CLINICAL DECISION MAKING

BY REGISTERED NURSES IN RESIDENTIAL AGED CARE:

A CRITICAL REALIST CASE STUDY

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Kaye Milligan

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ABSTRACT

Increasing numbers of people are living longer and projections indicate that a greater number of frail elders will require support from the residential aged care sector. Registered nurses are the principal health care professional with sustained oversight of residents and make many of the clinical decisions that affect the health and outcomes of care of the residents. This thesis explains the clinical decisions that registered nurses make in the New Zealand residential aged care sector.

The study was undertaken using a critical realist case study framework. This case study describes the clinical decisions the registered nurses make and explains the social structures through causative factors that intersect to cause, redirect, or block the clinical decisions. The data collection methods were participant observation, interview, and document analysis in three residential care facilities. Fourteen registered nurses participated in the study. Data analysis included reasoning processes whereby patterns from the data were reviewed within current knowledge, and explanations developed.

The clinical decisions represent the comprehensive nature of nursing practice in this sector. Physical and mental health, and the management of behavioural issues in the context of gerontology are significant foci of nursing frail elders. Three causative factors inherent to the social structure of residential aged care were identified that generate, redirect, or block the clinical decisions. These causative factors are: the relationships the registered nurses develop with the resident, their family, and the general practitioner, which are embedded within the registered nurse role; the specific context of the residential aged care sector in which risk aversion, financial constraints, and limited support for the development of the registered nurses prevails; and the individuality of each registered nurse whose knowledge and agency affects their concern for, and management of, the residents.

This thesis presents a comprehensive explanation of the complexity of the registered nurses' clinical decisions. It identifies that some clinical decisions reside within a zone of certainty, as the registered nurse makes the decision to act or to not act. Other clinical decisions reside within the zone of uncertainty, as the registered nurse experiences indecision, and may 'wait and watch' or seek advice. Recommendations for practice focus on the clinical decisions within the zone of uncertainty, the subsequent ongoing professional development requirements, and the need for clinical support and clinical leadership.

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CHAPTER ONE

Introducing the study

Introduction: Clinical decision making

Clinical decision making is a fundamental aspect of registered nurses' (RNs') clinical practice, and has a direct impact on the health and wellbeing of each client. The RNs engage in complex cognitive processes to care for individual clients with changing health needs within challenging clinical environments. This thesis explores the clinical decisions made by RNs in Residential Aged Care (RAC) in New Zealand, and explains the causative factors underlying these decisions. The search for causative factors is commensurate with the critical realist case study research approach that is the underpinning theoretical framework for the study. Critical realism is a recent addition to the research approaches applied within nursing. This study contributes to understanding clinical decision making by RNs in the specific context of RAC by explaining the causative factors and processes that generate the clinical decisions.

This research project originated from the researcher's respect for the work of the RNs in this particular clinical context. Registered nurses within this sector work in Rest Homes, Continuing Care Hospitals, and Specialist Dementia Units, and this research targets the clinical decisions by RNs in these settings. The researcher has worked in Rest Homes and Continuing Care Hospitals with nursing students who, on the whole, are unaware of the level of practice complexity present for RNs. These residential homes are simultaneously a specific clinical work setting for the RNs and the final place of residence for the elders[1] who live there. A particular interest in

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[1] The term elder will be utilised as a respectful term referring to the older person who is chronologically over 65 years of age

core aspects of nursing practice, and in the ways in which knowledge and skills intersect with philosophical perspectives of nursing in the aged care context, has also informed the research.

The researcher's interest in the clinical decisions made by RNs in RAC also stemmed from initial readings focused on the implementation of evidence in nursing practice in this sector. Following an initial review of the literature it became evident the main purpose and use of evidence is to inform the clinical decisions that RNs make. It was also evident that whilst much research has been conducted on clinical decisions in the acute hospital environment, there has been little research focused on the RN in the aged care sector, especially in New Zealand. This study was therefore focused on the clinical decisions that RNs make in RAC, as well as explanations of how and why they make these decisions.

Background and rationale of the study

Residential aged care in New Zealand

Background

This study has taken place at an interesting time in the development of the New Zealand Aged Care Sector. There is widespread recognition that the current pressures on the sector will increase with the increasingly ageing population. Demand for care is expected to increase by an extra 12,000 to 20,000 residents over the next eleven years, with a particular increase in the need for dementia care (Grant Thornton, 2010). Current predictions estimate that over 47% of elders aged over 65 years, and 66% of elders over the age of 85 years, will enter a residential aged care facility for end of life care (Broad et al., 2015). The effect on the sector will be unprecedented, although there have been constant pressures on funding and staffing since caring for elders in institutional settings commenced. In the late nineteenth century institutions for the 'destitute and infirm' or the 'necessitous aged' were developed (Enticott, 1988). At this time, needs were classified into home care and hospital care and the residents exchanged their

freedom and their old age pension for security, a roof, bed, meals, and the company of those from a similar background (Enticott, 1988). In current times many residents continue to exchange their pension, or their life savings, for the security and care offered by residential care homes. Residential aged care now provides health and personal cares rather than the previous model which provided social welfare and housing (Broad et al., 2015).

The New Zealand Government has promoted a model of care that supports elders to remain in their own homes for as long as possible through the funding of support services that are home based (Ministry of Social Development, 2001). This strategy, along with other measures such as compulsory standardised needs assessment to determine the individual's level of need, has been effective in reducing the proportion of elders entering residential care homes. In Auckland over the past twenty years the proportion has reduced from a ratio of 1:13 to 1:18 elders living in residential care homes (Broad et al., 2011). Once home based resources are unable to meet the daily needs of highly dependent elders, they may be eligible to enter the residential care sector, where subsidised care is available subject to financial criteria. The model of residential aged care is one in which the support services are funded with government subsidies, and care is provided by aged care facilities.

Unity and diversity

Whilst the term RAC appears to represent a unified sector, in practical terms residential care for elders in New Zealand has diverse and fragmented characteristics. Ownership of the homes is by private investors and listed companies, non-government organisations, community trusts, individual owner-operators, and by five District Health Boards (DHBs) (Ministry of Health, 2014). The configurations of residential aged care homes are divergent with differing sizes and varying facilities. The Ministry of Health provides a list of certified residential homes along with the number of beds they offer and the types of care they provide (Ministry of Health, 2015b). As listed, the residential care homes provide a mixture of 'rest home, medical, geriatric,

psychogeriatric, dementia care, psychiatric, physical, and intellectual' care. The number of beds varies widely from six to over 200 per residential home. Some residential care facilities cater for a mixture of age groups.

Legislative and regulatory framework

A range of New Zealand legislation directs the provision of public funding for residential aged care services (Paterson, 2006). Legislation pertains firstly to the funding of services, secondly to the health professionals who care for elders in rest homes, and thirdly to the standards of services to be provided. Firstly, funding of services is provided under the Social Security Act 1964, and changes have occurred in these funding arrangements over time. Targeted funding is currently provided by the Government through DHBs to the certified residential care homes. Each publically funded, or partially funded resident must be assessed and deemed in need of the particular level of care required. The resident is also financially means tested, and may be required to pay, or partially pay, for the services they require. Each residential care home is funded on a daily basis for the care of the subsidised resident, subject to stipulated criteria.

Secondly, the regulation of health practitioners is provided by the Health Practitioner Competence Assurance Act 2003. This Act enables each health profession to measure the standard of care provided by their members to the recipients of care in terms of competent and safe practices. Thirdly, safety and quality requirements of health services regulation are provided through delegated legislation of the Health and Disability Services (Safety) Act 2001. This act provides for standards for aged care services to be set and published by Standards New Zealand through the Ministry of Health. The standards include the Health and Disability Services (General) Standards NZS 8134:2008 (Ministry of Health, 2008a) and Health and Disability Services (Restraint Minimisation and Safe Practice) Standards NZS 8141:2008 (Ministry of Health, 2008b). Restraint minimisation protects the resident from being restrained without authorisation and also protects staff from assaulting a resident. Administration of a medication

as a chemical restraint would breach this standard. Each of these areas of legislation impact on the residential aged care environment and therefore the work environment of the RN.

Two further key legal frameworks for the general provision of health services, applicable to all sectors, are to be found within the Code of Health and Disability Services Consumers' Rights (Health and Disability Commissioner, 1996) and the Health Information Privacy Code 1994, 2008 (Privacy Commissioner, 2008). The rights that consumers hold impose a duty on the residential care provider and health professionals to meet these rights. They include the consumer's right: to be treated with respect; to be free from discrimination, coercion, harassment and exploitation; to dignity and independence; to services (treatments and procedures) of an appropriate standard; to effective communication; to be fully informed; to make an informed choice and to give consent which is informed; and to support (Health and Disability Commissioner, 1996). Elders are also entitled to have their privacy and confidentiality maintained through the Privacy Act 1993. The RN may be held accountable to the Health and Disability Commissioner or Nursing Council of New Zealand (NCNZ) if there is a breach of the person's rights (Johnson, 2010).

Each resident has the right to make independent decisions about his or her care and treatment, and to accept or decline them. If the resident's decision making abilities deteriorate and the resident is deemed not competent, a lawful advance directive is sufficient to provide consent for treatment or a refusal of treatment, but an informally expressed desire should be very carefully dealt with (Skegg, 2015d). The Ministry of Health has published a written guide to assist health care workers regarding advance care planning, providing information to inform their decisions (Ministry of Health, 2011a). In an advance care plan the person expresses their values, goals and wishes and preferences for their future health care. The advance directive is an oral or written directive, to be implemented only if the person becomes not competent, which contains the person's response to future health care procedures (Ministry of Health, 2011a).

Contractual arrangements

Contractual arrangements are stipulated by the Ministry of Health through the Age Related Residential Care Services Agreement for the Provision of Age Related Residential Care which provides the terms for rest homes, hospitals, and dementia units (excluding psychogeriatric hospitals for which there is a separate agreement). The agreement is between the local DHB and the individual residential care provider, and is reviewed and modified annually (Ministry of Health, 2015a). Further contractual requirements are quality audits required by both the Ministry of Health and DHB. The Health and Disability Commissioner also has the ability to investigate any complaints.

The Age Related Residential Care Services agreement (Ministry of Health, 2015a) stipulates the services that are to be provided to the subsidised resident. These include accommodation of a single or shared room with access to a communal toilet and shower, and services including meals, cleaning, laundry, and transport for medical attention including a person to accompany the resident if required. Specified healthcare is also included covering nursing care, dressings and supplies used in treatments, prescribed medications, and continence products. Required examinations from a General Practitioner (GP) or Nurse Practitioner (NP), and any treatment ordered by the GP or NP, are also included. The workforce in this sector consists mainly of unregulated care-giving staff who are employees of the residential home. Caregivers are employed to provide direct cares to the resident as well as carry out housekeeping duties as stipulated in their employment contract (Robinson, 2013). Caregiving staff are supervised by RNs who have a specific scope of practice, which is regulated by the NCNZ. Staffing levels vary although minimum levels are required in the Age Related Residential Care Services contract.

Contemporary challenges

Some of the current issues that have been identified in reviews and reports, academic literature, and also in the popular press that affect the residential aged care sector include

- concerns about staffing, poor pay for unregulated care giving staff (Human Rights Commission, 2012), the viability and quality of RN services (Carryer, Hansen, & Blakey, 2010), and the increasing 'scope creep' whereby certain skills and tasks are delegated to the care giving staff (Ravenswood, 2013);

- recruitment and retention of staff, the difficulty of attracting RNs to this area of practice (Human Rights Commission, 2012), high rates of staff turnover which increase costs through replacement and training costs as well as reduces the quality of services (Booth, Miller, & Mor, 2007);

- owners and operators as private businesses as there are concerns about overall profitability and the ability to operate with older less economical buildings (Grant Thornton, 2010);

- regulatory issues with ongoing concerns about the auditing of quality of care (Labour/Green/Grey Power, 2010; Wilson, 2014);

- increasing demand for services with concerns about the ability of the sector to meet future demand through adequate staffing (Howard-Brown & McKinlay, 2014; Kaine & Ravenswood, 2013);

- funding and investment tension between the use of public money to subsidise care and the private companies' need to make a profit in their operations (Grant Thornton, 2010);

- increasing levels of frailty and dependency with overall increasing levels of acuity (Boyd et al., 2008; Grant Thornton, 2010); and

- concerns about the quality of care due to a lack of trained caregivers as well as RNs to ensure consistent quality of care (Labour/Green/Grey Power, 2010).

There are concerns that future needs will not be met without significant change in this sector (Grant Thornton, 2010). Each of the issues has an impact on the role of the RN, which is situated at the intersection of employment, contractual, and regulatory requirements, and the daily care that residents receive.

Residential aged care homes

The type of ownership of residential care homes varies. Since the mid 1970s funding for aged residential care has changed so that now residential homes are subsidised through public funding, and many are operated by private owners (Kiata, Kerse, & Dixon, 2005). Individual private providers and some voluntary groups have reduced their ownership and management of this type of facility (Labour/Green/Grey Power, 2010). Reasons for selling include a lack of funding (Labour/Green/Grey Power, 2010). Currently approximately two-thirds (68%) of the RAC facilities are owned by profit driven organisations (Boyd et al., 2008; Grant Thornton, 2010), and these facilities must therefore meet the conflicting dual imperatives of providing costly care to residents and returning sufficient profit to meet owners requirements.

The type of services available also varies. The levels of residential care are divided into four levels: rest home (standard level care), rest home (dementia), continuing care hospital, and psycho-geriatric services. Residents are admitted depending on their assessed level of dependency and risk to their safety. Bed numbers vary between six and over 287 beds, including rest home beds, within different facilities (Ministry of Health, 2015b). There were 822 dwellings for residential care for elders identified in the New Zealand 2013 Census (Statistics New Zealand, 2013a). Often a retirement village and serviced apartments, separate to residential care, are co-located for convenience and a seamless transition for residents (Boyd et al., 2008; Grant Thornton, 2010).

The New Zealand Government requires residential homes to be certified and audited to ensure quality of facilities and care. Once certified, the residential care home has a certification audit every one to four years with a spot surveillance audit approximately mid-way before the next audit is due. The residential care home must also report to their DHB with documented progress on any issues found at the certification audit (Ministry of Health, 2013a).

General practice and residential aged care

The GPs who work in this sector usually incorporate the medical care of residents as part of their business practice. In a comparatively recent poll of 108 GPs in New Zealand 22% identified that they held a contract with a RAC facility to provide regular clinics, and 50% of GPs identified that they regularly visited residents (Ratcliffe, 2013). There is some concern that the number of GPs who are interested in this area of medical practice is reducing (Ratcliffe, 2013). In a new initiative, which may ensure continuity of care for residents and the residential home, a mobile GP and NP practice is providing gerontology focused medical services to residents in residential homes in the Auckland and Waitemata areas (ThirdAgeHealth, 2015).

The GP with a contract to the facility to provide regular medical services may provide services for all residents and will attend the home at set times each week (such as Monday morning and Friday afternoon), usually for set time frames (such as 1.5 hours). When entering a residential home the resident is able to choose to continue with their usual GP if that GP does not hold the contract with the facility. Each resident must be medically assessed on admission to the home (within two days before or after admission) as well as at least every one to three months, or as clinically indicated, as stipulated in the contract between the residential care home and the DHB (Ministry of Health, 2015a). The GP (or a Nurse Practitioner) must review the resident's medication each three months. The residential care home must also ensure access to emergency medical care at all times.

The individual GP is available for verbal or electronic communications in between their visits during their working hours. They may provide limited medical services out of hours and at weekends. Access to after-hours medical services, if the GP is not available, is from a private medical company or a public hospital via ambulance.

The residents

Residents who live in RAC facilities are aged 65 years and over, and they comprise two age related generations with a 35 year span. Whilst chronological definitions of generational cohorts differ, the cohorts over 65 years incorporate a portion of the older baby boomers who in 2015 are aged up to 72 years (Lyon, Legg, & Toulson, 2004). The generation older than the baby boomers is termed the veterans or the silent generation, and in 2015 they are aged 73 to 90 years (Lyon et al., 2004). Chronological age is less important for the purposes of this thesis, and so the elders who are central to this study are those over 65 years of age who live in the RAC environment.

Information about entry to residential care for elders is available on the Ministry of Health website through a publication on needs assessment and support services for older people (Ministry of Health, 2011b). Subsidised entry to a long term residential care facility is through a standardised assessment, and only elders with high or very high needs that will not abate will meet admission criteria. A further criterion is that the elder is not able to be safely cared for in the community. Both criteria must be met in order that the elder is able to apply for subsidised funding through disability support.

