your unit but my oncologist wants me to continue going to town. Or it just depends what protocol they're on. We're not able to give some treatment protocols here [HC3].

5.3.3.2 Difficulties in Sustaining Knowledge and Skills

As a result of the low number of referred cancer patients, participants expressed that they believed it was difficult to sustain their knowledge and skills. The following sub-categories will clarify this:

Lack of On-Going Education and Up-Skilling

In the following statement, a participant discussed the unavailability of cancer-related in-services in their workplace.

We don't get any. What in-service do we get here? None. Nothing, I haven't had one, I've probably nearly 12 months been doing this now, and I haven't had one in-service. Up-skilling with in-services, I don't see why we can't. I think they should put some sort of in-service program in place for the rural nurses that give chemotherapy [OC6].

Further, another participant suggested there should be short re-credentialing courses and stressed the importance of having a regional mentor that they could rely on for on-going education and up-skilling:

The disadvantages for me are that there really isn't enough support or up-skilling... for rural nurses. I would be looking at offering short re-credentialing or up-skilling more regularly because, to my knowledge, I don't... I think, once you've got the qualification, you've got it, you don't have to do any more. You don't have to ... that's it. So, how do we know that we're still safe? How do we know that we're doing the right things when no one comes to make sure that they are okay? [HC3].

I would have a person as a clinical educator or mentor, resource person. ... I would like them to develop short training modules for us that we can just make sure, that also go to bigger centres and, yes, and probably

redo... yes, just have some sort of up-skilling regularly—more regularly than what others would do, yes [HC3].

However, participants repeatedly mentioned that eviQ website was the only used educational resource among them.

I'm using just eviQ, that's all, yes [TC8].

Yes, eviQ, we access a lot, for the protocols and stuff like that, patient hand-outs [IC5].

Yes, eviQ our best friend, we certainly use it a lot for patient information obviously when they're starting a new treatment; I certainly use it a lot to look up the drugs and their side effects and I know that the other girls do as well [LC4].

Yes, I use eviQ all the time. All the time. I live on that site. I love that site.

That's probably the main one [OC6].

Apart from the on-going education, one participant noted the difficulties of sustaining knowledge and skills, as a result of a decreasing number of referred patients:

It would be really good if we could do it every day, that we could actually really get our teeth into it, you know, really get to know what we're doing. We were doing really well when we had quite a few coming up, but then they have dwindled off, and when they get really sick, then they have to go down to Adelaide or they just stop their chemo [GC2].

One participant mentioned the need for more cancer-related courses and suggested that rural nurses in chemotherapy roles could be rotated to higher volume cancer centres to give hands-on continuous education:

I'd like to have access to more courses, and things like that, which I haven't looked into yet, which I must do. Oh, actually, I did look into a few, but they get booked out so quickly, you've got to be on the ball, you've got to be quick at getting in, and that's not always possible. Yes, just more rotations through the chemo unit, here, would be good [TC8].

Similarly, in the following statement, one participant discussed the need for re-taking the ADAC modules annually to help sustain their knowledge:

I think there should be an expectation that we complete the modules annually, because I think it then cements that knowledge [NC7].

Another participant made a similar comment:

I certainly think once every couple of years we need a refresher course, whether that is going back over the modules or whether that is sourcing further opportunities in tertiary centres [LC4].

5.3.3.3 Concern of Losing the Rural Chemotherapy Service

In this generic category, participants expressed their concern about losing such an important service for rural patients. Due to the difficulties in sustaining their knowledge, the lack of some important facilities and other non-cancer clinicians'

ability to care for cancer patients, participants worried that the referral hospitals would no longer be confident to refer cancer patients to rural services. This category is, explained more by the following sub-categories and statements.

Lack of Facilities

In the following quotes participants expressed concerns about the lack of available resources (such as laboratory services) in the local hospitals that triggered them to refer sick cancer patients to metropolitan hospital.

We can treat the symptoms but we can't actually do what you would do in Adelaide [RC1].

One of the big reasons patients get sent away from here is because we don't have a laboratory on site. As you know, oncology patients you really need to know immediately what their pathology is, and treat according to that. And we don't have that [HC3].

General Nurses' and General Practitioners' Knowledge and Attitudes Towards Cancer Patients

Participants expressed their perceptions of the ability and capability of local GPs and general nurses in caring for cancer patients.

I'm not familiar with how well trained the medical staff is with chemo. I don't believe it's a lot. Yes. So, basically, we'd stabilise them, get

antibiotics in ASAP and then get them out as fast as we can to Adelaide [RC1].

The same participant was asked who would take care of cancer patients if they were admitted in this rural hospital, and answered:

It's better if there is a chemo-trained, and all of the staff here are very good but then they're not probably well aware of everything they need to know [RC1].

In the following quote, one participant highlighted how their GP or the doctor on call would react if cancer patient came to EMS.

This hospital is a GP-run facility so we don't have any doctors on site. And I think that's one of the issues with patients receiving chemo here, as well, that our doctors are all based in medical centres in town. And there's always a doctor on call for the hospital, but most of those doctors... You know, that's not their specialty and so they would seek advice from an oncologist or the patient's oncologist and, mostly, I'd say, the patients would be transferred to town [HC3].

Another participant made a comment on how trained cancer nurses can pick up cancer-related symptoms, but have no power to decide if the patient needs to be admitted:

It depends on whether the doctor thinks it's febrile neutropenia. You don't know. I mean, because we've had one that I thought, oh, he must be, he

must be admitted. But he was sent home, to return 24 hours later with febrile neutropenia, and I thought hmm ... it's to educate the doctors, as well. I mean, the GPs. They don't actually take our word for it, because we're only nurses [GC2].

Further, one participant commented on general nurses' attitudes towards taking care of cancer patients:

If they're in the ward it's normally the cancer girls that will get them, because the others don't ... hands up, I don't know, and I don't want to know about them [GC2].

Although one participant was satisfied that general nurses in the ward would take care of cancer patients if they were admitted, nurses still lacked confidence to take care of cancer patients with vascular access devices:

Any of the nurses in the ward will do, but, usually if they know that they've got a, say, they've got a port or a PICC or any of that stuff, they will, you know, say, ask me or one of the other girls to take care [IC5].

In the following quotation, a participant expressed a concern that cancer patients might lose faith in rural nurses' practice and knowledge:

I believe. And I think, for patients, they need to know that our clinical practice is sound. Otherwise, you know, they are going to worry, and they pick up that we may not be as confident as the nurses in the city [NC7].

5.3.4 Main Category (4) Communication with Other Cancer Settings and Professionals

This fourth category consists of three generic categories and four sub-categories. It highlights the issue of communication and networks between rural and metropolitan cancer services.

5.3.4.1 Limited Network Between Metropolitan and Rural Cancer Services

I don't know what's there and also I don't know how to access them [HC3].

In this sub-category, participants talked about the lack of communication between the referring and receiving hospitals and oncologists, considering that they liaise with different metropolitan hospitals.