The standardised assessment is completed through the DHB or DHB Needs Assessment and Service Co-ordination agency (NASC) (Ministry of Health, 2011b) and includes assessment of the resident's physical, social, and mental needs and the person's spiritual health (Eldernet, 2015). The older person may have had a comprehensive clinical assessment completed when they lived in their own home, if they required home-based support services, through the interRAI comprehensive clinical assessment tool (National Health IT Board, 2015) (community version). The use of the interRAI long term care facilities (interRAI LTCF) assessment tool has been mandatory in the RAC sector since July 2015, and the completed assessment provides data for nurses to use when planning individual care for residents (National Health IT Board, 2015).

A further condition for a subsidy is that the elder does not have private resources above the stipulated threshold. The financial aspect of entry to a residential care home is through Work and Income within the Ministry of Social Development (Work and Income, 2015). A resident who does not meet the entry criteria could choose to fully pay for their care, and entry would be by agreement with the facility rather than by assessment of needs. Since 2010, the criteria for subsidy have contributed to approximately 70% of residents being fully or partly subsidised, leaving approximately 30% to pay full fees privately (Boyd et al., 2008; Grant Thornton, 2010).

The 2013 New Zealand Census identified there were 29,825 people over 65 years of age living in residential care facilities (Statistics New Zealand, 2015b). This Census data showed that 56% of residents were aged over 85 years, with 28% being over 90 years of age, and nearly 8.5% over 95 years of age. Over two thirds of the residents were women (68.1%), and less than two thirds were widowed (60.4%) (Statistics New Zealand, 2015a). The 2013 New Zealand Disability Survey results showed that 93% of adults (mainly over the age of 65 years) who live in residential care facilities have multiple disabilities with subsequent high levels of care needs (Statistics New Zealand, 2013b). The main causes of disability were illness, disease, or the result of natural ageing. The survey reports that many elders experienced difficulty with mobility (90%), vision (34%), hearing (43%), and speaking (30%). The survey also reported that many have difficulty with memory (51%), learning (41%), and their mental health (31%).

It is difficult to obtain accurate numbers of elders living in each of the range of RAC facilities. This is due to data collection for specific and different purposes with varying reporting formats (Broad, Ashton, Lumley, & Connolly, 2013). Towards 2010 an estimated 57% of residents lived in rest homes, 31% in private hospitals, 8% in dementia units, and 2% in psycho geriatric care (Boyd et al., 2008; Grant Thornton, 2010).

The care needs of residents were identified by Boyd et al. (2008) through the Older Persons' Ability Level Census (OPAL). Across all levels of care, 80% of residents had dependencies on other

people to meet their mobility needs, 70% had memory deficits, and 40% could not fluently communicate. In addition, 35% of residents disturbed or distressed other people. These percentages illustrate the complex needs of residents living in RAC facilities.

Further care needs have been identified through studies focused on the prevalence of mental health and behavioural issues amongst residents. Croucher (2008) noted the prevalence of anxiety, psychoses, and delirium amongst residents. Butler, Fonseka, Barclay, Sembhi, and Wells (1998) estimated the prevalence of both mental health morbidity and problem behaviours amongst residents in RAC facilities in Hamilton, New Zealand. This study showed a high level of psychiatric morbidity amongst a random sample of 87 residents living in 16 rest homes and 5 combined rest homes and hospitals. Residents were found to have high levels of mental health illnesses as 83% had a psychiatric diagnosis. Dementia was found in 70% of residents. Problem behaviours included residents who were perceived as socially objectionable (34%), verbally aggressive (25%), and actively aggressive (20%). Whilst this study of residents by Butler at al. (1998) was completed 17 years ago, in the context of the increased dependency levels demonstrated through the OPAL study (Boyd et al., 2008), it is likely that there has been an increase in these types of issues. Some may have been reduced through targeted medication prescriptions. A critique of the study by Butler et al. (1998) would also point out that problem behaviours may be a problem to others but may not be to the resident.

As well as the myriad of specific medical and mental health conditions that create the level of dependence of the resident, many experience frailty. Gerontology experts have not agreed on all aspects of a definition of frailty. However at a clinical level frailty refers to the presence of multi-system changes that decrease physical functioning (such as decreased nutrition, gait speed, and mobility), as well as mental health, and cognitive changes (Rodríguez-Mañas et al., 2013). These alterations result in a decreased ability of the elder to withstand stressors (Fulop et al., 2010) as they lack physical and/or psychosocial reserves (Heppenstall, Wilkinson, Hanger,

& Keeling, 2009). The frail elder is at risk of cognitive and physical decline when exposed to a small health challenge (Heppenstall et al., 2009).

Geriatric syndromes, which include frailty, refer to complex and non-discrete diseases that have cumulative effects and reduce the elder's ability to effectively respond to health and life challenges. Further syndromes include dementia, delirium, falls, incontinence, malnutrition, immobility (Won et al., 2013), dizziness and syncope (Inouye, Studenski, Tinetti, & Kuchel, 2007). Geriatric syndromes stem from ageing, having cognitive impairment, functional impairment, and impaired mobility, and they often contribute to morbidity and poor outcomes for the person (Inouye et al., 2007).

Many older people who live in residential aged care believe that a doctor has made the decision for them to enter the home (Jorgensen, Arksey, Parsons, Senior, & Thomas, 2009). However their caregiving relatives reflect that the family made the decision, especially if the caregiving member was experiencing stress (Jorgensen et al., 2009). The resident has the task of letting go their previous life including their roles in their family and society, settling and feeling they belong in the residential care facility, as well as establishing a new identity in this setting (Brownie, Horstmanshof, & Garbutt, 2014). Kiata-Holland (2010) theorised that elders in New Zealand rest homes participate in rest home daily life as observers or participants, and engage in the work of entering and sustaining relationships and activities that they consider to be "all in a day's work" (p. ii). The resident may experience a loss of autonomy (Welford, Murphy, Rodgers, & Frauenlob, 2012), a loss of usual daily rituals (Bern-Klug, 2011), and/or a loss of dignity or feelings of self-worth (Oosterveld-Vlug et al., 2013). The resident may experience a loss of autonomy through physical incapacities and loss of cognitive competence to make their own decisions (Welford et al., 2012). There are also factors in the environment that may limit choices, such as routines in the facility, meal times, and types of food available.

The New Zealand 2013 Census has shown that 79% of residents live in a RAC facility for less than five years, and 30% live there less than one year (Statistics New Zealand, 2015b). The mean length of stay in residential care for aged care residents in New Zealand in 2008 was two and a half years (Boyd et al., 2008). The median stay was just over one and a half years. Many residents will experience physical and cognitive decline over the time they are in RAC, and they may have to change their place of residence from rest home to hospital level care or to a dementia unit.

Nearly 40% of New Zealand elders over the age of 65 years die in residential care settings, and approximately 55% of these residents are over the age of 85 years (Broad, Gott, et al., 2013). Some elders in the United State of America have expressed a preference to die in a nursing home or hospital setting (Fried, van-Doorn, O'Leary, Tinetti, & Drickamer, 1999). Some reasons are practical, such as a lack of carer support, not wanting to burden family, or considering that available carers may not have the ability to provide the necessary care at home (Gott, Seymour, Bellamy, Clark, & Ahmedzai, 2004). For some elders the preference for hospital or rest home care stemmed from concerns about the extra care they may require for their chronic illnesses to be effectively managed at the end of life (Fried et al., 1999). Impaired homeostasis, malnutrition with low body mass index, an inability to perform activities of daily living (ADLs), frailty, chronic inflammation, cognitive impairment and multiple morbidities are likely to lead to death in elders over 65 years (Kane, Shamliyan, Talley, & Pacala, 2012). These conditions are ubiquitous amongst residents in residential aged care facilities.

The registered nurse

In 2012-2013 9.5% of all RNs in New Zealand were employed within the RAC setting (Nursing Council of New Zealand, 2014b). There were 4,259 RNs employed within rest home/residential care of whom 3,873 were women and 386 were men. These RNs are responsible for the care provided to residents in facilities with different combinations of levels of care, such as combinations of rest home, continuing care hospital, and specialist dementia care. Rest home

and dementia care residents are predominantly cared for by caregivers. Registered nurses are more consistently present in the continuing care hospitals where their presence is required for twenty-four hours per day. However they may provide RN cover to the other areas as well as the hospital (Labour/Green/Grey Power, 2010). Across this sector the average number of hours a resident received RN input per week ranged between 3.8 and 4.7 hours (Boyd et al., 2008; Grant Thornton, 2010). In rest homes the range was 2.3 to 2.9 hours per week; in hospitals it was 6.6 to 7.3 hours per week and in dementia care it was 3.4 to 4.7 hours per week (Boyd et al., 2008; Grant Thornton, 2010). While RNs are present Bland (2007) has stated that much of RNs' time in this sector was spent completing documentation that met legislative and contractual requirements, but did little to meet the individual needs of the resident.

The Health Practitioners Competence Assurance Act 2003 is the law that directs the Nursing Council of New Zealand (NCNZ) to govern the practice of nurses in order that the health and safety of the public of New Zealand is protected. The NCNZ has two key documents that direct RNs, the Competencies for Registered Nurses (Nursing Council of New Zealand, 2007) and the Code of Conduct (Nursing Council of New Zealand, 2012a). The specific competencies RNs must meet on an annual basis are encapsulated in the Competencies for Registered Nurses. The second document, the Code of Conduct for nurses, incorporates eight principles for conduct RNs are expected to meet. The Competencies and Code apply to all RNs, although particular aspects are dominant in specific health contexts. The NCNZ also provides guidance on the maintenance of professional boundaries between the RN and health consumer (Nursing Council of New Zealand, 2012c) thereby influencing decisions. Registered nurses also apply ethics to their decision making, based on a Code of Ethics (International Council of Nurses, 2012; Walker, 2009). Nursing ethics require the recipient's welfare and interest to be central to each decision (Walker, 2009).

Unforeseen circumstances - effects of a natural disaster on this research

This study has been completed over a six year time frame as the city in which the study was based experienced severe earthquakes. The RAC organisations were significantly impacted and the RNs had potentially less energy and enthusiasm to be involved in the project. The organisations, managers, and RNs who agreed to participate, did so at a difficult time.

Between September 4th 2010 and February 22nd 2011 Canterbury experienced two earthquakes with magnitudes 7.1 and 6.3 on the Richter scale. During 2011 the Canterbury region experienced 6550 aftershocks although many were too small to be felt (GeoNet: Canterbury Quake Live, 2015). The major 2010 earthquake caused damage to some buildings mainly in the central city. The second major earthquake in 2011 devastated the central city as well as several suburbs. Over 10,000 homes were destroyed or collapsed. One hundred and eighty-two people were killed and 6,659 people were injured within the first 24 hours of the second earthquake (Ardagh et al., 2012).

One of the RN participants of this study talked of the challenges posed during the first major earthquake (September 2010). The facility was short staffed. This RN participant recalled literally running around the hospital. Residents were clearly unsettled by the earthquakes and aftershocks. Many with dementia kept 'getting up' and all had varying levels of understanding. It was very difficult to manage residents and to keep them all safe.

Effects on the residential aged care sector

Evacuations

The effect on RAC was immense, with severe pressure resulting for residents, staff, and for organisations that owned and operated the homes. Nine aged care facilities were severely structurally damaged; seven were fully evacuated and two partially evacuated (Carswell, 2011). Some closed immediately as buildings were unsafe, with residents being evacuated to other rest

homes or hospitals or to other regions. The evacuations were co-ordinated by the local DHB's 'vulnerable person's group' (Goldstraw et al., 2012). Some evacuations occurred in the dark with ongoing aftershocks making the situation uncertain (Marriner, 2011), and some occurred the following day (Inch, 2011).

Over 600 residents were moved within and out of Christchurch to 125 other facilities (Carswell, 2011). Many were able to be re-accommodated in another facility within the same organisational group in another part of New Zealand (Mathewson, 2012). Family were not able to be consulted in all cases when an elder was evacuated from Christchurch causing considerable stress for everyone (Marriner, 2011). Some family members could not be contacted due to a lack of phone communication, or the Aged Care facility records recording non-current phone numbers (Mathewson, 2012). In some situations records were destroyed in the rubble or were not able to be retrieved (Mathewson, 2012). Some residents stayed away permanently, and others who wished to were repatriated back to Christchurch at a later time.

Longer term effects

In some areas residential care homes had no electricity, water, or sewerage (de Montalk, 2011) and communication systems were compromised for many weeks (Carswell, 2011). Some rest homes and hospitals were affected by liquefaction (Carswell, 2011) as soil became liquid rather than solid. Bottled water had to be provided to those with no tap water supply (Carswell, 2011). Many organisations had staff who were killed or injured, or affected by homelessness or damage to their homes. Staffing was difficult if nurses and care giving staff were personally affected or unable to travel to work. In total 600 beds were lost in this sector (Goldstraw et al., 2012).

There is a high level of stress resulting from natural disasters, and vulnerable populations are at particular risk. For elders forced to relocate in disaster situations, the increased stress response can exacerbate cardiac conditions and creates unstable blood sugar control, impacting negatively on morbidity and mortality (Sakauye et al., 2009). The subsequent loss of familiarity

of residence and staff can also increase vulnerability as well as the risk of cognitive decline (Sakauye et al., 2009). It is not known at a statistical level what the effects were on the morbidity of residents however an increased mortality rate was noted (Stylianou, 2011). Some residents survived the initial ordeal but did not survive once they moved location (Stylianou, 2011). It was also noted that there was a general increase in the residents' dependence and frailty (Carswell, 2012). In contrast other residents were noted to be 'very resilient' (Mathewson, 2012).

The impact of the earthquakes and the aftershocks was profound. The RAC sector learnt valuable lessons, including paying specific attention to emergency planning along with the availability of supplies and ensuring viable communication systems are available when there is no power and the communication networks are overloaded (Carswell, 2011). Individuals within RAC were also affected. Most people within a population that has experienced a disaster will have basic services and their sense of security affected, with fewer people developing mild psychological distress (Mooney et al., 2011). A smaller number of people will experience mild to moderate mental health disorders, and fewer again will experience severe psychological distress (Mooney et al., 2011). Adapting to new realities takes time, and individuals manage this process in different ways (Mooney et al., 2011). The impact on this research was that psychosocial recovery was required prior to the researcher re-engaging and potential participants engaging in the research process.

Research aims and questions

The aim of this research project is to provide insight into the clinical decisions that RNs in RAC in New Zealand make. Little is currently known about these clinical decisions in this sector and this project aims to denote this aspect of the work of the RN. The specific aim is to utilise a critical realist case study to describe the clinical decisions and to explain how and why RNs employed in RAC make their clinical decisions.

The two research questions are:

- What clinical decisions do RNs in RAC make?

- How and why are these clinical decisions made?

Research design

Critical realism provides the epistemological framework for the research and focuses attention on the ontological question of what constitutes reality. Critical realism is relatively new to nursing research and is therefore introduced in this section. Critical realism is different from critical social theory. Critical theory is an umbrella term that stems from the Frankfurt School and critical theorists critique the power structures present within society with the aim of creating change (Breda, 2013). Denzin and Lincoln (2011) place critical theory as one of four major paradigms alongside positivist, constructivist and post-structuralist paradigms. Kincheloe, McLaren, and Steinberg (2011) suggest that there are many critical theories that challenge positivist claims to universal truth through reliability and validity, replacing these claims with emancipatory research processes. Power relations, values, the use of language, privilege, and oppression are key concepts that are inherent within critical theorist positions (Kincheloe et al., 2011).

Critical realism differs from critical theory. Critical realism is also anti-positivist however critical realists accept that a reality exists and is empirically experienced (Denzin & Lincoln, 2011). Critical realists consider that knowledge is socially constructed, and the aim of scientific endeavours is to analyse causative mechanisms, processes, and the structures that generate the observable events (Denzin & Lincoln, 2011). The term 'critical' is therefore applied differently to 'critical theory'. Within critical realism the ontological perspective is that reality is a complex, layered, and open system in which events have multiple causes, labelled generative/causative mechanisms, which may or may not be activated to create these observable events (Bhaskar,

1989). The generative mechanisms are able to be identified (through retroduction[2]) from empirical experiences (Bhaskar, 1975). Critical realism is a separate paradigm to positivism and to interpretivism (inclusive of critical theory), and this is explained in chapter three.

The definition of case study used in this research context comprises the scope of the case and the features of the case study (Yin, 2014). The scope of this research refers to an intensive study of the phenomena of clinical decisions by RNs in RAC. 'The case' is the totality of clinical decision making by RNs in RAC in New Zealand and is not a single clinical decision or multiple clinical decisions about one type of resident health problem. The clinical decisions are situated within the real life context of clinical practice specific to RAC settings. The features of this case study accommodate the contextual nature of phenomena and context, and therefore multiple sources of evidence were gathered including the data from interview, participant observation, and also document analysis. These sources provide triangulation of data which strengthens the case presented in this study (Yin, 2014). Case study in this research does not refer to case study as a teaching tool whereby the case used for teaching purposes is representative of the situation.