Liaising with Different Tertiary Hospitals and Oncologists

In this quotation, a participant stated clearly that they only called the oncologists or units where their patients came from:

Well, I'm not actually sure even what are out there in terms of, you know, networks. I only call whichever chemo unit that person came from. Because I don't know what's there and also I don't know how to access them [HC3].

Similarly, another participant commented:

The only thing I use them for is if I'm at work, working here, and I need something, then I'll ring them ... wherever the consultant is that's looking after that patient, I ring that place [OC6].

Additionally, in regard to the communication with metropolitan cancer nurses, one participant expressed how limited their communication was:

When I've wanted some information about how to do something or just unsure, I've used, I will often ring ... and ask to speak to the nurses there [RC1].

Similarly, another participant stated:

If I needed information on a protocol or something I couldn't find, I would ring the chemo unit at ... [GC2].

In the following statement, a participant suggested there should be better organised and suggested regular meetings between oncologists and rural nurses, and between rural nurses who administer chemotherapy in different settings:

I would probably ensure that the chemo unit actually has some regular meetings with the oncologist who services them, you know, even if it's six-monthly, just to ensure the communication is better. It would make sense to me to have a meeting with the staff from ... and ... even by teleconference, six-monthly, to make sure that our communication is

better. I think that's one of the biggest hurdles for us, is communication [NC7].

5.3.4.2 Organised Network with Metropolitan Hospitals

Liaising with one Metropolitan Hospital

In this generic category, one participant expressed how well organised the communication and network with a metropolitan hospital was, justifying this because they only liaised with one metropolitan hospital:

Yes, we do. We have a very good relationship with ... and I think that most of that is to do with the cancer care coordinator there. Also, one of the oncologists, he does a clinic down here once a month now and I think that's also been very good at just familiarising him with us and with the unit, and once every two months I go down to a meeting at ... and that's just to discuss the unit and how it's going, so the pharmacy staff, the CSC and the administrative staff all will be in that meeting. So it's a good opportunity to us to discuss where we'd like to see the unit, what do they find is causing some barriers and things. So, yes, we're very fortunate, I think we have a very good communication, and I think we're also fortunate in that we only deal with one site, we really only deal with ... and I know the other sites, they'll have patients from all the different sites, so we're sort of fortunate in that we understand the process [LC4].

5.3.4.3 Sub-Optimal Handover Between the Referring and the Receiving Hospital

Under this generic category, there are two sub-categories where participants disclosed their perceptions and experience of the referral process from metropolitan hospitals.

Receiving Some Essential Documents

In the following two quotes participants talked about the essential documents they receive when they got a patient being referred to them, but also they highlighted that they do not receive some other important documents in particular a referral letter of patient's progress note.

Like, what happens when people come here for treatment is that there's a photocopy of the protocol sent and a photocopy of, the drugs that the pharmacist's going to send, so, that all gets sent to CSC but it doesn't tell us anything about the person. Like, there's no referral letter or anything like that; it's just this person that's coming for this protocol and this drug and this is the cycle that they're on, and that's it [HC3].

Chemo orders come with the chemotherapy. Yes, in the box with the chemotherapy. They had started, just when I've stopped working here in the last month, they've faxed one up as well, and so we ended up with two copies. And obviously a copy of their consent [OC6].

One participant pointed out the opposite situation where their cancer patients' documents will not be sent to oncologists when patients receive treatment in rural hospitals:

When people come we do a pre-chemo assessment, and then we do the time-out, and we've got the treatment protocol, and then we do a planned outpatient form, which is, like, their progress note, so, none of that information was going to the oncologist [IC5].

Relying on Patients to Discuss Their Progress

Under this sub-category, a participant noted there was no formal handover or referral letter from referring hospitals, and they relied on patients or families to inform them of what was happening with the patient's care:

Often we have to rely on the patient or the family to provide advice or updating of what's happening in their care. And that's not okay, because what they say to you is very much dependent on what they hear and what they understand and it might not be that they've got the right information, I think that actually does affect my care because I worry that, there isn't anything really formal [HC3].

The following quotation addressed a situation where participants get a call from cancer nurses at the referral hospital to tell them the patient is coming for chemotherapy or disconnection. However, there is no formal handover, and no formal documents will be sent, other than the chemotherapy protocol and drug sheet:

The staff there will ring us and let us know that they'll be coming in either for a disconnection or for a day eight or for whatever, and, yes, they will let us know if there have been any problems, but the patients, too, will always tell us, you know, 'I've been very sick' or whatever. There isn't a formal, like, a handover, I guess, of the patient; we will email either their oncologist if we're concerned or CSC ... but we will not transfer documents (such as progress notes, nursing notes) no, they have completely separate chart [LC4].

5.4 Conclusion

By following Elo and Kyngas' (2008) process of inductive content analysis, four main categories, 12 generic categories and 25 sub-categories were developed. The sub-categories inform the generic categories and the generic categories inform the main categories. As the study topic was not explored previously, all identified meanings, ideas, concepts, and notions were reported to represent participants' voices comprehensively. This comprehensiveness analysis resulted in the identification of 25 sub-categories.

The participants' voices were interpreted using the primary researcher's novice skills. The findings were my understanding of the participants' narratives. Rural nurses who administer chemotherapy had expressed their perceptions of their role as challenges, confidence, preparedness, and networks and communication. Participants also suggested changes to enhance their workplaces and roles. Part of critical theory methodology was creating change; thus, this was appreciated and it

was hoped that participants would take their suggestions to a higher authority and use this study as evidence.

Chapter 6 Interpretation and Discussion

Preface

This chapter will interpret the findings to provide an explanation and meaning derived from the data. The discussion will provide a summary description of the research process, discussing the major findings, the study limitations and making recommendations for further investigation.

6.1 Introduction

The previous chapter provided a description of the findings as a categorical process; this chapter will follow on to interpret, discuss and explain the findings. Linking and showing the relationship between the categories and themes is essential to achieve and obtain the core meaning of participants' perceptions of the value and constraints of their roles.

Further, use of a critical theory lens has informed the analysis and interpretation of the findings, which enabled analysis of the data in a way which revealed not only the participants views but also gave a sense of the power relationships involved. It is worth spending some time to restate the research problem and summarise the research process before the findings are interpreted and discussed.

6.2 Restatement of the Research Problem

To facilitate access to specialised health care for rural residents, the Australian government has implemented many plans and strategies. One plan related to cancer patients in rural and regional areas as discussed in chapter one, was the RCMP in SA (that was then replaced by the ADAC course). These educational courses were intended to provide health care professionals with the skills and knowledge so that cancer patients could receive chemotherapy closer to home and decrease their travel burden. Although many studies have emphasised the benefits to patients, and the satisfaction and advantages of getting treatment closer to home, the expansion of nurses' roles and their perceptions about undertaking this role have not yet been investigated. This research has explored the perception of registered nurses who administer cancer treatments and support patients with cancer towards their extended role.

6.3 Summary Description of the Research Process

Obtaining ethical approval and site authorisation was the first step in this research. Next, critical theory was applied as the methodology that guided me to answer the research question. Individual interview data were collected from registered nurses who administer chemotherapy and work in low-risk chemotherapy services in rural SA. Data were then analysed using the inductive content analysis described by Elo and Kyngas (2008), forming four main categories. Finally, discussion and interpretation of the findings will be carried out in the following section.

6.4 Interpretation and Discussion of the Major Findings

The main categories represent the participants' perceptions of their role, the chemotherapy service, the power relationship and communication and networking with the other cancer professionals and settings.

6.4.1 Category 1: Role Extension, Preparedness and Confidence

6.4.1.1 Chemotherapy and Non-Chemotherapy Roles

In line with what was revealed in the literature about the extended role of rural nurses as discussed by Dallred, Dains and Corrigan (2012), this research has found similar results. In this category, participants expressed their perceptions about role extension. They considered administering chemotherapy in rural areas was a form of role extension. Considering that rural nurses might be working in a particular specialty (such as emergency (EMS), medical/surgical ward, theatre and/or dialysis), their perceptions were true and reflect their experience.

Additionally, chemotherapy administration would be just one part of their role and not their main daily work, as each nurse on average works once in the cancer unit every three or four weeks. According to Cumming, Boreland and Perkins (2012), rural nurses were expected to be competent in many nursing and healthcare settings, which help to foster an assumption that their role will continue to expand to meet the needs of patients with cancer due to the lack of the specialised cancer care professionals in rural areas.

Participants also outlined the non-chemotherapy roles that they now undertake as a result of the expansion of their main role. One often mentioned role they found

themselves undertaking was educating other nursing staff on accessing and managing central lines, specifically PICC lines and central venous access device (CVAD). Many cancer patients have a long-term intravenous access device that often a result of chemotherapy's effects on patients' veins, extended treatments regimens over many weeks and months and the common use of infusion ambulatory treatments. Thus, rural nurses who administer chemotherapy have been educated on how to access and manage these catheters as well as it is a pre-requisition for nurses to be able to manage CVADs prior to undertaking ADAC modules (Cancer Institute NSW 2014a). Hence, whenever a patient come to EMS or is admitted to the hospital with one of these devices, chemotherapy nurses in rural areas will be called to help in accessing and managing the central line. This situation prompted one participant to develop an educational folder and distribute it around the hospital for nurses to use, while another participant has started to give in-services about the same topic to all the hospital's nurses.

Although rural chemotherapy nurses were happy to provide help and assess their colleagues in such situations, it was clear that this put extra pressure and demand on them. This issue is also linked to the lack of educational resources they receive from metropolitan hospitals when they individually have to develop and provide in-services and information folders. Previous work has shown that the rural nurse role depends on the context they work in which means they need to extend their role (Smith 2007), but there is also a need to support this from the metropolitan setting and to ensure all nurses involved in the patients' care are adequately prepared for this

Furthermore, those nurses sometimes find themselves in a challenging situation when they become involved in assessing a local cancer patient who is not one of their cancer patients but present to the emergency room with cancer related symptoms and/or treatment complications or toxicities. Those patients received their chemotherapy in a metropolitan hospital but did not necessarily know what chemotherapy or which chemotherapy protocol they were receiving. In this situation the rural nurses had to find out who is the patient's oncologist and where the patient got his/her chemotherapy and liaise with them to appropriately provide the needed and the proper care.

6.4.1.2 Confidence to Undertake the Role and Applicability of the Training

Course

Participants expressed perceptions of their level of confidence and preparedness to undertake the chemotherapy administration role after completing the accreditation course. The majority of participants (six) expressed a lack of confidence to undertake the role right after the course, not only for those with no previous experience in chemotherapy, but also in those who had administered chemotherapy prior to accreditation.

Participants linked their lack of confidence to the lack of support, low number of referred cancer patients and more frequently to the lack of consistency in the training program. Indeed the gap between finishing the course and being credentialed, to the actual opening of cancer units in their hospitals is the main reason of their lack of confidence. They also thought that the three days training was not formally organised. It is clear from the participants' narratives that they did

not know what they had to do during the three days placement and what their boundaries were, with the preceptors in the tertiary hospitals also unclear about the participants' abilities and boundaries. Hence, some participants did not have hands on practice until the last day of the placement. In addition according to the participants, because of the busyness of the metropolitan cancer units, it was difficult for the preceptors to stop or slowdown to explain and discuss practices or situations.

Despite these issues the participants perceived that the training course suited the initial purpose of developing cancer units in rural areas, and equipping rural nurses with basic cancer education. They believed that the educational course could be better tailored to suit rural cancer practices. Indeed, this might be achieved by developing one extra module that relates to rural chemotherapy administration and care. This notion is supported in some literature, for instance, Cumming Boreland and Perkins (2012) conducted a study to explore whether rural primary health care nurses feel equipped for palliative care or not. Authors concluded that although most respondents had attended some form of palliative care education two years ago, almost all participants expressed their need to do more rural related palliative care.

6.4.2 Category 2: Chemotherapy in Rural Areas

6.4.2.1 Benefits and Constraints of the Service in Rural Areas

In this category, participants outlined their perceptions about the benefits of having cancer units in rural areas. Participants' perceptions were supported by other studies; it was also one of the aims of a government initiative to facilitate access to

cancer patients in rural areas (Boyce 2009; Hoon et al. 2009). One benefit was a decrease in the travel burden for patients, and the other important benefit was that patients now received better treatment by trained nurses who understood the consequences of their practice, and what to do for adverse reactions. Participants also appreciated their involvement and considered this as new knowledge and skills they were happy to undertake.

In contrast, participants felt disconnected from the patient's metropolitan centred care. They relied on the patients and family to reveal the patient's progress instead of being informed by the patient's oncologist or the metropolitan cancer care providers. This sub-category was also interconnected with category four (communication) and will be discussed further. In addition, they felt a lack of support, specifically because in rural areas they are the only cancer-trained nurses. As such, if they had difficulties in cannulating a cancer patient with poor venous access due to damage from previous chemotherapy, they could not find an expert who could assist with this; a situation that delayed a patient's treatment or postponed it in the most difficult situations.

6.4.3 Category 3: Power Relationships and Sustainability

Generic Categories:

6.4.3.1 Low number of referred cancer patients

6.4.3.2 Difficulties sustaining knowledge and skills

6.4.3.3 Concern of losing the rural chemotherapy service

The above three generic categories are interconnected, and all relate to power relationships and sustainability. The participants expressed that they have no power over the number of referred patients. It is the oncologist's decision to refer patients who suit the criteria for a low-risk service, based on the Standards for Chemotherapy Services in South Australia 2010. Indeed, the historical basis of this issue is also linked to the development of those standards, which means it is linked with the very beginning of formal chemotherapy administration in rural areas. This means that when the Standards for Chemotherapy Services in SA was launched, it gave oncologist the power to decide who should be referred to local hospitals based on the criteria and guidelines stated on the Standards under the Chemotherapy Risk Stratification and Chemotherapy Service Delineation.