Critical realism underpins the epistemology, ontology, and research methodology of this research project which poses that reality exists in layers. Reality can be experienced and also comprises the generative mechanisms that may or may not be expressed to cause the events that are experienced or observed to occur (or not). The case study methodology provides an in-depth study of the clinical decisions that RNs make in the setting of RAC.

The terminology that is relevant to this research is defined in the next section in order to provide clarity of meaning. There are different interpretations of the terms that surround clinical decision making. The specific use in this thesis of the term clinical decision making is discussed and it is also made distinct from diagnostic reasoning.

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[2] Retroduction refers to a process in which the mechanisms necessary to generate phenomenon are proposed through theoretically led analysis (Dobson, 2012)

Terminology

Several terms have been used in nursing literature to describe the fundamental aspect of nursing practice that involves the nurse processing information and taking action with an effect on patient[3] outcomes. The key terminology found in the literature includes the terms clinical decision making, clinical judgements, clinical reasoning, and diagnostic reasoning. These refer to core processes of thinking and acting within the RN role. Each term will be briefly discussed, followed by the definition of clinical decision making applied within this study.

Clinical decision and clinical judgement

Dowie (1993) contrasted a clinical decision with a clinical judgement, providing a very useful distinction stating that a decision ". . . involves *choosing* between alternatives whereas a judgement involves the *assessment* of alternatives." (p. 8). An example of a clinical judgement is that a patient's wound has improved implying that the particular dressing type is appropriate, whereas an example of a clinical decision is that a specific dressing is chosen. Whilst clinical judgements and decisions are able to be separated at a theoretical level, they are linked closely in clinical practice (Buckingham & Adams, 2000; Thompson & Dowding, 2002). Bakalis (2006) expanded this link by suggesting that nurses use judgement, deliberation, and choice when decision making. Decision making involves taking action (doing or not doing) (Dowie, 1993; Thompson & Dowding, 2009a).

Tiffen, Corbridge, and Slimmer (2014) have also provided a very broad definition of clinical decision making as "a contextual, continuous, and evolving process, where data are gathered, interpreted, and evaluated in order to select an evidence-based choice of action" (p. 401). They applied this definition to the nurse practitioner scope, and as these authors do not differentiate between a RN and nurse practitioner it is unclear whether their definition was applied to both

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[3] In this thesis the term 'patient' will be used to refer to recipients of nursing care, including those in an acute care context, whilst 'client' will be used to specifically refer to a community context where people live in their own home.

nursing scopes. In New Zealand nurse practitioners includes diagnostic reasoning as a part of their skill set within their scope of practice and, as required by NCNZ, in competency 2.1 must demonstrate advanced diagnostic decision making skills including clinical decision making relevant to a specified area of practice (Nursing Council of New Zealand, 2012b). In this study the participants interviewed and observed were RNs and not nurse practitioners. The RN scope of practice in New Zealand does not include diagnostic reasoning but does include clinical decision making for an integrated plan of care that provides appropriate interventions for care (Nursing Council of New Zealand, 2007).

Clinical reasoning

Tanner (2006) defined clinical reasoning as very complex referring to "the processes by which nurses and other clinicians make their judgements, and includes both the deliberate process of generating alternatives, weighing them against the evidence and choosing the most appropriate" (p. 204-205). Reasoning is underpinned by knowledge of pathophysiology, diagnosis, clinical presentations, disease, the experience of illness for the patient and family, as well as physical, social, and emotional resources, and coping abilities (Tanner, 2006). Noll, Key, and Jensen (2001) defined clinical reasoning as ". . . the application of knowledge and clinical experience towards a clinical presentation to derive a solution." (p. 41).

Simmons (2010) applied a concept analysis to the term clinical reasoning and added that patient data are analysed, the significance of this data is evaluated, and the alternative actions are also evaluated. More simply, Simmons, Lanuza, Fonteyn, Hicks, and Holm (2003) defined clinical reasoning as information processing in the health care setting, and identified that clinical reasoning informs clinical decisions. The focus is therefore on a specific health issue. Clinical reasoning also informs differential diagnosis in which the signs and symptoms presented by the patient are considered by a RN in an advanced role during the process of distinguishing between possible diseases (Baid, 2006).

Diagnostic reasoning

Pirret (2013) defined diagnostic reasoning as a process in which data are collected, an illness or disease is identified along with the associated abnormal findings, and an action plan of interventions, prescriptions, and referrals is formulated. Diagnostic thinking is therefore focused on the diagnosis and management of the medical problem. Pirret (2013) researched the diagnostic reasoning of nurse practitioners in New Zealand, clearly articulating their abilities to apply diagnostic reasoning effectively. As identified above diagnostic reasoning is within the scope of the nurse practitioner in New Zealand (Nursing Council of New Zealand, 2012b). It is considered to be an extremely important component of safe and effective care for patients (Lucchiari & Pravettoni, 2011).

Definition of clinical decision making applicable to this study

A comprehensive definition of clinical decision making has been provided by Standing (2007) as ". . . a complex process involving information processing, critical thinking, evaluating evidence, applying relevant knowledge, problem-solving skills, reflection, and clinical judgement to select the best course of action which optimizes a patient's health and minimizes any potential harm." (p. 266). Standing's definition is a useful one as it addresses a complex range of knowledge and skills that are noted to be required for effective clinical decision making.

For the purposes of this thesis clinical judgement (assessing alternatives) and clinical reasoning (solution focused application of nursing knowledge and skill to a patients' health issue) are considered to inform the choice that the RN takes in his or her clinical decision making. They are considered integrated as clinical decision making occurs with integration of judgement and reasoning processes.

Thesis structure

This thesis is structured using nine chapters which will follow a logical progression to describe the study and the research design. The underpinning philosophy of critical realism is explored to

provide the context for the way in which the ontological and epistemological basis for the research is intertwined. The research approach of case study is also explored followed by the benefits of integrating critical realism with case study to utilise a critical realist case study. The research design will be followed by a discussion of the research findings in which three main generative mechanisms are explained.

Chapter one has provided an introduction and the background for the research. The RAC setting in New Zealand has been described and discussed along with a depiction of the residents and the workers who care for them. The predicted increase in demand for the level of care provided through these facilities has been acknowledged. The research aims have been provided as well as an introduction to critical realist case study design and relevant terminology has been defined.

Chapter two provides the context in which the reader may situate this research. The literature reviewed comprises decision making theories which influence research on clinical decision making. Current literature is reviewed including the processes used by RNs when making clinical decisions, how decisions are made, and how they should be made. Literature is also reviewed that is related to the clinical decisions that RNs in the RAC sector make.

Chapter three details the methodology which provides the framework for this research. Critical realism is relatively new to nursing and has developed as a research approach from philosophical origins. Critical realism provides direction for the structure of the research as the aim is to identify the mechanisms which generate the clinical decisions that RNs make. These mechanisms lie beneath empirical experiences and comprise one layer of reality. Critical realism is introduced and the manner in which it has been implemented is discussed.

Chapter four introduces case study and provides detail and argument supporting the use of case study. The chapter then discusses a critical realist case study approach, synergies between critical realism and case study and current applications of this approach.

Chapter five describes the research design of this study and the methods that have been implemented during the study. There are several data sources which are described, as are the ethical considerations applied to the participants, RAC facilities and the residents. The triangulation of data and interpretation of data are discussed.

Chapter six addresses the first of the research questions, 'what clinical decisions do RNs in RAC make?', and answers this question by discussing these clinical decisions. The RNs' clinical decisions apply from the time the resident enters the facility to the time they die and includes daily life as well as acute and ongoing health events that occur.

Chapter seven reports further findings of the study focusing on the second research question, 'how and why are these clinical decisions made?', by explaining generative mechanisms that generate the clinical decisions. Chapter seven explains the first two of three generative mechanisms, the relationships that are crucial to generating clinical decisions, and also specific factors within the context of the RAC setting that influence the clinical decisions. The relationships between the RNs and the resident, the family, and the GP are discussed and explained. Contextual aspects of RAC are also explained as they impact on the clinical decisions.

Chapter eight explains the third of the three generative mechanisms, the specialist nature of gerontological nursing within the RAC setting. The specific knowledge and skills that are required for effective clinical decisions, the ethico-legal and professional aspects of nursing in this sector, and the moral agency of the RN all impact on the generation of the clinical decisions. This chapter will also explain the interactions of the three generative mechanisms as they actualise, block or redirect the clinical decisions.

Chapter nine offers a discussion of the findings, an explanation of the significance of the clinical decisions made by RNs in RAC and recommendations for nursing practice. This chapter also provides the limitations of the study and recommends further research.

Summary of chapter one

This first chapter has introduced the thesis. It has explained the background and the rationale for the study which focuses on the clinical decisions that RNs in RAC make. Residential care facilities have been presented as varying in their characteristics, meaning that RNs employed in this sector work in a range of clinical settings with the core component of caring for frail, complex, and highly dependent residents. The RNs are supported in this sector by GPs who include medical care of residents as a component of their medical practice. The introduction to the RAC setting has provided the context for this research.

This chapter has also stated the research aims and the two research questions that are answered in this thesis. In order to provide an overview of the methodology that is relatively new to nursing, the underpinning philosophy of critical realism and the research design has been described. The methodology of a critical realist case study has been the template for the research process.

The researcher's interest in clinical decision making stemmed initially from exploring evidence-based practice and the use of evidence in this sector. This exploration shifted to an interest in the main use of evidence, which is the clinical decisions that RNs make. In the RAC context little is known about the clinical decisions RNs make, what they are or how they are made.

CHAPTER TWO

Literature review: A process with a purpose

Introduction

This chapter offers a review of literature focused on the concept of clinical decision making, which is central to this research project. This review of literature provides a literary context in which to situate and understand the research project by presenting an overview and analysis of current clinical decision making knowledge. The review will also be useful in subsequent chapters to assist in interpretation of the significance of the analysis and findings. This review also identifies boundaries to the literature utilised.

Structure of literature review chapter

There are four sections of the literature review chapter. The first section describes the process utilised to focus and obtain the literature. The initial review process was broad, and this literature was then refined to identify the literature used in this review.

The second section of the literature review provides discussion and critique of literature about judgement and decision making from outside nursing. This literature has informed, and continues to inform, nursing research and is useful to contextualise nursing research. This knowledge has provided parameters for nursing questions and a framework for the development of nursing knowledge.

The third section focuses on clinical decision-making relevant to nursing practice. Clinical decision-making has been an area of active and broad investigation within nursing for over 40 years. This literature review focuses predominantly on the past 20 years to enable a more contemporary review, rather than an historical analysis, and to provide the context of more current knowledge. Nursing practice has continuously evolved. The literature relevant to current

nursing practice has captured the increase in advanced practice roles and increased accountability of the registered nurse.

The fourth section analyses literature pertinent to clinical decision making in gerontological nursing. This section contributes insights into some contextual and environmental factors specific to gerontology which are embedded in RNs' clinical decision making. This section is of particular significance to this research project due to this specific context for nursing practice.

Section one: Process utilised to obtain literature

A broad range of nursing literature was initially analysed when the topic was originally being formulated in order to gauge the importance of the topic and knowledge at that time. A more thorough literature search was then conducted in order to inform the development of the research design. An initial analysis indicated that a high level of attention has been paid to clinical decision making although little has been directly informative of clinical decision making of RNs in RAC in New Zealand.

The initial and broad key words were directly related to the topic: clinical decision making; clinical decision/s; clinical judgement/s. Search terms were "word in subject heading", "full text", "English language" and "academic journals". The search mode used was Boolean /phrase. Inclusion dates were January 1995 to November 2014, although literature prior to these dates was also accessed via reference lists if they appeared significant.

The data bases were accessed via 'Discover' which provides an integrated search of article databases, journals, Ebooks, library catalogue, and Massey Research Online. The EBSCO Health databases included in this search strategy were Academic Search Premier, CINAHL Plus, Pre-CINAHL, Health Source, Nursing/Academic Edition, and Health Business Fulltext Elite. Index New Zealand, Scopus, and Medline were searched separately. A catalogue search was also conducted and relevant textbooks were included in the literature review. These texts included 'decision making', 'judgement and decision making', 'clinical decision making', and 'clinical judgements'.

The texts edited by Thompson and Dowding (2002, 2009d) are of particular importance as these texts provide a synthesis of historically bound knowledge of clinical decision making within nursing and they have also provided direction for future consideration.

A further search of 'judgement and decision making' and 'judgement and decision making theory' was conducted in order to understand the background to nursing knowledge. Searches were carried out via the data bases, however there was limited information that informed this study beyond signifying key topics of interest to other disciplines. Library catalogues of books provided a rich source of authors who have been influential in this area, such as Hammond (1996, 2000, 2007), Klein (1998) and Reason (1990, 2008).

The collection of literature has continued to occur over a five year non-consecutive time frame due to the protracted nature of this research process. Literature has been collected whilst the research project has progressed, through the follow up of references from other literature, or when relevant articles have been listed in electronically delivered journal indexes through e-subscription. Other resources have been obtained in a serendipitous manner.

Section two: Decision making theory

Introduction

Decision making research has informed theory development about human reasoning/rationality. Research into how humans make judgements and decisions has developed in a systematic way during the twentieth century (Hammond, 2007). Decision making has been studied for over five decades in many disciplines including organisational and behavioural sciences, and in particular psychology. These research endeavours have led to a significant body of knowledge that informs many disciplines where decision making matters. Progress has been made in key areas related to how humans think, process information, and make judgements and decisions. Further development beyond theorising has involved field work with humans employed in situations

where their judgements and decisions play a major role in outcomes which affect lives. Key roles such as fire fighters, army personnel, and nurses have been studied in order to understand how decisions have been made in real life contexts (Klein, 1998). The main aims have been: to understand the cognitive processes used in judgement and decision making; to identify criteria by which judgments and decisions may be evaluated; to understand how to prevent errors in decisions; and to understand how to improve the decisions thereby improving patient outcomes.

Firstly, important frameworks conceptualised by three influential writers within decision-making and judgement theory will be discussed. The key concepts raised by these authors provide a useful and informative background to the topics of interest and the research questions within nursing about clinical decision making and judgement. The aim of this discussion is to provide the context for nursing research and to provide suitable frameworks within which to interpret the findings of this study.

Cognitive continuum theory

The first conceptual framework, the cognitive continuum, has been provided by Hammond (1996, 2000) who has written extensively about human judgement and decision-making. In his earlier writings he focused on rationality and the use of reason to counteract uncertainty. Rationality as a concept became divergent in meaning and whilst the origins referred to the scrutiny of one's choices, actions, values, goals, and priorities in a reasoned way, Hammond considers that more than rationality is required for future decision making regarding human activity (Hammond, 2007).

Hammond (2007) has discussed the ways in which the dominant models of cognitive thinking evolved from 'analytic thought' to 'intuition' in order to understand cognitive processes used in decision making and judgments. He further developed the conceptualisation of cognitive processes by posing a cognitive continuum, rather than a dichotomy of thinking processes (Hammond, 1996). The cognitive continuum depicts human cognition to comprise mental

activities that range between pure intuition at one end and pure analysis at the other, with quasi-rationality lying in-between (Hammond, 1996). Hammond (2010) has subsequently proposed that the reliance on intuition at one end of the continuum is replaced by quasi-rationality which is in the middle area of the continuum, as he considers that intuition is inexpressible, rapid, and not justifiable. This suggestion reduces the range of the continuum. The cognitive continuum is an important conceptualisation that has influenced research within nursing as it has provided a conceptual tool with which to analyse the mental processes nurses use to make judgements and decisions, in particular whether analytic thinking or intuition dominate nurses' cognitive processes. Nursing has continued to include intuition as a cognitive process, thereby studying the range of processes depicted on the cognitive continuum.

General theory of three continua

Hammond further developed his theory to refer to the cognitive continuum, described above, as the first of three continua. The second continuum is the 'task continuum' which ranges from analytic inducing tasks, through common sense inducing tasks, to intuition inducing tasks (Hammond, 1996, 2007). The tasks themselves are considered to contribute to the cognitive processes that are used. An example of the application of Hammond's task and cognitive continua in nursing is a study by Dowding, Spilsbury, Thompson, Brownlow, and Pattenden (2009) who explored the decision making of RNs specialising in the nursing management of patients with heart failure. Their study considered the match between the decision tasks the RNs faced and the cognitive processes that the RNs used. The key tasks focused on the pharmacological management of each patient's heart failure and the management of patients when they were in a palliative phase of heart failure. The authors concluded that cognitive decision strategies used by the RNs did not support the decisions they needed to make and that either altering the nature of the task or the strategy could provide an improved match.

The third continuum is the surface-depth continuum which ranges from surface data (data that is close and available to the person making the judgement), to remote or deep data (which is remote in time or place from the person making the judgement) (Hammond, 2007). Hammond proposed that these three continua influence the judgements and decisions made. The conceptualisations of these three continua are very useful for nursing as they focus research on the ways nurses think, the tasks relevant to the decisions that nurses make, and also the types of data that are available for nurses when they make their decisions. Hammond (2007) proposed that the use of a rational approach to address the uncertainties for which judgement and decisions are required should be superseded 'beyond rationality' to the pursuit of competent judgement and decisions through 'wisdom'. This suggestion has not influenced nursing research, although nursing's pursuit of excellence may be an unidentified application of the search for wisdom. Nursing has considered expertise and should perhaps instead focus on the search for wisdom in nurses' clinical decisions.