Participants found it difficult to sustain knowledge and skills with the limited number of patients, and the unavailability of in-services sessions locally. They also expressed their fear and concern that referral hospitals might lose faith in their ability to care for cancer patients, and eventually they would lose the service, thus impacting on patient care.

It is obvious that a moderate-risk chemotherapy unit based in a rural area will have more capacity to administer a wider range of chemotherapy for a greater number of cancer patients. This is because a moderate-risk service will treat both patients in the low-risk category and patients at moderate-risk level. This prompts the question: is it worth spending money to prepare and provide resources for a low-risk chemotherapy services and accrediting nurses to work in these units, when the number of referred patients is low and nurses are concerned about the sustainability of knowledge and skills? Moreover, nurses did not feel connected to their cancer units as each nurse will only be rostered to work one or two days, every three or four weeks. Is it not more advantageous to upgrade all rural low-risk cancer units to a moderate level, so that nurses will be more attached to the unit and will be able to treat more cancer patients in the community? While this would involve cost, upgrade of even a few targeted centres could result in a cost effective outcome overall and be more achievable than upgrading all 12 centres.

What is still unknown is what is the whole population of suitable patient that could satisfy the inclusion criteria of these low risk centres and compare this to the reality volume of patients who are actually treated in the rural centres. In other words, they have services in their area but cannot use them. Answering this and the previous questions is not easy, and more research needs to be undertaken to address the issue of rural chemotherapy administration from different perspectives, particularly patients' perspectives. However, based on the risk stratification and chemotherapy service delineation of the Standards for Chemotherapy Services in SA, chemotherapy regimens were categorised into low, medium and high risk and cancer services were categorised into six levels as discussed in chapter one. Hence, cancer patients will be referred to their local cancer service only if the

chemotherapy and their condition were at the level of their local cancer service (Doherty 2010). Meanwhile, there is no data or study that explored if all cancer patients who could be treated in local services were actually referred. In addition, participants felt powerless in sharing the initial decision on who was referred and their input was only considered after the referral was initiated. Indeed, it seems as though the referral process needs to be more transparent to patients and local centres and a referral decision needs to be achieved through a collaborative meeting between oncologist, the CSC at metropolitan cancer unit and the point of contact at the rural cancer unit.

On the other hand, upgrading a low-risk cancer service needs to incorporate consideration of the capacity and the availability of the resources within the whole hospital. This is because cancer units will be administering high risk and potentially more toxic chemotherapies, and will be managing more cancer patients. Hence, the GPs and all hospital nurses need to be educated about caring for cancer patients. In fact, one participant has suggested if their cancer unit was upgraded that all the hospital nurses and GPs should undertake the first module of the ADAC course *Handling Antineoplastic Drugs and Related Waste Safety* (Cancer Institute NSW 2014a).

Interestingly, participants repeatedly mentioned that eviQ website was the most used educational resource among rural chemotherapy nurses. However, no mention was made of another useful website called 'Country Cancer Support SA', that has useful information for both cancer patients and their families and rural professionals. Indeed this particular website provides valuable information for rural professionals including those who administer chemotherapy, such as contact details

for metropolitan based rural liaison nurses, cancer care coordinators and rural and remote mental health triage services, all of which are not available on the NSW based eviQ site. It could be useful for the rural nurses to be informed of the SA resources (Country Cancer Support SA nd).

6.4.4 Category 4: Communication with Other Cancer Settings and Professionals

Generic Categories:

6.4.4.1 Limited network between rural and metropolitan hospitals

6.4.4.2 Well organised network between rural and metropolitan hospitals

6.4.4.3 Sub-optimal handover between the referral and received hospital

The *Final National Evaluation Report* of the CanNet program by Miller (2009) said; the network program had positive impacts and outcomes on the system, in six elements. The two elements related to this category are: 1) improved information sharing between professionals providing cancer care; and 2) established processes to link regional/rural health professionals with metropolitan counterparts. Despite these two positive outcomes, in this research project most participants explicitly expressed their perception of the limitations in communication and networks with metropolitan cancer services. There was no problem when one unit received patients and liaised with only one metropolitan hospital. In this case, the communication and network seemed perfect and well organised. As participants disclosed that the oncologists and coordinators in the metropolitan hospital were fully aware of the ability and capacity of their rural counterpart hospital, and rural

clinicians were familiar and satisfied with the communication and network process of their metropolitan counterpart.

In contrast, a disturbing issue was identified when one rural hospital liaised with two or three metropolitan hospitals. Participants clearly stated that they called the oncologists who referred their cancer patients or nurses from metropolitan cancer units only if they wanted to ask about something that was not clear in the drug order sheet or some treatment-related administration technique. From the participants' perception, besides seeking clarification from metropolitan cancer units, there was no formal communication or network between the two hospitals for example summary letters and a copy of the patients' progress note. Indeed this is considered a lack of a dissemination of various sources of communication.

Furthermore, knowledge sharing and better understanding of the rural hospital's capacity and rural nurses' abilities were the main reasons for rural nurses suggesting a better communication and network process between rural and metropolitan hospitals. Notably, all the rural cancer units in this study used the telehealth system. Unfortunately, they only used this system to connect patients with oncologists in metropolitan hospitals. Participants knew that they had the system, but it was not used more effectively. Hence, one of the suggestions was to have a six-monthly meeting between oncologists and rural nurses to communicate, share knowledge and to do some educational in-services. In a literature review to report the benefits of telehealth for rural Australians, Moffatt and Eley (2010) reported benefits for rural professionals. These include:

- 1- Local access to continuing education and professional development
- 2- Enhanced local service provision

- 3- Experiential learning, networking and collaboration that alleviate rural professional isolation

Indeed, rural nurses can use telehealth to connect with metropolitan nurses and oncologists, even for handovers before they receive the referred patient. Doing this will enhance communication and improve the referral process.

6.5 Study Strengths and Limitations:

This is the first study to explore the perception of the extended role of South Australian rural nurses who administer chemotherapy. Also, as the primary researcher I gained real-time understanding of the rural nurses providing this service. Indeed these were the strengths of the study. However, the role of rural nurses who administer cancer treatment is important and needs to be explored comprehensively. A limitation of this study was using only one method for data collection, because of the limited time for the study. I believe that different methods will reveal different data such as the patients' and the oncologists' perspectives; hence, further studies to examine the topic from different aspects are highly recommended. Another inevitable limitation that pre-exists in all qualitative studies using interviews for data collection is the subjective nature of self-reported data. This is when participants remember and selectively report some events in particular circumstances that they value more, or when participants report positive events as their own and attribute negative events to external people or forces.

6.6 Recommendations for Further Investigation

The findings of this study emphasise the importance of rural nurses who administer chemotherapy. Based on these findings I would suggest some recommendations for further investigation. This includes informing other national and international bodies about the role of rural nurses in planning a rural chemotherapy provision. The recommendations are made based on participant views, knowledge of current education programs and review of literature as well as my personal experience as a cancer nurse in a leadership role with previous responsibility for staff education. Some recommendations include:

- The ADAC course is informative and comprehensive, however a well organised and consistent cancer education program that includes a module for rural cancer practice is recommended.
- Due to the difficulty in sustaining cancer related knowledge among rural nurses, a mandatory annual re-credentialing course for rural nurses who administer chemotherapy is highly recommended.
- Every rural nurse who administers chemotherapy in a low-risk service should have an opportunity to be annually rotated (for 3–5 days) to a medium- or high-risk cancer service. This is recommended to allow rural nurses to practise their chemotherapy administration skills on many patients, to be exposed to different type of cancer treatments, to exchange knowledge and experience and to make a network with their metropolitan counterparts.
- All staff working in a rural hospital with a cancer unit should undertake the first module of ADAC course (*Handling Antineoplastic Drugs and Related Waste Safety*). Hence, whenever cancer patient comes to EMS or admitted

to the ward, nurses or GPs will already have a baseline knowledge of antineoplastic drugs and related waste safety, which will alleviate their stress in such situations and will lessen the demand on rural nurses responsible for chemotherapy administration.

- Referring cancer patients to rural hospitals should be a more explicit process. A decision of who can be referred to rural cancer service should be achieved based on the current criteria of the risk stratification and the service delineation plus after a collaborative meeting between oncologist, cancer service coordinator at metropolitan and the point of contact at rural cancer unit.
- The telehealth system should be used more efficiently to improve networking between cancer units, communication with oncologists, and provide educational courses and in-services.
- Low risk chemotherapy centres play a significant role in providing access to chemotherapy for rural cancer residents, however, upgrading these or selected centres to a medium risk level will assure a greater benefit for both rural residents and nurses as well as allowing more cancer patients to utilise the service.
- More research needs to be undertaken to explore the rural cancer patients' experiences that are not utilising the local cancer services because they are not fitting the local service criteria.
- More research needs to be undertaken to quantify the number of cancer patients who can be referred to local hospitals to justify the decision of upgrading the low risk services or to keep it as it is.

6.7 Conclusion

The voices of rural nurses who administer chemotherapy have been reported extensively in this study. Participants expressed their perceptions of their role; then through critical theory, their voices were revealed with their needs and suggestions to change and improve their role, and the service itself.

The main categories or themes that have been interpreted from the participants' narratives were: first their perception of the extended role. In this theme, they showed how their roles have been extended, which has affected their preparedness and confidence to undertake that role. Second, they showed their perception of the benefits and constraints of chemotherapy services in rural areas. Third, participants expressed their perceptions of the power relationship relating to the function of the service, and that oncologists have the power to refer (or not refer) cancer patients to rural hospitals. Finally, participants disclosed their perceptions of limitations in communication and networking between rural and metropolitan cancer services.

While it is clear that the extension of the rural nurses role to administer chemotherapy is valued by them and perceived as valuable to rural residents with cancer, there are some concerning factors which could be improved.

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Appendices

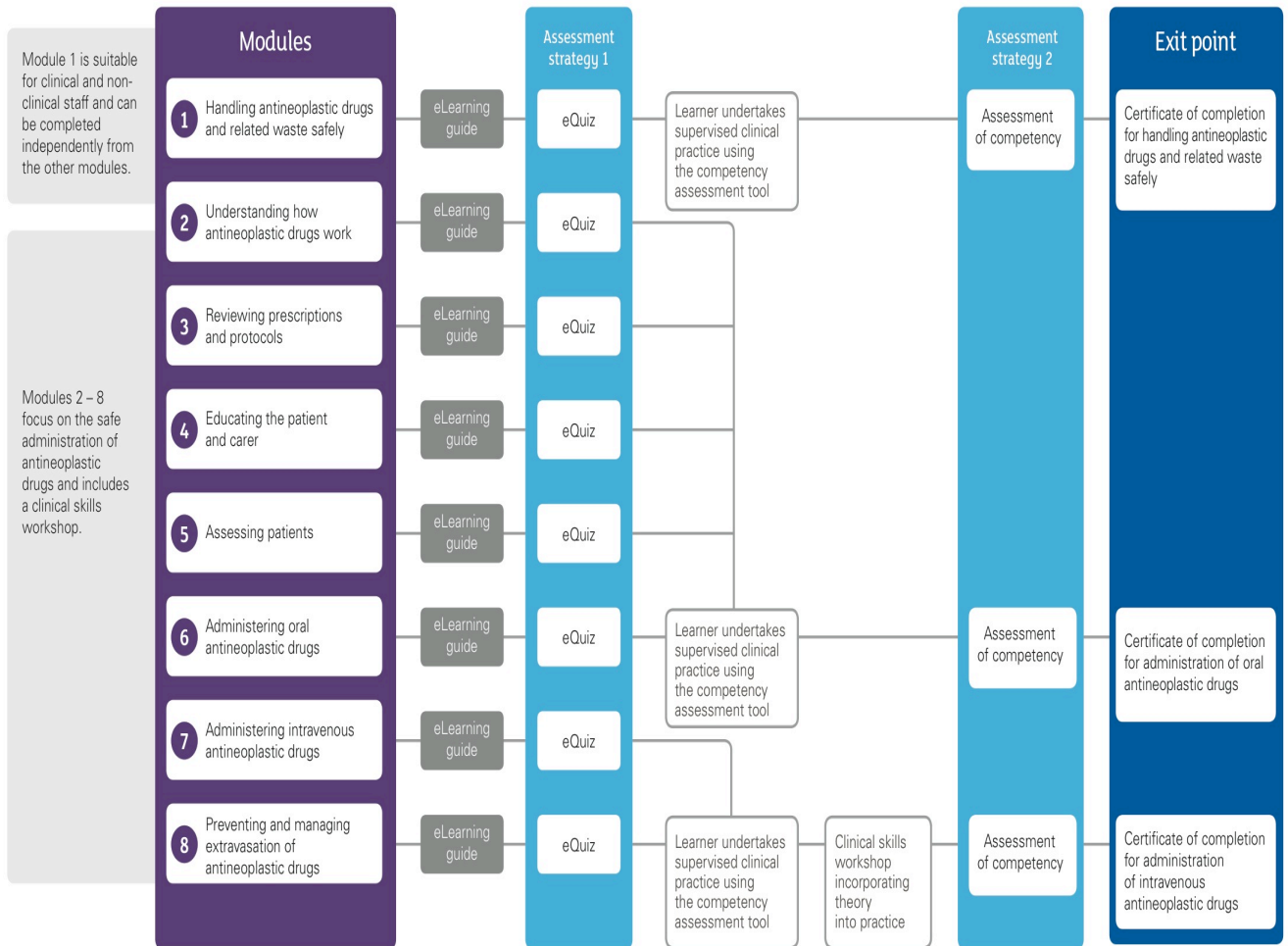
Appendix 1: ADAC Structure

Antineoplastic Drug Administration Course (ADAC)

Developed by the Cancer Institute NSW • Implemented by health care organisations



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Appendix 2: Risk Stratification and Service Delineation