Hammond's three continuum theories are particularly informative for nursing as they provide conceptual tools with which to theorise about the clinical decisions of RNs.

Recognition primed decision making

Klein (1998) considers that one focus of decision making research has been on the limitations of the decision maker along with the proposed remedies to ensure competent and rational decisions, rather than on the strengths and capabilities of the decision maker who uses experience despite information that is missing, time constraints, changing conditions, and vague goals. Klein considers that two of the main strengths of the decision maker are the use of intuition through pattern matching and the use of mental simulation. He also considers the decision maker's use of rational analysis, ability to see the invisible or read minds, use of analogies, and storytelling are sources of strength for the decision maker.

Klein (1998) describes 'recognition primed' to be the most frequently used strategy that people use to make a decision. In a recognition primed decision the decision maker knows what to do and acts. If the situation is familiar, a decision is likely to succeed if the expectations, cues, goals, and actions are evident, and if the decision maker forms a mental simulation which may modify their actions. The decision maker should know the events expected to occur next with their usual responses, the important cues to attend to, and the goals should make sense. If the situation is not typical, more time should be spent gathering information. If the expectations are not met then a reassessment should occur.

Klein (1998) also describes the lesser used strategy for decision-making as an analytic rational choice in which comparative evaluation occurs as options are compared along with their strengths and weaknesses. This strategy of analytic rationality was used in about 20% of decisions. This strategy is useful if the decision maker lacks expertise, considers a wide range of options and weighs up benefits and risks.

Novices and experts

Klein (1998) also studied novices and experts and identified key features that experts use. These features include many aspects of understanding and interpreting the situation. In particular is the ability to recognise patterns that are present and to be aware of the details in the 'big picture'. Also evident to experts is the identification of absences or anomalies of what 'should' be present. Experts also have a mental representation of what the event 'should' be like and can mentally simulate how events may evolve. They mindfully gather information, using past experiences, and notice small differences. Experts also self-critique in the moment and are able to think about their thinking. Klein (1998) also discusses the role of intuition and claims that "intuition grows out of experience" (p. 33) but it is not infallible.

Theorising error and recovery

Reason (1990, 2008) takes a focus on human error and the role of humans in making, avoiding, or recovering from errors. He considers that errors provide insights into human thinking and actions (Reason, 1990). Reason (2008) considers that errors are common and are a part of being human, and he considers that recovery from errors may be remarkable in many situations. There are features that promote errors and it is useful to understand what they are in order to avoid or recover from them. Errors may occur through the action or inaction of an individual within the situation. Many errors that occur have no particular consequences, and may not be noticed. Conversely, they may also lead to substantial consequences through initiating a chain of actions or inactions which lead to an untoward outcome. Three main types of errors include: a memory lapse which occurs when a familiar task does not follow the usual sequence due to a lapse in attention; a rule based mistake in which a useful rule is misapplied or not applied or a poor rule is applied; or a knowledge based mistake if knowledge gaps are present in new situations generating an error that is not identified as such. As professionals have a duty of care, Reason states they must take particular notice of potential hazards and act to avoid them, paying attention to all details.

The avoidance of errors is particularly evident in the practice of experts, such as nurses' practice as described by Benner (1984), whereby patterns are recognised 'intuitively' and disaster avoided.

Section three: Relevance to nursing practice

This third section of the literature review chapter appraises clinical decision making literature relevant to nursing practice. A substantial body of nursing knowledge has been gained over the past fifty-five years. Yet there is much more to be learnt (Lamb & Sevdalis, 2011; Thompson, Aitken, Doran, & Dowding, 2013) and particularly so in the pursuit of effective outcomes for patients (Fitzpatrick & Smith, 2013). Nurses in clinical practice make nursing judgements and

decisions at every patient encounter. Nurses must make sense of the patient's health problems or concerns. They must decide on courses of action which have the potential to affect outcomes for patients. While patterns of presentations, assessments, and interventions occur variations between individual patients are also present. Much is indeterminate due to unique patient situations and responses. Variation also occurs between individual nurses who make different judgements and decisions, given the same information about the patient (Thompson & Adderley, 2015). While clinical decisions are regularly made they are often not scrutinised unless an error occurs.

The decision making theories described in the previous section, section two, are all relevant for nursing practice. Hammond's (1996, 2000) general decision making theory has relevance, in particular the cognitive continuum and task continuum. These two concepts have been applied in order to generate knowledge matching the decision tasks of nurses with their modes of thinking (Thompson, McCaughan, Cullum, Sheldon, & Raynor, 2005). The surface-depth continuum has not been applied specifically, however research has included a focus on the uncertainty surrounding data that are available to nurses when they make their decisions (Thompson & Dowding, 2009a).

Also relevant for nursing, Klein (1998) has observed that 'recognition primed' and 'analytic-rational choice' strategies are used by nurses and he also notes the usefulness of mental simulations created by the decision maker. Although not specific to nursing, Reason (2008) highlighted the important area of avoidance of decision errors, which is particularly evident in experts' practice. His focus on how humans make, avoid, and recover from errors is useful. These concepts and conceptualisations are all relevant to nursing practice.

The concept of expertise developing through repetition so that experts develop intuitive knowledge has been applied within nursing, although there is no agreement about the place of intuition in RNs' clinical decision making. Cioffi (1998) studied decision making by less and more

experienced nurses when triaging patients in an emergency department. She identified different decisions about the patient's triage level based on the RN's level of experience. The less experienced nurses collected more data when making their decision and the more experienced nurses made more inferences and judgements when making their decisions. In contrast, in a post-operative context Hoffman, Aitken, and Duffield (2009) identified that novice nurses collected a narrower range of cues than expert nurses who also clustered the cues more effectively when making their decisions. The expert nurses also gathered more information in a proactive way, anticipating the data they might need.

Features of experts' decision making have been studied and intuition depicted. Benner and Tanner (1987) studied the key aspects of experts' decisions and presented examples of nurses' intuitive judgements. The key features comprised recognition of patterns and similarities, applying common sense understandings of the situation along with skilled know-how, a sense of salience, and an intentional rationality.

Within nursing a range of topics have been considered and they will be discussed below.

Complexity of cognitive tasks in nursing

Early research findings by Hammond, Kelly, Schneider, and Vancini (1966) from nearly fifty years ago identified that the cognitive tasks facing nurses in their practice were many and varied. These authors reported that individual nurses responded to a specified patient situation (abdominal pain) with multiple actions (up to 17 actions) being taken, some similar, but with varying combinations. The complexity of cognitive tasks resulted from the high number of cues about the patient's condition, the high number of responses available, and the relationship between the cues and actions whereby a single cue did not generate a particular action. Utilising a quantitative approach they identified a mathematical model which could enable analysis of the ways in which nurses sought information about the patient's condition in order to make their decisions.

Ongoing research over the past fifty years, using a variety of techniques, has produced research with variable findings. 'Thinking aloud' techniques have been consistently used as a method to gain access to nurses' thinking about decision making, such as in research by Twycross and Powls (2006) and MacNeela et al. (2010). This technique involves nurses verbalising their thinking as they make judgements and decisions about a patient though a case study or a simulation. There are limitations to the researcher's ability to generalise from a simulated situation for the participant RNS to the complexities of real life situations (Aitken, 2003; Funkesson, Anbäcken, & Ek, 2007; Greenwood, 1998). The 'think aloud' technique has therefore been applied directly in the clinical practice setting. Despite the application of talk aloud processes being applied in clinical practice it has also been recognised that it can be difficult for the nurse to verbalise all of his or her reasoning processes while in clinical practice (Banning, 2008). Some authors have therefore used combined methods to obtain data such as combinations of think aloud and observation (Aitken, Marshall, Elliott, & McKinley, 2011) and think aloud and protocol analysis (Lundgrén-Laine & Salanterä, 2010).

Decision tasks: What clinical decisions are made by RNs?

Hammond's (1996) general theory includes a 'task continuum' with a range from analytic inducing, quasi-rational and intuition inducing tasks. These tasks are thought to contribute to the cognitive processes the person uses to generate the decision. There is an ongoing need for research which produces information about the decision tasks nurses face, especially those with elements of uncertainty, as research based knowledge could be utilised to support clinical decisions in clinical practice (Randell, Mitchell, Thompson, McCaughan, & Dowding, 2009).

The quest to identify the decision tasks has commenced, however as clinical practice contexts evolve over time the decision tasks are likely to change, including those related to increased acuity of patients and autonomous roles of nurses (Lasater, 2011). They may also vary according to specific clinical settings and alter over time. Some decision tasks have been identified in acute

care settings (Thompson et al., 2002) and also community settings (Thompson, Cullum, McCaughan, Sheldon, & Raynor, 2004).

Descriptions of the decisions nurses make in acute care contexts include the choice of: interventions; how to target each intervention to specific patients; best timing for an intervention; delivery and receipt of information with patients as well as their families and colleagues; and service delivery (Thompson et al., 2002). Nurses also interpret cues in order to understand the ways patients may experience situations and make decisions in the context of this understanding (Thompson et al., 2002). In acute contexts (emergency departments and emergency situations in acute contexts) the foci of nursing judgements and clinical decisions have also been articulated as the identification of changes in a patient's condition (often using the nurses' past experiences and pattern recognition) and identification of situations in which the patient was considered to be 'at risk' (Cioffi, 2000). Therefore in an acute environment the identification, management, and treatment of patients' problems are major components of RNs' practice.

Thompson, Cullum, McCaughan, Sheldon, and Raynor (2004) present a typology of clinical decisions made by acute and primary health care RNs. This typology includes their selection of intervention, communication style, organisation of workplace processes, assessments and relevant tools, diagnosis using the signs and symptoms present, amount of information required to make a decision and also what style of approach to utilise for individual patients. These authors consider the articulation of the types of decisions RNs make will enable congruence of the knowledge required to make the clinical decision with the actions that should occur (Thompson et al., 2004).

Factors that affect nurses' clinical decisions

Internal factors that influence the RNs' clinical decisions have been studied and findings show them to be situational and difficult to generalise. Tanner (2006) considers that what the nurse

brings to the judgements and decisions are particularly important in influencing the clinical decisions made. Clinical decisions are considered to be influenced by the individual nurse's: philosophy and attitudes (Tanner, 2006); value of their role, level of appointment and area of clinical specialty (Hoffman et al., 2009); level of knowledge (Bakalis, 2006); level of experience (Bakalis, 2006; Cioffi, 2001; Currey, Browne, & Botti, 2006; O'Neill, Dluhy, & Chin, 2005; Thompson et al., 2001b); familiarity with the situation and decision (O'leary & Mhaolrúnaigh, 2012); and their knowledge of the patient (Hedberg & Larsson, 2003; Tanner, 2006).

Factors external to the nurse that influence clinical decisions are: the patient's situation, such as complexity and stability (Bucknall, 2003); reliable informational inputs (O'Neill et al., 2005); culture of the unit (Tanner, 2006); available resources, such as technological and medical backup (Bucknall, 2003); expertise of others such as clinical nurse specialists (O'Neill et al., 2005; O'leary & Mhaolrúnaigh, 2012; Offredy, Kendall, & Goodman, 2008; Thompson et al., 2004; Thompson et al., 2001a); and interpersonal relationships, such as support from experienced staff (Bucknall, 2003; Offredy et al., 2008).

Models of clinical decision making have been theorised. A model by O'Neill, Dluhy, and Chin (2005) of factors that influence clinical decisions represents clinical decision making as multi-faceted. The nurse has nursing knowledge, and obtains patient data to manage nursing care. The nurse monitors for changes in the patient's condition, and has awareness of the risks that can be anticipated and knowledge of how to reduce these risks. If changes occur the nurse initiates actions to address the changes, in the context of knowing the patient's normal situation. The nurse generates hypotheses and decides on action. This model incorporates the notion of observing for risks and the importance of the nurse having relevant knowledge to manage any changes in patient status, and is a useful depiction of clinical decision making.

Tanner (2006) proposed a model of clinical judgement useful for rapidly altering situations, which contains aspects of noticing and grasping the context, interpreting the situation,

responding by acting or not acting, and reflecting by paying attention to the patient's response while concurrently acting. This model depicts experienced nurses' clinical judgements and decision making processes. It is based on the nurse having practice knowledge as well as implementing nursing's ethical values. This is a valuable model as it provides a conceptual overview of factors that affect the nurses' decision making.

Another conceptual model has been developed by Wolf (2013) to integrate factors that influence accuracy of clinical decisions in high acuity and high uncertainty emergency departments. This model depicts a central core that comprises the nurse's knowledge base, plus the ability to recognise and integrate the key cues present as well as the resources required, plus the commitment to pursue data collection and to act in the patient's best interest which stems from moral agency[4]. Surrounding the central core is a middle ring which illustrates the roles and relationships of the nurse and other health providers as well as the culture of the unit and an outer ring which encompasses the institutional environment. This conceptualisation integrates several of the factors thought to influence clinical decision making in a specific health context and enables consideration of factors that may support improved clinical decision making by nurses.

The environmental contexts of nursing practice have also been considered to influence clinical decision making processes (Thompson et al., 2005). In order to improve decision-making transparency, and the sharing of decisions with the client, Carr (2004) proposed a framework useful for understanding clinical reasoning by nurses working in client's own homes. This framework consists of aspects of nursing specific to this context and signals areas that differ to the acute health care context. The four aspects are: naming the actual health need (why the registered nurse is there); framing the need as it is negotiated and includes discussion of the

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[4] Wolf (2013) defines moral agency as "the deliberate and persistent search for information to determine the presence or absence of critical cues even in the face of environmental challenge, action for the good of the patient in light of the problem" (p. 50).

role of the RN; identifying the health needs and negotiation between RN, client and their carer of agreed needs; and using negotiation strategies in the context of the person's own home which mean that RNs do not over rule but 'work with' the client and their caregiver.

Further theorising of specific nursing settings has also conceptualised community situations. The dyadic RN and client relationship is extended to a triad in the community setting. In these settings the nurse must interact with the client and the client's family. In this setting Dalton (2003) studied how RNs work within the triad of nurse, client and relative/caregiver in decision-making situations in the person's own home. She extended a previous theory (Kim, 1983) to one which incorporated these three parties who each influence the nature of the relationship. Dalton tested the revised theory in the clinical setting and found nurses use many processes prior to visiting the client at home, were involved in making many decisions, and that different collaborations between the three members did occur in different configurations. Subsequent research by Dalton (2005) highlighted that coalitions between two of the three members i.e., the nurse, client, and caregiver, influenced the decisions that were made, and recommended that the concept 'power' be included in future research.

How nurses make decisions (descriptive theory)

Nurses make clinical decisions using several reasoning processes. The combined use of these reasoning processes will be discussed first. This will be followed by separate discussions of the hypothetical or analytic mode, intuitive mode, and use of pattern recognition. Heuristics as a mode of thinking will also be discussed.

Use of information processing modes

The main descriptive theories of clinical judgement and decision making lie within information processing theory and include hypothetico-deductive (analytical) reasoning, intuition, and pattern recognition and matching (Dowding, 2009). Information processing theory is based on the notion that when processing information humans are often not fully rational and so have a

'bounded rationality' due to limitations in their selection of facts and the values attached to choices (Thompson & Dowding, 2009b). Making a rational decision has been considered ideal and is compromised by limitations to human attention, memory, comprehension, and communication (Thompson & Dowding, 2009b).

Information processing theory encompasses both Hammond's (1996) concept of a cognitive continuum and Klein's (1998) 'recognition primed' and 'analytic-rational choice' strategies for making decisions. The mental simulations that Klein depicts are also congruent and modify the decision maker's thinking, choices and actions. Klein describes 'analytic rational choice' to be a lesser used strategy for decision-making. An analytic-rational approach is useful if the decision maker lacks expertise, considers a range of possible options, and analyses benefits and risks (Klein, 1998). Reason (2008) highlighted the important area of the avoidance of decision errors. He considers that the avoidance of errors is particularly evident in experts' practice, whereby a disastrous outcome is avoided. As well as avoiding errors, Reason's focus on recovery from error is a useful consideration. The three main types of errors he describes are memory lapses, rule-based mistakes, or knowledge-based mistakes (Reason, 2008). They are all relevant to nursing practice.