Table 1 Risk Stratification Matrix

Low Risk	Medium Risk	High Risk
<p>Chemotherapy regimen suitable for monitoring via general practitioner between less frequent reviews (may be via telemedicine) by supervising haematology/oncology service</p> <ul style="list-style-type: none"> > Patient stable, with performance status equivalent to ECOG¹⁰ 0, 1 or 2. > Patient not considered at increased risk due to age or comorbidities > No concerns regarding patients ability to comply with treatment > Uncomplicated vascular access requirements > Non-vesicant agents > Single agent chemotherapy > Standard or low dose chemotherapy > Low risk of grade 3 and 4 toxicities > Low risk of dose limiting side effects requiring dose adjustment > Low risk of adverse drug reactions > Low complexity of premedications, supplementary treatments and hydration requirements > No planned requirement for blood results within a 24 hour timeframe 	<p>Chemotherapy regimen suitable for monitoring via general practitioner, nurse practitioner or general physician with alternate reviews (may be via telemedicine) by supervising haematology/oncology service</p> <ul style="list-style-type: none"> > Patient stable, with performance status equivalent to ECOG 0, 1 or 2 > Vascular access device (VAD) required > Vesicant agents included > Combination chemotherapy > Standard or low dose chemotherapy > Moderate risk of grade 3 toxicities, low risk of grade 4 toxicities > Moderate risk of dose limiting side effects requiring dose delay or modifications. > Risk of adverse drug reaction requiring medical emergency management > Complex premedications, supplementary treatments and hydration requirements > Requirement for standard blood results within 24 hours 	<p>Chemotherapy regimen only suitable for monitoring and supervision by specialist haematology/oncology service</p> <ul style="list-style-type: none"> > Patient may be medically unstable with variable performance status > Intrathecal chemotherapy > Intracavity or intravesical chemotherapy > High dose chemotherapy > Moderate to High risk of grade 3 or 4 toxicities and side effects > High risk of requirement for dose modifications > High risk of adverse drug reactions requiring emergency management > Complex premedications, supplementary treatments and hydration requirements which may require inpatient stay > High intensity phase of treatment > Uncommon and highly specialised drugs > Anticipated requirement for urgent blood/pathology results

¹⁰ Eastern Cooperative Oncology Group

Table 2 – Clinical Service Delineation for Chemotherapy Services

	Level 1-3 Chemotherapy Services	Level 4 Chemotherapy Services	Level 5-6 Chemotherapy Services
General description/summary	<ul style="list-style-type: none"> > Manage low risk chemotherapy for common cancers in stable patients > Standard infrastructure > General workforce with additional chemotherapy competencies 	<ul style="list-style-type: none"> > Manage medium risk chemotherapy for common cancers in stable patients > Moderate to highly developed infrastructure > Specialist workforce 	<ul style="list-style-type: none"> > Manage high risk/complex chemotherapy, uncommon/rare or high risk cancers and unstable patients > Highly developed infrastructure > Highly specialised workforce
Service setting examples	<ul style="list-style-type: none"> > Community Hospitals > Inner Country Health services > Local Area hospitals > Primary health care settings > Nursing homes > Patient homes 	<ul style="list-style-type: none"> > General Hospitals > Community hospitals with well developed cancer specialist workforce and infrastructure requirements 	<ul style="list-style-type: none"> Tertiary Hospital providing comprehensive cancer services with dedicated multi disciplinary haematology and/or oncology specialty and supportive care services.
Governance requirements	<p>Outpatient/community chemotherapy provision must be under the supervision of a level 5 or 6 Haematology or Oncology service.</p>	<p>Outpatient/community chemotherapy provision must be under the supervision of a level 5 or 6 Haematology or Oncology service.</p>	<ul style="list-style-type: none"> > Provides supervision of chemotherapy for other rural and metropolitan services. > May have state-wide referral and coordination role > Some complex and rare cancers and cancer treatments will be treated / available in level 6 services only.
Types of chemotherapy provided	<p>Outpatient/community chemotherapy for common solid tumours and low grade haematological malignancies</p>	<p>As for level 1-3 plus: Outpatient chemotherapy for common solid tumours, some lymphomas and other</p>	<p>As for level 4 plus: Complex and or high risk inpatient and outpatient chemotherapy by cancer specialist</p>

	Level 1-3 Chemotherapy Services	Level 4 Chemotherapy Services	Level 5-6 Chemotherapy Services
	<ul style="list-style-type: none"> > Low risk oral chemotherapy > Single agent, non-vesicant, low toxicity parenteral chemotherapy 	<ul style="list-style-type: none"> common low grade/low risk haematological malignancies > Medium - High risk oral chemotherapy > Combination and/or vesicant parenteral chemotherapy with moderate complexity and low to moderate toxicity. 	<ul style="list-style-type: none"> workforce > Most malignant haematology (acute leukaemia, high risk lymphomas) > Bone marrow transplant services > Majority of acute paediatric oncology & malignant haematology > Clinical trials program > Can provide concurrent radiotherapy
Clinical review and medical consultation requirements	<ul style="list-style-type: none"> > Access (on site, visiting or tele-medicine) to general practitioner (GP) or cancer nurse practitioner (NP) or oncologist/haematologist for clinical review prior to each cycle of chemotherapy. > Access (on site, visiting or tele-medicine) to general practitioner (GP) or cancer nurse practitioner (NP) or oncologist/haematologist for surveillance, clinical review and management of low complexity symptoms of disease and toxicities of treatment. > Access (on site, visiting or tele-medicine) to general practitioner (GP) or cancer nurse practitioner (NP) or oncologist/haematologist for 	<ul style="list-style-type: none"> As for level 1-3 plus: > Access (on-site, visiting or tele-medicine) to a general physician, paediatrician (for all paediatric patients), haematologist or oncologist for consultation, supportive care and outpatient treatment > Areas of responsibility include monitoring and surveillance for most cancers > Inpatient management of chemotherapy toxicity 	<ul style="list-style-type: none"> As for level 4 plus: > Onsite oncology and/or haematology consultants for provision of comprehensive chemotherapy service and supervision of care provided at level 1-6 chemotherapy services (visiting or tele-medicine). > Onsite paediatric oncology or haematology consultant for provision of comprehensive paediatric chemotherapy service and supervision of paediatric cancer care provided at level 1 - 6 services (visiting or tele-medicine). > Onsite access to advanced trainees (oncology or haematology registrars),

	Level 1-3 Chemotherapy Services	Level 4 Chemotherapy Services	Level 5-6 Chemotherapy Services
Staff chemotherapy competency requirements	Chemotherapy competency (see Standard 2) is essential for all clinicians involved in the administration of chemotherapy	As for level 1-3 plus: > On-site access to specialist cancer nurses with comprehensive chemotherapy competency	As for level 4 plus: > Dedicated, on-site specialist cancer workforce with comprehensive chemotherapy competency including medical staff with competency in administration of intrathecal chemotherapy
	surveillance, monitoring and survivorship care for low risk, common cancers.		<p>cancer nurse practitioners (NP) or nurse practitioner candidates (NPC) for clinical review prior to each cycle of chemotherapy.</p> <ul style="list-style-type: none"> > Onsite access to advanced trainees (oncology or haematology registrars), cancer nurse practitioners (NP) or nurse practitioner candidates (NPC) for surveillance, clinical review and management of low complexity symptoms of disease and toxicities of treatment. > Monitoring, surveillance and survivorship care for rare or high risk cancers

Clinical Support Service requirements

<p>Pharmacy services</p>	<ul style="list-style-type: none"> > Access to drugs supplied on individual prescription required > Service provided on-site, or overseen by pharmacist located elsewhere > Community based medication review services available 	<p>On-site or visiting pharmacy service available and includes</p> <ul style="list-style-type: none"> > Pharmacy controlled drug distribution to inpatients and outpatients > On-site or regional access to general clinical pharmacy service for inpatients and outpatients > On-site, visiting or remote access to cancer clinical pharmacist. > Access (on-site or external contract) to chemotherapy production services > Access to drug information. > Provision of chemotherapy drug monitoring, utilisation review and adverse drug reaction reporting > Additional requirements for moderate-high risk treatment regimes within this category include: > Pharmacist on call for 24 hours 	<ul style="list-style-type: none"> > Clinical pharmacy service provided 7 days a week including participation in ward rounds, MDT meetings and outpatient services > Services include specialist cancer clinical pharmacists (on-site or visiting) > Provides clinical consultation to other hospitals as required > Has access to sterile manufacturing and IV admixture service including cytotoxic drug and parenteral nutrition (on-site or external contract). > May provide production pharmacy service for other sites.
<p>Pathology services</p>	<p>Minimum access requirements include:</p> <ul style="list-style-type: none"> > Local access to specimen collection > Specimens transferred to referral laboratory with frequency dependant upon available transfer 	<p>Minimum access requirements include:</p> <ul style="list-style-type: none"> > Testing performed by health workers using suitable 'point of care' testing devices > Blood storage facilities available with some 	<ul style="list-style-type: none"> > Comprehensive pathology service providing 24 hour on-site services > On-site or visiting Pathologists and Haematologists

	<p>schedules</p> <ul style="list-style-type: none"> > Storage and packaging for transport in accordance with regulation and guidelines 	<p>on site stock of O negative blood</p> <ul style="list-style-type: none"> > QA activities in place under the supervision of a RCPA/NATA accredited laboratory Additional requirements for moderate-high risk treatment regimes within this category include: <ul style="list-style-type: none"> > On-site core pathology services available with on-call arrangements over 24 hours 	
<p>Emergency services</p>	<p>Minimum access requirements include:</p> <ul style="list-style-type: none"> > Basic resuscitation equipment and drugs > Able to resuscitate and provide limited stabilisation prior to transfer to a higher level of care > Have identified referral/transfer pathways for cancer emergencies 	<p>Minimum access requirements include:</p> <ul style="list-style-type: none"> > Local GPs rostered to provide 24 hour cover or on-site medical staffing (subject to volume) > Access to a range of specialist consultation > Appropriate skilled and experienced workforce to support service > Designated Emergency Service with assessment and treatment area and separate resuscitation facilities > Have local policies procedures and guidelines for management of cancer emergencies > Have identified referral/transfer pathways for cancer emergencies 	<ul style="list-style-type: none"> > Designated emergency extended care service > Standardised policies, procedures and guidelines for management of cancer emergencies > Designated spaces with negative pressure capacity > Medical staffing provided by experienced Emergency Medical Officers 24 hours > Access to on-site specialist services > On-site IC/HD & CC service capacity > Capacity for invasive monitoring and assisted ventilation > Accepts transfers of appropriately triaged crucial care retrieval patients from other hospitals > On-site skilled and experienced multidisciplinary workforce > If a combined adult/paediatric service, designated paediatric treatment area with resuscitation facilities

Critical care services	<p>Minimum access requirements include:</p> <ul style="list-style-type: none"> > Capacity to provide appropriately skilled and experienced workforce for 'specialising' services until appropriate transfer can be arranged. > Identified referral/transfer pathways for critical care services 	<p>Minimum access requirements include:</p> <ul style="list-style-type: none"> > Inpatient area suitable for patients requiring observation over and above that in general ward area > 24 hour medical cover to site > Access to a range of visiting Specialists including general physician > Appropriately skilled workforce available to support service as determined <p>Additional requirements for moderate-high risk treatment regimes within this category include:</p> <ul style="list-style-type: none"> > A designated HD Service > Ability to provide basic, multi-system life support usually for less than a 24 hour period > Ability to provide immediate resuscitation and short term cardio-respiratory support > Ability to monitor and prevent complications in moderate-high risk chemotherapy patients > On-site medical staffing 	<ul style="list-style-type: none"> > Has an integrated ICU Service & HD service > Has a designated CC Service > Capacity to provide multi-system support > Extra-corporal renal supports > Has access to support invasive cardiovascular monitoring > Medical staffing provided by on-site medical staff and Specialists
Supportive care services	Supportive care services provided on-site or via partnership arrangement (local or virtual service) See standard 8	Supportive care services provided on-site or via partnership arrangement (local or virtual service) See standard 8	Supportive care services provided on-site and within community for inpatient and outpatient care See standard 8

Palliative care services	Palliative care services provided on-site or via partnership arrangement (local or virtual service)	Palliative care services provided on-site or via partnership arrangement (local or virtual service)	<ul style="list-style-type: none"> > Palliative care services provided on-site or via partnership arrangement with local hospital. > Must include ability to access inpatient palliative care
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Appendix 3:

Interview Questions

- Demographical Data:**

Name:

Age Group	20-35	36-45	46-55	56-60	60 and above
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Town		Working Hours	Full time	Part time
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Qualifications:.....

- General questions about the experience:**

1. How long have you been a registered nurse? And in which specialty area do you work?

Years:..... Specialty area:.....

2. How long have you administered chemotherapy?

.....

3. Have you given chemotherapy previously in metropolitan or another rural centre?

.....

- Chemotherapy administration in this specific workplace area:**

4. On average how many cancer patients do you come in contact with per week, whether direct contact or indirect contact such as phone calls?

In General.Direct.....Indirect.....

.....

5. How many chemotherapy treatments do you give per week?

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6. In general what advantages or disadvantages do you see in the chemotherapy administration program in rural SA?

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• **About your role in cancer care and treatment:**

7. Could you describe your daily role?

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.....

8. How do you perceive your role in taking care of a cancer patient in this organisation?

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.....

• **Competency and qualification acquired to take the role:**

9. What chemotherapy/cancer related programs have you completed?

Program.....

10. Do you feel equipped and prepared with the knowledge and skills you need to undertake the role of chemotherapy administration?

Yes No Partly

11. If not, why? And in your opinion what might help you to be fully prepared in this role?

.....
.....
.....

• **Challenges and commitments:**

12. What are the main day-to-day challenges in your role, eg clinical, educational readiness, administrative, IT?

.....

13. Being the only or one of the very few rural clinicians who are designated to this role within the rural community, do you feel that you have role to educate or facilitate the cancer awareness programs if there is any or educate other nurses to take this role?

Yes.....No.....

.....