The application of the cognitive continuum in nursing has been promoted by Thompson (1999), Harbison (1991, 2001), and Cader, Campbell, and Watson (2005). Cognitive processes can be theorised as a continuum encompassing modes of reasoning along a continuum rather than being diametrically opposed. There is evidence that nurses use all reasoning strategies when making decisions, especially if they are experienced nurses (Cader et al., 2005; Cioffi, 1997; Manias, Aitken, & Dunning, 2004; Offredy et al., 2008; Tanner, 2006). Each strategy is considered separately although it is recognised that nurses vary their judgement and decision making strategies according to their level of experience and to the task. Research findings related to levels of experience are not consistent. Dowding (2009) claimed that nurses with less experience

were more likely to use hypothetico-deductive reasoning while nurses with more experience were more likely to use intuition. In contrast Thompson and Yang (2009) concluded from their studies that the reasoning processes of both expert and non-expert nurses did not significantly differ and that experience, supervision and training were more relevant.

Nurses use reasoning strategies singly or in combination (Tanner, 2006). Lauri and Salanterä (2002) applied the cognitive continuum as they formulated a decision making instrument which they tested using an international data set of 1,460 nurses from Finland, Canada, Northern Ireland, Norway, Sweden, Switzerland, and USA. These nurses worked in health settings of public health care, intensive care, psychiatric care, and short and long term care. They concluded that nurses make similar but variable clinical decisions within and between these practice areas. Lauri and Salanterä identified the importance of the structure of the country's health care system and of nurses' tasks on their modes of thinking. They found that 60% of all nurses used analytic-intuitive and intuitive-analytic modes of thinking, 14% used analytic, and 26% used intuitive modes. It is not stated what level of nursing experience the participants had. Lauri and Salanterä utilised the quasi-rational or mid-range of the cognitive continuum in their analysis as they combined the two poles, analytic and intuitive reasoning, to form analytic intuitive and intuitive analytic decision making to indicate whether analysis or intuition dominated.

The cognitive continuum therefore enables recognition of the diverse reasoning strategies applied by individuals when making clinical decisions. While Buckingham and Adams (2000) have refuted divisions between modes of reasoning as artificial, claiming that it is difficult to classify the reasoning processes into intuitive or analytic processes, current research indicates that there are several modes of reasoning that may be used in isolation or combination, and which alter as nurses develop experience and expertise (Thompson et al., 2013).

The decision tasks are also influential in the reasoning strategy used. Thompson et al. (2004) noted that the complexity of the decision task, ambiguity of the task, and time frame available

for the clinical decision influenced the type of decision making process used. In decisions that involved a high number of pieces of information and where times frames were short, the nurse's intuitive thinking process is more likely to be induced. Analytic inducing decisions included those that have familiarity, information pieces that are easily managed at a cognitive level and require discrete pieces of information. While predictive, the decision task does not entirely direct the cognitive processes the nurse will use, but it does have congruence with the information sources the nurse uses.

The characteristics of the task also lead, though not exclusively, to a particular reasoning mode being employed. Successful judgement and decision making involved the person adapting their mode of thinking to the decision task (Thompson et al., 2013). Hammond's (1996) cognitive continuum and task inducing theories proposed that congruity between the decision task and the decision making mode of thinking promotes the ideal clinical judgement and decision. For decision tasks that are poorly structured, have many information cues, and little time, the intuitive mode is appropriate (Lamond & Thompson, 2000). If a decision task promotes an intuitive mode of thinking, based on experience, a decision tool such as a guideline or protocol is less likely to be used in the decision making process, but if the task induces an analytic mode of thinking a protocol, guideline or decision tool is more likely to be used (Randell et al., 2009). A focus on the development of guidelines for analytic inducing tasks would therefore be beneficial to support nurses in their decision making. An example is provided by Dowding, Spilsbury, Thompson, Brownlow and Pattenden (2009) where the titration of medications for a patient by heart failure specialist nurses required an analytic mode of thinking, supporting the development of new protocols and guidelines. If the decision tasks promote quasi-rational modes of thinking (analysis and intuition mixed) then Lamond and Thompson (2000) suggested that system aided judgements are promoted, such as from decision support systems.

Use of hypothetico-deductive mode

Hypothetico-deductive modes of reasoning utilised by nurses have been influential in nursing research. The four components of this reasoning mode are the acquisition of cues, generation of a hypothesis, interpretation of cues, and evaluation of the hypothesis (Thompson & Dowding, 2009b). A novice has less knowledge and experience than an expert who will have a greater range of possible hypotheses based on their experience (Pearson, 2013).

The hypothetico-deductive mode describes how clinicians make their judgements and decisions by processing information in a systematic and logical way (Pearson, 2013). Hypothetico-deductive thinking employs both inductive and deductive thinking processes (Buckingham & Adams, 2000). Induction refers to data being collected that is used to generate a hypothesis, and deduction refers to a hypothesis the clinician uses that leads him or her to search for the relevant cues to see if they are present or absent, thereby confirming or denying the hypothesis (Buckingham & Adams, 2000).

Manias, Aitken, and Dunning (2004) illustrated the dominance of analytic modes amongst graduate nurses in their first year of practice when making decisions about medication management. They identified that the graduate nurses used routine and consistent ways in their management of patients' care. They made physical assessments of patients and some analysed laboratory data and combined this information in a problem solving way when making decisions about medication administration, nonetheless, there were also examples whereby the nurse did not connect the information available for an effective patient outcome.

Twycross and Powls (2006) demonstrated that paediatric nurses use analytical decision making (hypothetico-deductive) modes irrespective of their numbers of years working in the paediatric area. Similarly, Evans (2003) found that RNs working in an emergency department used this approach when completing an initial assessment of the patient and when identifying appropriate treatments. In this situation the nurses gathered relevant information (subjective

history and objective observations) and developed initial hypotheses including potential causes to explain the presenting findings. They then interpreted the cues by identifying the relevant supporting and refuting observations and cues, and finally deciding which hypothesis was the best fit with the presenting data. Similarly Randell, Mitchell, Thompson, McCaughan, and Dowding (2009) analysed nursing decision tasks and identified that many practice nurses in primary health care made routine decisions associated with analysis, and that they had internalised several guidelines and protocols into their knowledge and practice.

Dangers inherent in the use of the hypothetico-deductive model include focusing on one particular hypothesis and missing other relevant cues (Buckingham & Adams, 2000) and the human tendency to confirm the hypothesis is correct rather than incorrect (D. Evans, 2003). Analytic modes of thinking are considered most appropriate when objective and structured information is available, the nurse has sufficient time to process the information and for less complex situations (Dowding, Spilsbury, et al., 2009).

Use of intuition

There is some agreement that intuition is a real phenomenon in nursing although there is no agreement about the definition or role of intuition in registered nurses' decision making. Thompson and Dowding (2009b) highlighted that intuition was both a type of knowledge and also a mode of thinking. Key attributes of a person using intuition as a mode of thinking include knowing without prior reasoning, knowing in an entirety, knowing in a rapid way without a progression of reasoning, and knowing in a composite rather than reductionist way (Robert, Tilley, & Peterson, 2014). Nurses develop intuition based on past experiences for complex clinical situations where decision making occurs (Cioffi, 1997).

Benner's (1984) influential writings about the development from a novice to an expert nurse based on the movement from analytic modes of thinking to intuitive modes of thinking have resonated with many nurses. On the other hand the findings from Benner's (1984) study on RN

expertise have been challenged as being too simplistic alongside the suggestions that the focus on pattern matching did not allow sufficiently for analytic modes of thinking (Gobet & Chassy, 2008). Gobet and Chassy (2008) claimed a combination of both rapid perception and also slower analytic problem solving was evident in literature about decision making by experts. They did agree that identifying a good quality solution was a feature of expertise however they added that experts might also not always be correct. Gobet and Chassy (2008) proposed a model, the Template Theory (TempT), in which intuition is linked with analytic problem solving in decision-making amongst experts as a way of explaining intuition within expertise.

Intuition is proposed as an individual attribute as what may be intuitive to one nurse is not to another (Cioffi, 1997). As previously discussed, Lauri and Salanterä (2002) identified in an international study across a range of practice areas that 26% of registered nurses used intuitive modes of thinking and 60% used a combination of analytic and intuitive modes. In contrast Manias et al. (2004) illustrated the minimal instances of the use of intuition amongst graduate nurses in their first year of practice when making decisions about medication management. Randell et al. (2009) identified that district nurses used intuition when making clinical judgements and decisions about wound care. They also found that health visitors used intuition when completing assessments of health and social needs. They noted there were many visual cues available in both situations, with cues from the actual wounds and also cues of child development through direct observations of the child (Randell et al., 2009). Similarly Offredy, Kendall, and Goodman (2008) established that RNs who prescribed medications used intuitive modes of cognition when prescribing medication for patients.

Klein (1998) identified that intuition develops from experience. He considered key features that experts use in their judgements and decisions include the ability to recognise the patterns that are present and to be aware of all details amongst the whole scenario including the absence of

what 'should' be present. They also have a mental representation of what the event 'should' be like and can self-critique in the moment.

In nursing, the attributes of expert RN practice have been identified by Hardy, Titchen, Manley, and McCormack (2006). These attributes are reflective of those identified by Klein (1998) however they use practice terms for nursing that reflect nursing expertise. Hardy et al. (2006) concluded that there are five aspects of RN expertise including skilled know how, salience, knowing the patient, the moral agency of the RN, and holistic practice knowledge. They incorporated several practice settings in the UK in their study and claim that the aspects identified constitute and enable expert level practice.

There are several problems associated with applying intuition as a mode of thinking. The underpinning values and beliefs of the clinical judgement and decision are not evident to others and the process is largely invisible (Thompson & Dowding, 2009b). Also intuition does not enable reflection on actions in order to promote learning, and is difficult to analyse if the decision proves to be incorrect (Thompson & Dowding, 2009b). Conversely, intuition can provide accurate and fast responses to avert disaster (Benner, 1984) and is considered an important aspect of clinical judgement and decision making.

Use of pattern recognition

Pattern recognition is considered central to expertise and occurs when the patient's signs and symptoms are compared to those stored in the clinician's memory thereby enabling the clinician to choose the best pattern or match (O'Neill et al., 2005). Pattern recognition may occur in situations where a few essential pieces of patient's data are available which enable the nurse to recognise this pattern as similar to a previously seen pattern (Offredy, 1998). Pattern matching is a component of intuition and of experts' practice based on their previous experiences (Benner & Tanner, 1987). Pattern recognition has been shown to be present in the clinical decision making of experienced nurses with between two and ten years clinical experience who had not

achieved an expert level of practice (Simmons et al., 2003). Pattern matching may be utilised for complex or straight forward patient situations (C. Evans, 2005) and while some patterns may be noticed by graduate nurses they continue to require time to develop and expand the patterns they observe in actual clinical practice (O'Neill et al., 2005). Pattern recognition is also considered a form of quick mental shortcut or heuristic (Simmons et al., 2003).

Use of heuristics

Heuristics or cognitive shortcuts that nurses use in their decisions making have also been under scrutiny. These shortcuts are used in everyday nursing practice (Thompson, 2003) including uncertain situations when analytic thinking is not employed (Cioffi, 1997). Heuristics are also useful when large amounts of information are available and time is short such as in triage situations (Gerdtz & Bucknall, 1999). They are considered to be a useful way of simplifying clinical judgements. Thompson (2003) discussed their usefulness and the need for heuristics in nurses' decision making, though he also described causes of systematic biases that lead to poor clinical decisions.

Thompson and Dowding (2009c) subsequently described key problems with the use of heuristics to be the inclusion of bias and errors into the clinical decision. They discussed several forms of bias including overconfidence, in which the person overestimates how correct they are in their decision, and hindsight in which knowledge that a specific outcome is possible leads the decision maker to have a higher expectation of this outcome. An example of potential error is by Dougherty, Sque, and Crouch (2012) who posed in their observational study that the use of heuristics may have contributed to errors in intravenous medication administration due to a lack of identification of the patient prior to the medication administration. They posed that this was due to the RNs using a mental shortcut by considering that they knew the patient and bypassing the need to check their patient's identification. They also reported the routinized behaviour that stemmed from this skill which contributed to the use of heuristics.

Despite the problems associated with heuristics they are generally considered to be very useful in decision making. Their use often leads to an acceptable outcome resulting from large amounts of information being processed by human minds that do have limitations. Heuristics are used in information processing to inform clinical decisions.

In addition to the information processing modes discussed above it is also interesting to note that Tanner (2006) identified the use of a narrative reasoning pattern whereby the story surrounding the patient's situation underpins the decisions made.

How nurses should make decisions (normative theory)

Identifying what constitutes a quality judgement and decision is a complex and complicated task (Dowding & Thompson, 2003). Nursing has not yet identified what a quality judgement and quality decision comprise, nor how to judge 'good' quality judgement and decision making (Long, Young, & Shields, 2007). Both the outcome and the process of making a judgement and decision can be reviewed in order to attempt to categorise them as good or not good. This is not without difficulty. To aid the process Dowding and Thompson (2003) distinguished between evaluating a judgement and evaluating a decision as they pointed out that a correct judgement may lead to an incorrect decision, and an incorrect judgement could lead to a correct decision.

Research aimed at the evaluation of clinical judgements in nursing situations has included a review of the outcome of the judgement, comparing it to subsequent findings, or comparing the judgement against those of a panel of experts (Dowding & Thompson, 2003). Research evaluating nurses' clinical decisions has focused on the outcomes of the decisions in comparison to the decisions of peers or experts (Dowding & Thompson, 2003). There are inherent difficulties in both aspects of decision making. One difficulty is that many decisions involve weighing up several possible outcomes of the decision, and trading one off against another (Thompson & Dowding, 2009b). A useful example provided by Thompson and Dowding (2009b) is a judgement and decision that involves the quality of life or the quantity of life. Judgements are needed in

order to decide how to identify a 'good' quality judgement as values and preferences are highly individual.

Gillespie (2010) has created a framework to analyse novice nurses' decision making (as well as student nurses). This framework includes both the thinking processes and the process of making the decision. The analysis includes a review of whether the novice has included many aspects in his or her decision making, and the effectiveness of the decision is related to whether effective assessment processes were used and sufficient cues were collected. It does not address the issue of what a quality decision would resemble.

Decision aids may be utilised. Two methods promoted by Dowding and Thompson (2009b) include the use of clinical decision rules (such as a formula to diagnose meningitis) or application of Bayes theorem (a mathematical formula to identify how likely a particular individual is to have a particular diagnosis). Harbison (2001) described Bayesian logic to be utilised by the decision maker to assist with accurately assessing the probability of an event, based on the evidence being logically interpreted. An example of Bayes theorem has been provided by Long, Young, and Shields (2007) whereby a statistical model illustrates how the nurse revises his or her thinking when new information becomes available. The probability of changing a decision in the light of new information is not always high.

Dowding and Thompson (2009a) also discussed the use of decision trees, whereby a simplified version of an actual clinical decision process shows the choices that may be made along with the important risks, benefits and uncertainty for each option. Wu, Chao Yu, Yang, and Che (2005) developed a decision tree useful to assist nurses to understand how women make a decision, as well as for nurses to apply to assist women, when the woman makes a decision about a hysterectomy. They concluded that this was a useful tool. Nonetheless Greenhalgh (2006) considered that in medical practice many individuals do not 'fit' yes or no decision points on the decision trees, thereby limiting their effectiveness.

Similar to decision trees are algorithms which may assist the decision maker by highlighting decision points. At each point the relevant data must be analysed in order to progress to make a decision about the likely diagnosis, relevant diagnostic tests and treatment. An example is the development of an algorithm for nurses managing wounds with chronic exudate, to support their selection of wound dressing product (G. Smith & Gibson, 2013). This algorithm has been developed but requires testing in clinical practice (G. Smith & Gibson, 2013). Another example is an algorithm designed to assist in the management of residents in residential care settings to avoid administering antipsychotic medications unnecessarily (M. Smith et al., 2013).

Computerised models have also been proposed to assist nurses to make clinical decisions and some models provide tools to evaluate a judgement against. A nurse computer decision support system (N-Codes) was developed by O'Neill, Dluhy, Fortier, and Michel (2004), although these authors acknowledged that it is difficult to integrate the full range of nursing knowledge into a typology. This support system has been considered to be useful for novice registered nurses. Dowding, Mitchell, Randell, Foster, Lattimer and Thompson (2009) conducted a case study over four sites and observed nurses using a different computerised decision support system to document information, monitor progress and confirm decisions that had previously been made. The nurses' level of experience contributed to whether they utilised the recommendations or over-rode them. These authors concluded that some unexpected uses could lead to an increase in errors and variations amongst nurses. In a broader research study Mitchell et al. (2009) identified the computerised decision support systems that were available to registered nurses working in the National Health Service in England. Many systems were electronic patient record systems, along with online policies and guidelines, triage systems, assessments, prescribing, and test ordering systems. The findings showed that there were limited systems that actually supported an improved outcome for patients and that many were introduced without evidence to warrant their use thereby making their effectiveness unknown.

In the general rather than professional context of decision research, Brown (2006) discusses the usefulness of prescriptive decision analysis as a rational choice tool aiding sound decision making. He states that there are six essential requirements that must be met if the decision aid is to be useful and that all criteria must be met. The criteria are that they must: respond to the decision makers actual worries; utilise the knowledge the decision maker has; accurately portray reality; request contributions that are realistic for others to provide; provide outcomes the decision maker is able to apply; and be contextually appropriate (Brown, 2006). The relevance of these requirements to professional decision making is not known, although in total they would be extremely difficult to apply due to the complex nature of both patient's and health professional's individuality and the particular individuality of each health context. In the nursing context Benner and Tanner (1987) described the usefulness of algorithms, decision trees, and computerised programmes to apply to situations with a limited number of options available for a structured problem, rather than for situations when a whole situation approach is needed. These approaches may be applicable to simple decisions but not to complex decisions, yet they do contribute to some reflection on the difficulties of making decision aiding tools useful for all situations.

Arslanian-Engoren and Scott (2014) have provided evidence of self-critique amongst RNs and a lack of satisfaction about some decisions they have made. Critical care nurses in USA were asked via a questionnaire about decision regret. They articulated their regret about some decisions that they considered did not meet professional standards, some that failed to ensure safety of patients, and some that meant they did not advocate for patients. They also regretted a failure to communicate professionally, as well as experiencing limited cognitive ability to prioritise care and problem solve effectively, especially when tired. There was a higher incidence of these 'failures' amongst nurses who worked night shifts.

Section four: Relevance to the care of elders

Acute and community settings

The majority of research on the clinical decisions by RNs related to the older person has taken place in the acute care hospital setting and community settings. An example of research in the acute sector is that by Milton-Wildey and O'Brien (2010) who investigated the decision making by RNs in Australia regarding the nursing care provided to elders in the acute care setting. Twenty-seven nurses participated and gave interviews, were observed when in clinical practice and patient records were also reviewed. These nurses articulated the specific communication, relationship needs, physical and psychological needs of elders, as well as the need to be vigilant due to their vulnerability. Disappointingly, their actions did not always reflect their stated knowledge and professional value of caring, as many elders were left alone for long periods of time with no contact or assessment of their needs, and some nursing interventsions were not implemented in a timely way (pressure ulcer prevention). Nurses also chose to socialise with each other rather than complete care tasks. This is an important research finding as it may reflect a lack of attraction to caring for elders and in part explain why some registered nurses are not attracted to RAC. However it is not directly transferable to residential care as the RNs working in RAC have chosen to work there whilst the RNs working in acute care have not chosen a gerontology specific setting.

Findings from research in community settings may also not be transferable to the residential care context. For example, Dalton (2005) studied the coalition between elders who were receiving care, their family caregiver, and their visiting nurse when clinical decisions were being made in the client's own home. The relationship dynamics may differ in the residential care home, particularly due to increased levels of resident's dependence. Therefore components of a home based triadic relationship may not be applicable in RAC.

Residential aged care

There is a dearth of literature about RNs' clinical decision making in RAC, especially in New Zealand. Much of the clinical decision making literature specific to RAC relates to the clinical decisions made by medical personnel despite RNs having a greater presence in these facilities (Lopez, 2009).

Many topics significant to RNs clinical decisions in RAC have limited context specific literature. For example Herman, Johnson, Ritchie, and Parmelee (2009) conducted a structured literature review of the management of pain in rest home facilities and concluded that whilst pain is an ongoing issue for residents there are few quality studies to assist in the management of pain. This review is not specific to nurses but is highly relevant and illustrates the lack of sound evidence on which RNs can make their decisions as well as the need for specific research to be conducted in RAC.

Studies relevant to nurses' clinical decision making practices are limited and include the transfer of residents from rest homes to acute care, the prevention of pressure ulcers, and the use of physical restraints.

Transfer to acute hospital

The clinical decision to transfer a resident to an acute care environment has been studied due to concerns about the economic appropriateness of the transfer and the location of care considered best for the resident. In a systematic review of qualitative literature Arendts, Quine, and Howard (2013) reviewed eleven articles and identified two key themes leading to transfer. One theme identified by staff (including nurses), relatives, and the residents was the maximisation of wellbeing for the resident. This theme is supported by research conducted by Jablonski, Utz, Steeves, and Gray (2007) who focused on the registered nurse, family, resident, and physician or physician assistant, as decision makers in USA. The main motive to transfer was to ensure the wellbeing of the resident and the nurse was noted to play a key role acting as the

mediator between parties. The nurses made their decisions considering the ability to safely manage the medical condition of the resident in the rest home. Further support for the themes of promoting resident wellbeing was from a study by Buchanan et al. (2006). Nursing directors were interviewed and patient focused factors were found to be more important than economic considerations in the decision to transfer.

The second theme involved transfer when the resident was not expected to have an improved outcome (Arendts et al., 2013). In this situation external factors influenced the decisions, such as a lack of confidence in the resources available or the care able to be provided in the rest home, or the threat of litigation. Acute illnesses or symptoms influenced the decision to transfer, with increased transfer if either an altered level of consciousness, chest tightness or pressure, shortness of breath, or reduced oxygen saturations was present (Ashcraft & Owen, 2014). An Australian study by Shanley et al. (2011) of managers who were registered nurses showed similar findings. The decision to transfer residents with acute illness such as injuries from falls or uncontrolled bleeding was straightforward. The availability of medical and registered nurse support, family influence, and also fear of litigation were the other factors that influenced decisions to transfer.

Prevention of pressure ulcers

Research related to clinical decisions regarding the prevention of pressure ulcers specific to RAC is limited and the findings illustrate a lack of use of assessment tools (Fossum, Alexander, Göransson, Ehnfors, & Ehrenberg, 2011) and that 'knowing the person' enables the nurse to use complex reasoning processes rather that routine thinking (Funkesson et al., 2007).

Relevant to the aged care setting, but not specific to it, Searle and McInerney (2008) studied clinical decisions regarding the prevention of pressure ulcers in the final 48 hours of patients' lives. Their results illustrated that nurses balance the management of pressure care with the promotion of comfort cares. Further research, such as that by Balzer et al. (2014), provides

useful but not context specific results. Balzer et al. (2014) identified that nurses use several patient characteristics when making their assessment decisions about the risk of pressure ulcers, in particular the exposure to pressure, and overall dependency of the patient. This research was conducted in trauma units where many patients had fractures and therefore has limited application to RAC where many residents are exposed to pressure through reduced mobility (Boyd et al., 2008) and all have high levels of dependency (Statistics New Zealand, 2013b).

Samuriwo and Dowding (2014) have provided a useful, but not RAC specific, systematic review of clinical decision making related to pressure ulcers. The literature is across health care settings, including acute, palliative, and community care settings, as well as three studies based in rest home or long term care settings. Their findings indicate that ongoing research on the assessment of pressure ulcer risk or the grading of pressure ulcers is less likely to improve patient outcomes than focusing future research on the delivery of quality care and the management of pressure ulcers. In New Zealand RAC there is a requirement that a risk assessment of pressure ulcer is completed as part of the suite of risk assessments and therefore their recommendations regarding further research are useful. Research would need to be located within RAC to support clinical decision making in this setting as the specific needs of residents would need to be considered.

Use of physical restraints

Many studies have been completed about the use of physical restraint in all health care settings. There has been no clear evidence about their usefulness in preventing harm, in particular from falls, and promoting safety, which have been the main reasons cited for their use (Hamers, Gulpers, & Strik, 2004; Hantikainen & Käppeli, 2000). New Zealand standards have been set by the Ministry of Health (2008b) about the use of physical restraint. The aim is the minimisation of restraint and promotion of safe practice.

The academic literature surrounding nurses' decision making has taken both descriptive and normative theoretical approaches to the decision making by RNs. The descriptive approach includes identifying factors that influence nurses' decisions to restrain clients in gerontological settings. Möhler and Meyer (2014) have summarised the complexities in decision making in their systematic review and synthesis of qualitative evidence from thirty-one publications. They describe the nurses' focus to be the promotion of safety and prevention of falls, and that nurses accept physical restraint as a component of their work although they generally hold negative attitudes towards applying restraint. The nurses managed the moral conflict they experienced as a result of the discrepancies between beliefs and actions through focusing on the benefit to the resident, using the least restrictive form of restraint, and by sharing the responsibility and their feelings with others.

Lane and Harrington (2011) also reviewed literature about factors that influence the use of physical restraint by nurses, including literature from acute care settings. They summarised two key reasons for use. The first, in agreement with Möhler and Meyer's (2014) findings, was the safety of patients. The second was the management of staff workload. Eleven of the 18 articles reviewed predated the turn of the century (pre 2000) and as attitudes and law towards the rights of consumers have altered, it may be that these findings are not contemporary.

A normative theoretical approach to clinical decision making was taken by Shanahan (2011) who examined available evidence about how to make safe decisions on the use of bedrails as a form of physical restraint. Her analysis combined ethical theory (including principles of autonomy, beneficence, non-maleficence, dignity, and justice) with current evidence to promote suggestions about how nurses should make decisions.

Limitations of many research projects indicate that findings are not able to be generalised, as the study has been conducted in a specific category of rest homes (such as the non-profit sector), or participants have included selected or all staff in the home rather than registered nurses only.

Also significant is the different way each country has constructed the system by which it cares for elders, and so the social and economic contexts differ creating a range of factors that influence care. Further context specific research is warranted.

Gap in the literature

There is no literature that explains the RNs' clinical decisions in the New Zealand RAC context. International literature stems predominantly from the acute care and community contexts or a cross sector approach has been taken which limits the application to clinical decisions about frail elders in New Zealand's RAC sector. The international literature conducted in RAC has focused on clinical decisions by the RNs about specific interventions, such as factors relevant to transferring a resident to the acute sector. The current literature has not explained the range of clinical decisions by RNs through the identification of the generative mechanisms that enable or constrain these clinical decisions. The critical realist case study approach utilised in this thesis adds a distinctive theoretical framework through which the RNs' clinical decisions are explored and explained through the identification of the generative mechanisms.

Summary of chapter two

The first section of this chapter described the process utilised to obtain literature for this literature review. This process illustrates the refinement that was undertaken, from a broad approach to a narrower focus, to ensure a comprehensive review. The iterative nature of the literature review process has been explained.

The second section of the literature review includes the literature from general decision making theory as it is informative for nursing literature and provides the theoretical background for clinical decision making by nurses. The theories and conceptualisations of processes people use to make decisions provide concepts of a cognitive continuum, task continuum, and surface - depth continuum, as well as novice to expert processes. The search for 'wisdom' has also been posed as a potentially productive concept. Environmental factors that influence decisions and

errors are also highlighted. Theories to evaluate decisions and judgements, in order to identify whether a 'good' decision or judgement has been reached have also impacted on nursing literature, though to a lesser extent.

The third section focuses on literature relevant to nurses' clinical decisions. It provides the literary context for the research questions answered in this thesis, that is, what are the clinical decisions RNs in RAC make and how and why are they made? Literature on the processes nurses use to make decisions has identified that nurses use different modes of thinking including hypothetico-deductive analytic, quasi-rational and intuitive processes, depending on the context and decision task. A wide range of decision tasks is present which may alter over time and between contexts of nursing. It is recognised that the matching of the decision task with the mode of thinking has a better decision outcome, and that the development of processes to support nurses' decision making need to reflect the specific tasks. The nurses' level of expertise influences the ways in which the decisions are made. The recognition of patterns that commences with beginning nursing practice and develops as the nurse develops expertise has also been discussed. Decision aids have also been reviewed as they have been shown to improve the outcomes of some nurses' decisions. They include heuristics, decision rules, Bayes theory, decision trees, and computerised decision support systems. Nursing models have been developed to depict clinical judgements and decision making and each contributes an understanding of the factors that influence the decisions.

The fourth section has referred to literature related to clinical decisions by RNs caring for elders. Most of this literature refers to acute health care settings or to community based care. There is little that is context specific to RAC and in particular to the New Zealand context. The literature reviewed has provided a comprehensive understanding of RNs' clinical decisions but not about the causative factors of these clinical decisions in RAC in New Zealand.

CHAPTER THREE

Theoretical underpinnings: The reality of critical realism

Introduction

Chapter three explains the philosophical and theoretical framework of critical realism, which underpins this research. The research paradigm guiding the individual researcher has impact as the researcher makes choices in relation to epistemological[5], ontological[6] and methodological aspects of their study (Denzin & Lincoln, 2011). It is important therefore to articulate the underlying beliefs that have informed the research process and influenced the decisions the researcher has made. The underlying epistemological and ontological base through which reality may be explored directs the research design and in this research critical realism provides this foundation.

An introduction to critical realism will provide an overview of the development of this approach to the social sciences during the 1970s and the subsequent divergent views of proponents will be acknowledged. The epistemological positioning of critical realism, 'in-between' positivism and interpretivism will be presented first. Then the ontological perspective of critical realism is explored, as reality is described to comprise stratified layers that include the empirical experiences of humans as well as underlying social structures that are not directly observable. These structures or mechanisms create the conditions that generate particular phenomena. The core components of critical realism will then be presented followed by the implementation as a framework for research. Health research projects that have utilised this approach will then be

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[5] Epistemology refers to the theory of knowledge (Landesman, 1997) which provides an approach to understand and explain what we can know (Crotty, 1998). Epistemology identifies what kinds of knowledge are possible, adequate and legitimate (Willig, 2013)

[6] Ontology refers to the way in which the researcher understands the nature of reality (Alexander, Thomas, Cronin, Fielding & Moran-Ellis, 2008)

discussed and finally examples of critical realism within nursing will be presented. Case study, and critical realist informed case study, as the methodology of this research will be presented in chapter four.

Introduction to critical realism

Development of critical realism

When Roy Bhaskar was initially formulating the origins to critical realism in the mid 1970s in the United Kingdom, he was developing a new philosophy (Sayer, 2000). His developed philosophy posed an alternative way to consider the world from the dominant scientific paradigms of empiricism/positivism/objectivism, and of interpretivism/constructionism (Sayer, 2000). Positivism and interpretivism are useful ways of theorising epistemology as each contributes a different definition of what constitutes 'knowledge' and 'truth'. Each epistemological perspective provides principles which guide the accepted understandings of knowledge within each paradigm (Bryman, 2012).

The ontological position of objectivism is aligned with empiricism/positivism and the ontology of constructionism is aligned with interpretivism. Ontology refers to the composition of reality and in particular whether reality is external to humans or whether reality is developed through the individual's perceptions and constructions of phenomena (Bryman, 2012). Positivism has an underlying premise that 'things' have an objective truth and meaning outside human consciousness and experience (Bryman, 2012) and meaning and truth may be revealed by research processes. The application of a positivist approach within empiricism seeks to identify the causes of events with the aim of prediction through the generalisation of findings to whole populations (Alexander, Thomas, Cronin, Fielding, & Moran-Ellis, 2008). Positivist research within the social world is based on the premise that individuals are aware of this world, that it is accessible to observation, and is able to be studied using value free research methods (Tolich & Davidson, 2011). The epistemology of interpretivism differs and has the premise that truth

and meaning exist through the individual's conscious interactions with realities in the world (Crotty, 1998). Meaning does not exist outside the mind. Constructionist ontology considers that reality and the world are 'constructed' in social ways and therefore can be considered an interpretation of what the researcher and participant observes (Alexander et al., 2008).

In his early writings Bhaskar (1975) argued against positivism. He posed a transcendental realist philosophy in which reality is sought through the identification of the "structures" (p. 25) and "mechanisms" (p. 25) that generate phenomena but are beyond an empirical reality. He subsequently proposed a 'new critical naturalist' philosophy, based on transcendental realism in which his stance was anti-positivist and partly anti-interpretivist (Bhaskar, 1979). He argued that social and natural phenomena should be studied in different scientific ways as they hold differing features (Bhaskar, 1979). He aimed to divert human sciences away from the goals of prediction found within positivism to deep explanation found within realism (Bhaskar, 1989). Bhaskar (1989) had named his "general philosophy of science 'transcendental realism'" (p. 190) and his "special philosophy of the human sciences 'critical naturalism.'" (p. 190). Others combined the two and applied the term 'critical realism'. Bhaskar (1989) agreed there were good reasons for this amalgamation and that the term was warranted.

Critical realism as promoted by Bhaskar (1989) poses the world as structured and changing, and that it is the structures of social relations that realism is concerned with, as ways of understanding social events and social patterns. Bhaskar focused the social sciences on the identification of unobservable social structures that create the events that are observable in the social world. In particular he focused attention on the social structures existing in society that are dependent on social relations between individuals, groups of people and the more abstract social entities (such as capital and labour).

An inherent contradiction within critical realism has been critiqued by philosophers. Stokes (2011) claims the critical realist position lies somewhere between the realist and relativist.

Stokes describes the realist position to be one in which the factors and situations that affect individuals and society are present in the world, whether humans have knowledge of them or not. They exist externally to the individual and are present in reality. Conversely the relativist position refers to individual interpretations and a relative subjectivity (Stokes, 2011). Knowledge of the real is therefore mediated thorough individual conceptualisations and is thereby fallible (Iosifides, 2011).