14. Do you feel that being in rural area has affected your care delivery?

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.....
15. In your opinion, what might be helpful for rural nurses who are involved in cancer care to sustain their skills and knowledge?

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• **Using external resources:**

16. Do you use any online websites to help you e.g. CanNet, eviQ? If so how do they assist or support you?

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17. Do you have a network and contact with metropolitan cancer settings that you utilize as external resources?

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• **Suggestions:**

18. Consider that you have been promoted to a leading position in country health, what changes or modifications you might apply or suggest to the role of rural nurses who care for cancer patients?

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19. If you have an idea or a suggestion that you think it will enhance, support or improve your practice or workplace, to whom or where you would take this idea?

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20. Anything else you would like to add?

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Appendix 4: Interviews Schedule/Timetable

Commencement of the Recruitment Process	23 July 2014
Email to Answer Participants' queries	30 July 2014
First Interview	7 August 2014
Second Interview	7 August 2014
First Follow Up Email	11 August 2014
Third Interview	15 August 2014
Fourth Interview	21 August 2014
Fifth Interview	21 August 2014
Second Follow Up (Phone call)	29 August 2014
Sixth Interview	4 September 2014
Seventh Interview	4 September 2014
Eighth Interview	4 September 2014

Appendix 5: Ethics Approval Form



Government of South Australia
SA Health

SA Health Human Research Ethics Committee
Level 10, Citi-Centre Building
11 Hindmarsh Square
ADELAIDE SA 5000
Telephone: (08) 8226 6367
Facsimile: (08) 8226 7088

Mr Qasem Alnasser
The University of Adelaide
C/- 397 Prospect Road
BLAIR ATHOL SA 5084

Dear Mr Alnasser

HREC reference number: HREC/14/SAH/94

Project title: A qualitative study to explore the perceived roles of rural nurses who administer cancer chemotherapy

RE: HREC Application – Approval

Thank you for responding to the issues raised by the SA Health HREC in relation to the above project. Your response was reviewed by a sub group of the HREC out-of-session.

I am pleased to advise that your application has been granted full ethics approval and appears to meet the requirements of the *National Statement on Ethical Conduct in Human Research*.

Please note the following conditions of approval:

- Please replace the wording "The individual interviews will be audio recorded upon your consent" with "The individual interviews will be audio recorded if you provide your consent" on page 2 of the Participant Information Sheet.
- The research must be conducted in accordance with the 'National Statement on Ethical Conduct in Human Research.'
- A progress report, at least annually, must be provided to the HREC.
- When the project is completed, a final report must be provided to the HREC.
- The HREC must be notified of any complaints by participants or of adverse events involving participants.
- The HREC must be notified immediately of any unforeseen events that might affect ethical acceptability of the project.
- Any proposed changes to the original proposal must be submitted to and approved by the HREC before they are implemented.
- If the project is discontinued before its completion, the HREC must be advised immediately and provided with reasons for discontinuing the project.

HREC approval is valid for 3 years from the date of this letter.

Appendix 6: Withdrawal Form

Study Title: Perceptions of rural nurses extending their role to administer chemotherapy

STUDY WITHDRAWAL

You have indicated that you might withdraw from the study and have communicated this information to your research principal. You have the right to withdraw from this study at any time and for any reason without prejudice to your future relationship with the University of Adelaide.

Read this form carefully. Ask a member of the study team if you have any concerns and make sure you receive satisfactory answers to your questions before you sign it. Your participation in the study remains confidential and results will only be available as outlined in the main consent form you signed at the start of the study.

By signing this form, you confirm that you have had enough time to review this form and all of your concerns and questions have been answered to your satisfaction.

I withdraw my consent for participation in this study in accordance with the withdrawal option I have selected above.

Participant's signature	Date	Participant's name (please print)
Signature of staff reviewing options	Date	Name of staff reviewing options (please print)

To be completed by site staff

Participant ID #: _____

Investigator: _____

If you have any questions, please feel free to contact me (see below for contact information)
This study has been reviewed and received ethics clearance through SA Health Human Research Ethics Commit. Ethics

Qasem Alnasser RN The Primary Researcher Mobile: +61 421 818 993 A1634963@student.adelaide.edu.au	Dr Kate Cameron RN MSc PhD Research Supervisor Ph. +61 8 8222 2991 Fax: +61 8 8313 3594 kate.cameron@adelaide.edu.au	Mrs Janette Prouse RN MNsSc MNP Research Supervisor Ph. +618 8222 0052 janette.prouse@health.sa.gov.au
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Reference Number (HREC/14/SAH/94).

Human Research Ethics Committee (HREC)

CONSENT FORM

1. I have read the attached Information Sheet and agree to take part in the following research project:

Title:	Perceptions of rural nurses extending/expanding their role to administer chemotherapy.
Ethics Approval Number:	HREC/14/SAH/94

2. I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.
3. Although I understand the purpose of the research project it has also been explained that involvement may not be of any benefit to me.
4. I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.
5. I understand that I am free to withdraw from the project at any time.
6. I agree to the interview being audio recorded. Yes No
7. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

Participant to complete:

Name: _____ Signature: _____ Date: _____

Researcher/Witness to complete:

I have described the nature of the research to _____
(print name of participant)

and in my opinion she/he understood the explanation.

Signature: _____ Position: _____ Date: _____

Invitation Letter

Subject: Letter of Invitation to participate in nursing research

Date: 12/06/2014

Title of Study: Perceptions of rural nurses extending/expanding their role to administer chemotherapy

Student Principal Investigator: Qasem Alnasser RN, primary researcher, School of Nursing, The University of Adelaide

Faculty Supervisor: 1- Dr. Kate Cameron PhD, Course Coordinator and research supervisor, School of Nursing, The University of Adelaide. 2- Dr. Janette Prouse PhD, Research Supervisor, Royal Adelaide Hospital

I, Qasem Alnasser RN, the primary researcher, a student in the Master of Nursing Science program from university of Adelaide, invite you to participate in a research project entitled *the perceived roles of rural nurses who administer cancer treatments*.

The purpose of this research project is to explore the perceptions of rural cancer nurses who are administering chemotherapy in rural areas. Participants will be asked to reflect on their daily practices in administering chemotherapy. Participation in this study is entirely voluntary. Should you choose to participate, you will be invited to take part in individual confidential interviews. The participants' names or location of work will not be identified in the research report and confidentiality will be ensured throughout the research process.

The individual interviews will be 45-60 minutes and you will be invited to comment on the summary of your interview. The location for the interview will be negotiated with you, either at your workplace or by phone. Consent for participation will be sought before the commencement of the interview.

It is hoped that the results of this research will give a clear vision about the roles of rural nurses administering cancer treatments and to outline needs for further research in the future.

If you have any questions, please feel free to contact me (see below for contact information).

Thank you,

Qasem Alnasser RN
The Primary Researcher
Mobile: +61 421 818 993
A1634963@student.adelaide.edu.au

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Research Supervisor
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This study has been reviewed and received ethics clearance through SA Health Human Research Ethics Commit. Ethics Reference Number (HREC/14/SAH/94).