Danermark, Ekström, Jakobsen, and Karlsson (2002) also specify the congruence of critical realism with an epistemology of relativism, where knowledge of reality is subject to change. Fay (1990) critiques the coherence between a relativist epistemology and realist ontology as problematic, as a realist perspective would accept that knowledge depicts the actual causal mechanisms that are at work, whilst a relativist stance would not accept the existence of a pre-determined reality. However, Fay (1990) poses the solution to lie in the understanding that there is a structure to the world that a complete scientific endeavour would reveal. As humans are limited in their ways of understanding reality, they can aspire to depict the world without attaining this aspiration (Fay, 1990). Any understanding of the world will not be complete but will be partial, as a 'true' grasp of reality is not feasible (Jones-Devitt & Smith, 2007).

Ongoing development of critical realism

Whilst Bhaskar created the cornerstone for critical realism, others were also active in its development. Some authors disagreed with Bhaskar's later works, such as Dean, Joseph, Roberts, and Wight (2006) who rejected his later work but defended critical realism. They were concerned that Bhaskar had included a spiritual dimension in his conceptualisation of reality which displaced critical realism. They and other critical realists therefore focused on Bhaskar's writings before the year 2000. This thesis is based on Bhaskar's earlier work, prior to 2000, as well as drawing on other critical realist writings to inform the theoretical approach taken.

Bhaskar's earlier writings are considered to be illustrative of "modern critical realism" (Losch, 2009, p. 95). However, there are many forms of critical realism within the social sciences and it is not a homogenous enterprise (Danermark et al., 2002; Losch, 2009). Despite tensions and variances there are aspects that are considered to be key features of critical realism. They have been developed from Bhaskar's earlier works by other social theorists, such as Archer (1998), Collier (1989), Cruickshank (2003), Danermark et al. (2002), Dean et al. (2006), and Sayer (2000).

Core components of critical realism

The focal point is ontology, what we understand to be 'real'. Archer (1998) names three core components of ontology as the intransitive, stratified reality and generative mechanisms.

Intransitive structures

Bhaskar (1975) posed two dimensions of knowledge to refer to the intransitive and transitive dimensions. The intransitive dimension refers to entities that are studied to generate knowledge in terms of "structures, processes and mechanisms" (p. 77) that are external to people and exist in reality (Joseph, 1998). The researcher therefore aims to reveal the mechanisms and structures that are not directly experienced but that generate the events that may be experienced. The transitive dimension refers to evolving theories as current knowledge informs future knowledge (Joseph, 1998). "Science, although it studies the intransitive, produces a transitive object." (Joseph, 1998, p. 77).

Stratified reality

Second, reality is considered to be stratified with three layers. This aspect of critical realism encourages researchers to consider reality as deep, complex and layered (Lipscomb, 2008). Bhaskar (1975) depicts the three layers of reality to comprise 'the empirical', 'the actual' and 'the real'. 'The empirical' domain is where humans experience events through their senses. 'The actual' domain consists of events and behaviours and so is the domain of observed events or

observed patterns of events. 'The real' domain is where generative mechanisms reside which are independent of events but are capable of producing patterns of events.

The three layers, described by Bhaskar (1975), may be depicted in the following figure, Figure 1.

The empirical	• Domain of experienced events • What indivduals experience • eg RNs' experiences and perceptions of clinical decisions
The actual	• Domain of events and behaviours • eg the RNs' clinical decisions
The real	• Underlying structures, mechanisms and relationships, capable of generating events • eg the generative mechanisms that have the potential to generate the RNs' clinical decisions

Figure 1. Layers of reality

Generative mechanisms

Third, reality is considered to comprise mechanisms that encompass powers to generate phenomena under certain conditions. McEvoy and Richards (2003) describe generative mechanisms to refer to "structures, powers and relations that explain how things work beneath a surface (observable) appearance" (p. 412). They therefore reside within intransitive structures. Generative mechanisms are considered to be real and seen in their effects rather than directly through empirical experience (Blom & Morén, 2011). The critical realist considers that both the observable and unobservable comprise reality (O'Mahoney & Vincent, 2014). Certain generative mechanisms (structures, powers or relations) may be triggered by particular situations. Their effects can be "blocked, disrupted or redirected" (p. 42) by other structures or mechanisms (Lipscomb, 2008).

An example of generative mechanisms is provided in the research study by Sword, Clark, Hegadoren, Brooks, and Kingston (2012) which aimed to identify the main factors contributing to postpartum depression in mothers who had previously experienced depression. Personal and contextual factors were identified as the generative mechanisms that influenced the development of postpartum depression. Personal factors included fatigue, pain and physical recovery from labour and delivery, as well as individual mother's self-expectations and thought processes. Contextual factors included their social supports, level of isolation and the temperament of their baby. Each of these generative mechanisms could influence the others. For example a mother could experience a combination of factors from moving to a new country with few social supports (contextual factors) combined with personal discomfort from a caesarean section wound site (personal factors).and this combination could contribute to the formation of depression. These generative mechanisms lie beneath the actual experiences of postpartum depression in women and are causative of the empirical experiences.

Social structures

The concept 'social structures' will be briefly discussed in order to define the meaning as it is applied in this research. 'Social structures' are core to critical realism. Porpora (1998) provides a useful discussion and separates a critical realist perspective from other conceptualisations that occur within sociology. The critical realist perspective conceptualises social structures as "systems of human relationships among social positions" (Porpora, 1998, p. 343) The purpose of science within a critical realist perspective is to explain the complex world composed of interacting entities in terms of the generative mechanisms including their internal structures. The internal structures of social relationships between the individuals, groups or entities within the situation may form a generative mechanism. The relationships and connections between the people, groups and entities have an effect on the individuals, and the relationships and connections are also affected by these people. The system of relationships creates inherent interests, resources, powers, constraints and predicaments amongst the individuals, groups and

entities. It is through the explanation of the generative mechanisms that the relationships are exposed.

Enablements and constraints

Archer (2003) describes 'enablements' and 'constraints' within a critical realist perspective of structure and agency, and in particular how society influences individuals. She describes 'enablements' and 'constraints' to be influences on the individual with the potential to impact on that individual's actions. Constraints and enablers may be present in the social situation the individual is in with the effect that some actions would be enabled and others constrained. Archer (2003) articulates that the individual has a unique capacity to reflect on the social situation through internal conversations and to respond, thereby influencing their situation. The social structures therefore provide conditions that may constrain or facilitate the actions of the individual but they do not fully determine these actions as the individual has powers that impact on action. In the application to the health sector therefore, social structures do not completely define the health of the individual but social structures may constrain or facilitate actions that are health related.

Causality and power

Definitions of common and interrelated terminology may be useful at this stage. Key terms used are 'generative mechanism', 'causality', 'power', 'causal power' and 'tendencies'. Generative mechanism was the term used by Bhaskar and this term has subsequently been used interchangeably with causal power or causal mechanism. They all refer to causality. Causality is defined as "the power to bring about change" (Hartwig, 2007, p. 57). Power is defined as "the properties of STRUCTURES [*sic*] or generative mechanisms that account for their tendential behaviour." (Morgan, 2007, p. 372). Morgan (2007) continues, stating that powers are real and they exist "whether they are actualised in events, experienced or perceived in those events, or correctly theorised" (p. 372). Morgan (2007) describes that humans have causal powers that

enable activities, such as physical activities, which are subject to "the causal powers of other generative mechanisms" (p. 372). It is possible that a causal power arising from objects having powers, may exist but not be utilised and so the events that are known to have occurred do not represent all that could have occurred (Sayer, 2000). Tendencies are defined as "a causal power exercised or set in motion" (Pinkstone, 2007, p. 458).

Lawson (1997) provides more detail about the actualisation of causal mechanisms as he discusses partial regularities, whereby a mechanism is occasionally actualised but not actualised in every event. In the social world there may be dominant mechanisms which are often actualised however other mechanisms remain in the background but are still available (Lawson, 1997). This conceptualisation assists with understanding that events occur due to the generative mechanisms that are actualised and that other events could have been actualised had other mechanisms been actualised.

Powers and tendencies

Fleetwood (2011) argues that within critical realism there are problems with the concepts of powers and tendencies that have not been sufficiently addressed. A key issue relates to a lack of clarity about powers and tendencies which are considered to both be different and also to be similar. This is due to a lack of clarity around the distinction that tendencies are powers when exercised but also when ready to be exercised. Whilst he acknowledges that not all would agree with his proposal, Fleetwood does pose that there are no differences between powers and tendencies but that there are stronger and weaker tendencies and powers.

In this thesis the term generative mechanism will be used to refer to generative mechanisms, tendencies and causality.

A brief summary

A brief summary of the key agreements within critical realist philosophy are that reality exists both within and outside human knowledge of it, that reality is stratified and that within the

stratification the layer of the real includes generative mechanisms that may or may not be actualised. The overall aim of the social sciences is to make explicit the structures that lie within the layers of reality, especially those within the layer of the 'real' which are considered to be present whether activated or not.

Implementation of critical realism

Critical realist research

Initially critical realism, as per Bhaskar (1975, 1979), provided a philosophy rather than a research methodology. As the origins of critical realism were philosophical, the main tenets have provided an overarching framework. Further detail is still necessary in order to apply these principles during the research processes.

Aim of critical realist research

The aim of critical realist research is to consider and explain how social structures and human activity are related (Porter, 2000). Sayer (2000) included the imperative to explain the connections among phenomena in the social world through the study of a stratified reality, in which 'emergent powers' and 'causal mechanisms' are a contextual focus. Major connections between the phenomena of concern are sought (Sayer, 2000). Critical realists aim to explain phenomena through a detailed exposure of the generative mechanisms that connect contributing factors (Ackroyd & Fleetwood, 2000). At an ontological level reality is considered to be stratified with layers in which phenomena are observable and layers that are unobservable but which generate (or not) the observations that are made (George & Bennett, 2005). A key aim of social science research is to seek the causative mechanisms in order that the invisible factors that generate the empirical world are evident (Danermark et al., 2002). For the researcher this means their aim is to identify generative mechanisms as well as how the generative mechanisms inter-relate to generate events (Lipscomb, 2008).

Wynn and Williams (2012) propose a very useful framework for researchers naming five specific assumptions of critical realist research. Firstly, knowledge is mediated through the interplay of transitive and intransitive dimensions, thus the researcher uses current knowledge to frame the observations made, and to identify the generative mechanisms that are present. Secondly, the aim of critical realist research is to explain events rather than predict them. The interactions of the causes of events within an open system are thought to make the events unpredictable. Thirdly, the explanation of events is through the articulation of generative mechanisms, which may or may not generate the event. Fourthly, the generative mechanisms are not measurable or observable, but are still present. Fifthly, multiple possible generative mechanisms will be identified that may generate the event.

Explanatory research model

Critical realism does not prescribe any particular research method (Sayer, 2000). Danermark et al. (2002) discuss a six phased explanatory research model which they propose as a guide for research. The stages comprise:

1) "Description" (p. 109) of the event or phenomena of interest

2) "Analytic resolution" (p. 109) in which the phenomena are analysed into possible causal components

3) "Abduction/theoretical redescription" (p. 110) of phenomena as they are considered in the context of other theories

4) "Retroduction" (p. 110) in which the data are investigated in order to answer questions related to structures and causal mechanisms

5) "Comparison between different theories and abstractions" (p. 110)

6) "Concretization and contextualization" (p. 110) as the inter-relationships between the structures and the causal mechanisms are examined in their contexts. Concretization refers to studying the mechanisms and structures to consider how they each interact

and contextualization is important to consider whether mechanisms and structures are present or if an accidental occurrence has occurred.

Danermark et al (2002) have provided a useful model giving a guide to critical realist case study and this model is described above in order to link the theoretical framework with research design. However the research process utilised in this thesis is articulated by Easton (2010) as he provides more detail of research processes. Easton's (2010) research process will be described in chapters four and five when the critical realist case study design used in this thesis is discussed.

Abduction and retroduction

Abduction and retroduction are highlighted as processes by which events are 'taken back' to their generative mechanisms. Abduction and retroduction are used in realist research to move from the layer of the empirical to the layer of the real as causative mechanisms are sought (O'Mahoney & Vincent, 2014). Through abduction the data, such as from participants' interviews and researcher's observations, is re-described in more abstract terms to sequence the patterns that created the events by combining current knowledge with the data to provide a viable explanation (O'Mahoney & Vincent, 2014). The data are reinterpreted through the application of theories (Dobson, 2012). Through retroduction as a research strategy, the researcher hypothesises about the structures and mechanisms within the analysed phenomena to identify those that must be present for the phenomena to be as they are (Dobson, 2012). The causal processes that influence the generative mechanisms are retroduced as they contribute to further understandings of the relationships between the generative mechanisms (O'Mahoney & Vincent, 2014). They may be actualised or not, thereby comprising events or not (O'Mahoney & Vincent, 2014). The abduction and retroduction process therefore involves the abstraction of data to form sequenced patterns, which are reinterpreted through theory, and the resulting hypothesised structures and mechanisms within the analysed phenomena are identified as generative mechanisms.

The domain of the empirical (such as the researchers' and participants' understandings of the phenomena) is theoretically transferred to the unobservable domain of the real (generative mechanisms) (Morais, 2011). Retroduction is thereby a means of uncovering unobservable generative mechanisms in the domain of 'the real', that are considered to be generating the events in the domain of 'the actual', which may be experienced in the domain of 'the empirical' (Reed, 2009). It involves events being explained through proposed theoretical interpretations identifying possible mechanisms that generate the events (Morais, 2011).

The retroductive process for identifying causal mechanisms is one that is "creative and intuitive" (Wynn & Williams, 2012, p. 800) and as the generative mechanisms are not visible they must first be speculated (Bunge, 1997). The researcher generates several explanations of generative mechanisms that "must exist" (p. 800) for the particular events to occur (Wynn & Williams, 2012). Logical explanation of the conditions under which the phenomena occur is provided (Wynn & Williams, 2012). The inference shifts from knowing about the events to knowing the generative mechanisms that led to the event occurring (Scambler, 2001).

Blom and Morén (2011) within the arena of social work discuss the ways in which generative mechanisms can be identified and described, based on the work of Danermark et al. (2002). Key questions are posed within the retroductive phase of the research process, including "How is X possible? What properties must exist for X to be what X is? What causal mechanisms are related to X?" (Blom & Morén, 2011, p. 70). These questions aim to identify the generative mechanisms through the application of retroduction. In their example Blom and Morén retroduce by asking what is needed to improve the life situation of an adolescent in a youth treatment programme. Through retroduction they identify that the adolescent must be ready to respond and exert themselves for change to occur and therefore their "response mechanism" (p. 72) must be activated (Blom & Morén, 2011). There are many elements that combine to activate other elements in order for the 'response mechanism' to be activated.

O'Mahoney and Vincent (2014) consider that when abduction and retroduction have succeeded new understandings of the phenomena become evident. The subject may be reconceptualised and the processes concerned may also be understood in a different way. The researcher may have abduced and retroduced from data to the theory that best explains the data and created a new way of looking or understanding the phenomena of concern.

Summary of critical realist research

The main aim of critical realist research is to gain knowledge of the generative mechanisms of phenomena or events that are visible through their effects. The analytic methods of abstraction and retroduction enable the researcher to build knowledge of generative mechanisms through the identification of structures, powers and relations that are present in reality, and are socially mediated by the individuals involved. The three layers of reality include the empirical, the actual and the real, with the search for generative mechanisms lying within the layer of the real.

Evaluating the validity of data and accuracy of analysis

In qualitative research attention is paid to the issue of rigour in the analysis of data to ensure credibility of the interpretation of data and research findings (Green & Thorogood, 2014). Features of rigour in the analysis of data include a transparent account of the procedures used, provision of sufficient evidence from data to support the researcher's interpretation, comprehensive analysis, and comparison of data between and within cases (Green & Thorogood, 2014). While these issues are relevant to critical realist qualitative research, and may be included in discussion about the rigour of the critical realist research process, they are not the main concepts to be considered.

Maxwell (2012) discusses the need to address issues of understanding, validity and the use of evidence when evaluating the research processes and outcomes of critical realist qualitative research. Understanding and validity relate to accurate description of data (descriptive validity), accurate inferences from data (inferential validity) and accurate theorising of phenomena

(theoretical validity). Maxwell (2012) also discusses the need to address the evidence in the research process which concerns the ways in which evidence was gained and the ways in which it was used. The interpretations and conclusions of the study are then able to be scrutinised for credibility.

Critical realist research

Critical realism has become increasingly evident in research endeavours. The approach is evident within the 'business' sector with proponents within information systems (for example Carlsson, 2004; Dobson, 2012; Wynn & Williams, 2012), organizational research (for example Ackroyd & Fleetwood, 2000; Edwards, O'Mahoney, & Vincent, 2014; Reed, 2009; Sayer, 2004) and industrial marketing (for example Easton, 2010). Some researchers within these disciplines have supported the critical realist's view of the nature of reality in order to advance knowledge within these areas. The overall rationale for the use of critical realism is the focus on ontology with the identification of generative mechanisms expected to provide useful knowledge for these sectors that has not developed through other research approaches. The identification of generative mechanisms presupposes movement from this analysis to emancipatory action (O'Mahoney & Vincent, 2014). The researcher is able to provide a view of the research problem which may not have been evident to participants, yet this view may also be contested (O'Mahoney & Vincent, 2014).

Critical realist research in health and social sciences

A key attribute of critical realism is the framework through which complex social issues may be understood (Gerrits & Verweij, 2013). Not surprisingly therefore critical realism has also infiltrated health and social research contexts. It is considered one way to grapple with ongoing health and social issues that continue to persist in societies and continue to affect individuals (Jones-Devitt & Smith, 2007). A critical realist approach is evident within social epidemiology (for

example Dunn, 2012), social work (for example Blom & Morén, 2011), and health promotion fields (for example Clark, MacIntyre, & Cruickshank, 2007).

Critical realist research in nursing

Espoused support

Critical realism has also been utilised within nursing contexts although it is a more recent addition to research endeavours. Lipscomb (2008) supports the use of critical realism in research as critical realism requires the researcher to be explicit about, and ensure congruence of, the underlying epistemology and ontology. Lipscomb (2008) considers that this congruence will support the use of mixed methods for nursing research as it will ensure coherence of the theoretical argument. Similar support is from Angus and Clark (2012) who comment that a particular strength of critical realism is the ability of the researcher to avoid epistemological constraints and to consider concepts in different ways. Methodological diversity is also noted by Clark, MacIntyre, and Cruickshank (2007) along with the usefulness of this approach.

Critical realism is considered to be useful for nursing research, in particular research that aims to explain events in context, understand and improve interventions and also to explore links between bio, psycho and social aspects of health (Clark, Lissel, & Davis, 2008). Nairn (2012) also promotes the application in nursing research as he considers that the stratified ontology of critical realism has the capacity to promote interest in the many facets of nursing practice. McEvoy and Richards (2003) also consider it a useful tool. They support the use of critical realism in nursing to explore how generative mechanisms operate within specific nursing interventions as this approach enables the researcher to look beneath the surface at social and natural phenomena in order to fully understand the effectiveness of the outcomes. Clark, Lissel and Davis (2008) focus on the complexities of nursing practice and nursing interventions as do McEvoy and Richards (2003).

A further application of critical realism within nursing has been as a philosophical framework to analyse aspects of nursing. Littlejohn (2003) utilised critical realism as an analytic tool to promote the positioning of nursing in the mental health arena as an autonomous profession that is independent from psychiatry and also from psychology. Bergin, Wells and Owen (2008, 2010) analysed the use of critical realism as a philosophical framework to study mental health and gender. They concluded that it provides a useful approach as it enables the coexistence of current explanations that encompass social, biological, psychological and also cultural components (Bergin et al., 2008). Greater depth and deeper explanation are therefore possible (Bergin et al., 2010).

There is therefore some espoused support for the use of critical realism within nursing. Critical realism promotes congruent epistemological and ontological framing for the research endeavour. The stratification of reality promotes links between the layers enabling complex practice situations to be investigated.

Application in nursing research

There are several nursing authors who have utilised critical realism as a mode of research and their research projects will be briefly described next.

Critical realism has been applied by Porter (1993) who used a critical realist ethnographic approach to study the race and power relationships between the medical and nursing staff in an intensive care unit in Ireland. Porter (1993) showed that white Irish nurses' attitudes and behaviours towards doctors who were from both racial majorities and racial minorities illustrated a complexity inherent within racism related to power and social status. At times racism was expressed while at other times it was not, as mechanisms enabled or constrained the expressions of racism. Porter (2015) has continued to support the application of critical realism, and in particular the application to address some epistemological weaknesses within ethnography (2000).

Clark et al. (2007) applied a critical realist approach to evaluate a health promoting programme for primary and secondary prevention, and treatment, of congestive heart disease in Scotland. They concluded that this approach provided a useful way to evaluate a program that addresses multiple determinants of health where the outcomes of the programme often are the result of many underlying mechanisms. They considered that the positivist epidemiological approach did not address the complexities and that a constructivist approach did not provide sufficiently broad evaluations. The 'middle ground' of critical realism is therefore able to provide a useful contribution.

In Australia, Masso, McCarthy, and Kitson (2014) have applied a critical realist grounded theory approach to identify the generative mechanisms present, and how they interact, that influence evidence-based practice being implemented in RAC. Four generative mechanisms were identified, whereby individuals needed to: have commonalities in their approach to incorporate change; implement strategies to shift their priorities; have the ability to make connections to incorporate new knowledge into current practices; and have a willingness to act. Each generative mechanism influenced the implementation of evidence, but more than one generative mechanism needed to be present for change to occur in order that evidence was implemented. Critical realism therefore contributed to an explanation of how evidence was, or was not, implemented into RAC.

There is therefore application of critical realism in nursing research prior to the utilisation in this thesis. This methodology has provided an overarching framework for the research processes that have been undertaken. Alignment of the research questions through the ontological and epistemological positioning, with the methods employed to gather, validate and analyse data is evident, and is informed by critical realism.

Summary of chapter three

Chapter three has provided the underpinning epistemological and ontological positioning of critical realism as utilised in this research. The epistemological positioning of critical realism, between positivism and interpretivism, has been explained in order to provide the theoretical framework for the way in which reality can be investigated and known. The limitations of human understanding indicate that any knowledge of reality is a partial representation and is subject to change. The ontological view of reality has been provided and focuses on intransitive structures, a three layered stratified reality, and research processes which aim to explain generative mechanisms with their tendencies that may or may not be exercised.

CHAPTER FOUR

Research strategy: Case study and critical realist case study

Introduction

Chapter four will introduce case study; describe the central features of this research approach; summarise the key strengths and weaknesses; and provide an overview of the design process for case study including key research methods. Case study research has been conducted for many decades in a range of social science disciplines. Over the past forty years this research approach has been strengthened through the formalisation of methods and linking of case study approach with underpinning epistemologies (George & Bennett, 2005). Many researchers have made valuable contributions to understandings of the empirical world through case study (Gerring, 2004). Two key researchers who have consistently promoted the use of case study are Stake (1995, 2005, 2008) and Yin (2003, 2009a, 2014). Stake (1995) has conducted qualitative case study research within his area of education. Yin's (2014) discipline areas are history and cognitive science, and he currently supports case study research by assisting others to complete research projects.

This chapter will also introduce critical realist case study. Critical realism has been noted to be compatible with case study (Danermark et al., 2002; Easton, 2010; Sayer, 2000; Wynn & Williams, 2012) and the case for a critical realist case study will be provided. This research approach has been utilised within some disciplines such as organisational studies, but is relatively new and underutilised in nursing research. The detailed research design and the methods that have been utilised in this thesis will follow in chapter five.

Defining case study

There are many differing definitions of case study. Stake (2005) describes case study as "... a choice of what is to be studied" (p. 443) rather than a choice of methodology. Yin (2014) provides more detail when he defines case study to include two parts. The first part refers to the 'scope' of the 'case' or phenomena under investigation which is in-depth, occurs in the real world and in which there are blurred phenomena and context. The second part refers to the features of the case study in which the researcher uses multiple sources of evidence and triangulates data. Yin's (2014) definition provides some clarity within the complexity of definitions of case study. Van Wynsberghe and Khan (2007) add philosophical detail when they propose a definition in which case study encompasses all research paradigms, has no orientation to a particular discipline, and focuses attention on the phenomenon that constructs 'the case'. Gerring (2004) also contributes to defining case study by stating it is "an intensive study of a single unit for the purpose of understanding a larger class of (similar) units." (p. 342). He therefore adds the rationale for conducting case study to contribute to the understanding of more 'cases'. The central theme of all of these definitions is that 'the case' is central.

Taylor (2013) concludes that the wide range of definitions of case study are caused by variations in researcher and discipline perspective on case study as either a methodology, a design or a method. She states that to be a methodology, the epistemological positioning should be made clear. This will enable the findings of the case study to be critiqued and the knowledge generated to be verified. If the epistemological position is not made clear the case study may be considered as a design or a method, especially if prediction and generalisation are the assumed outcomes.

There are many reasons to use case study and many ways that researchers have approached this research strategy within the social sciences. Luck, Jackson and Usher (2006) propose that case study has flexibility in epistemology, ontology and methodology, and that it is able to bridge research paradigms. Case study provides an approach through which the researcher is able to

select the position that will best answer the specific research questions, and pragmatism rather than paradigms determine the methods employed (Rosenberg & Yates, 2007). Case study as a research approach is therefore considered to be versatile in the generation of knowledge. Within nursing, case study is considered to be an appropriate research approach encompassing usefulness and flexibility (Brophy, 2008; Gangeness & Yurkovich, 2006; Luck et al., 2006; Rosenberg & Yates, 2007).

Case study may be located within qualitative or quantitative approaches to research (Stake, 1995; Swanborn, 2010; Yin, 2014). Case study has also provided a way in which mixed methods may be used to answer the research questions (Flyvbjerg, 2011; Stake, 2008; Swanborn, 2010). Stake (2008) states that the aim of a case study is to provide a report that represents the case and not 'the world'. The purpose is to understand the case. Similarly Yin (2014) has described the aim of case study research as providing an understanding of the phenomena of the case. The research questions that case study addresses effectively are those asking 'how' and 'why' questions about contemporary phenomena that are out of the control of the researcher (Yin, 2014). In part this is due to case study fitting well with questions that require a holistic approach within a particular context (Gangeness & Yurkovich, 2006).

Central features of case study

There are key features that represent case study: (i) the definition of the case (ii) the type of research design (iii) selection of data collection methods to promote triangulation and (iv) the contribution case study makes to theory development.

Defining the case

Defining the case defines what is to be studied. Stake (1995) considers the case to be ". . . a specific, a complex functioning thing" (p. 2). He refers to educational programmes as cases. Stake (2008) also refers to one child, a classroom of children, an event or an agency as a case and adds that a case "is one among others" (p. 120). Yin (2014) adds relationships, projects and

decisions but warns against abstractions such as an argument or a claim. Gerring (2007) describes a range of case, or cases, to include individuals, families, different social groups, communities, towns, cities, countries, a specific business, or groups of companies. Willig (2013) concurs with many of the cases that Gerring (2007) identified.

The boundaries of the case may be difficult to identify and define (Gillham, 2000), though this is an important aspect of case study research as it distinguishes the phenomenon of the study from the surrounding context (Yin, 2014). The boundaries provide some specificity to the case in order for the researcher to identify what to include in the case (Stake, 2008). Gerring (2007) considers that a case may comprise any phenomenon as long as there are boundaries that identify it and that the case is the main focus. Appleton (2002) provides a pragmatic summary in which she considers that the case is ". . . the phenomenon of interest and context that constitute the case" (p. 86). There is agreement therefore that a case consists of phenomenon with identifiable boundaries which is the main focus of the study.

Further definition is provided as the case is a real life event in a real world context. While boundaries of the case must be identified in order that the phenomenon being studied is clear, attention must also be paid to the context or environment so that the interaction between the case and the context can be studied (Willig, 2013). In practical terms the researcher needs to consider how to balance the scope of 'the case' with the manageability of the project (Platt, 2007). Social phenomena are embedded within social life and case study enables study of the complexities in context (Gillham, 2000; Yin, 2014) with the intent of understanding events that occur in their usual and real settings (Yin, 2014). The contextual setting is where meaning of phenomena is shaped and meaning stems from both the immediate and the wider context of the setting (Abma & Stake, 2014). Case study is considered appropriate when the researcher does not have control over the events being studied and when the context of the study includes details present within the whole situation (Yin, 2014). Complexity is expected (Stake, 1995). The

time frame for the researcher to study the case is of less importance than the need for the researcher to understand in depth the particular case (Stake, 2008). Within nursing Rosenberg and Yates (2007) claim it is a useful way of studying "highly contextualised phenomena" (p. 451).

The type of research design

The second key feature of case study is the type of research design. A useful way to categorise case study is that it may be descriptive, explanatory or exploratory (Yin, 2014). A descriptive case study provides description of 'the case' as it occurs within its natural context (Yin, 2014). This description is detailed and thorough and may lead to new insights, thereby increasing understanding of the phenomenon which is being studied (Willig, 2013). An explanatory study explains 'how' and 'why' phenomena occur (Yin, 2014). The aim of explanatory case study is to provide explanation of the concepts along with their description (Willig, 2013). The exploratory case study is used to identify future research questions or procedures to be used in subsequent research (Yin, 2014).

Descriptive, exploratory and explanatory case studies can use single or multiple case design. In this context a single case refers to 'the case' which could be the one unit under study such as one person or the many units that make up the single case (Stake, 2008; Yin, 2014). A single case design may be used if the case is ". . . *critical, unusual, common, revelatory,* or *longitudinal . . . "* (Yin, 2014, p. 51). 'Critical' refers to the case that is crucial to the propositions or the theory; 'unusual' refers to a unique or extreme case; 'common' refers to an everyday case; 'revelatory' refers to a case that reveals what has previously been unknown; and 'longitudinal' refers to the same case being studied over several historical time frames (Yin, 2014). Multiple cases may also be studied. Stake (2008) describes multiple or collective case studies as those that incorporate a number of cases to research a phenomenon or population. A series of cases may be compared with the aim of generating new theory (Willig, 2013). Yin (2014) also discusses multiple case designs and describes that the cases used may be direct replication or the use of diverse cases.

A further categorisation by Stake (2008) describes intrinsic and instrumental case studies. An intrinsic design is one in which the researcher wishes to further understand the specific case. An instrumental design is one in which the researcher wishes to gain insight into a particular case however the case is not the main focus but is the way of exploring an issue.

Data collection methods

The range of data and data collection methods will vary according to 'the case'. Data collection methods may be those used in qualitative research, quantitative research and also mixed method research (Yin, 2009a). Stake (2008) discusses qualitative methods to rely on "observation, interview, coding, data management, and interpretation" (p. 132). These methods are extended by Yin (2009a) to "focus groups, ethnographies, participant observation, key interviews, documentary evidence, access to archival records, direct observations in the field, and surveys" (p. 261). It is essential to triangulate the types of evidence used as data in order to avoid bias[7] (Yin, 2009a) and to include diverse perspectives (Stake, 2008). Triangulation also provides data from diverse sources, each with its own context, and thereby enriches the case through the inclusion of different contexts and perspectives that are inherent in 'the case' (Willig, 2013).

Contribution to theory development

Case study has been critiqued and criticised by some authors based on concerns about the nature of the descriptive, exploratory and explanatory role it takes rather than the predictive role of natural sciences in the development of scientific knowledge (Flyvbjerg, 2011). Flyvbjerg (2011) provides rationale to refute what he considers to be five key misunderstandings of case study including: the lesser role of case study through which context specific knowledge is developed rather than predictive theories; the inability to generalise from an individual case;

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[7] Qualitative research focuses on rigor (J. Smith & Noble, 2014). However Yin (2009a, 2014) and Flyvbjerg (2011) explicitly address the concept 'bias', and use this term, within case study research.

the usefulness of case study for hypothesis development but not for testing hypotheses; concerns that bias will lead to the researcher's pre-conceived ideas being confirmed; and that case studies are often difficult to summarise. Instead Flyvbjerg argues that context specific knowledge is more useful to the human sciences than predictive theories. He also suggests that the intense investigation of 'the case' is valuable in generating new concepts by noting details that may arise from studying a usual, deviant or extreme case. Flyvbjerg states that case study may generate and also test hypotheses and that case study holds no more bias than other methods of research as he considers that if bias is present it tends towards falsifying any preconceived ideas that the researcher has rather than supporting them. He concludes by adding that summarising a case study is difficult in terms of the process rather than the outcome of the case and that a case study is a narrative. Flyvbjerg has thereby supported the use of case study as a research approach and provided a thorough rationale to address criticism.

A further useful distinction is made by Byrne (2009) who separates 'generalising' from 'universalising'. He identifies limits to generalisation that should be specified and that universal laws are not able to be formed in the social sciences. This assists in clarifying the aims of conducting case study research. Willig (2013) also warns that case study researchers should be cautious when generalising from 'the case' as the research may provide explanations that may, rather than do, apply to other cases.

Strengths and weaknesses

Aspects of the research approach and research design of case study may be a strength or a weakness for a particular case study. Issues have been identified that lead to criticism of case study for a lack of rigour. These include lack of a theoretical base, data not being triangulated, relevant evidence being omitted, and the case study report being superficial or not reporting appropriate data (Kyburz-Graber, 2004). Additionally Flyvbjerg (2011), as discussed in the previous section, identifies bias as a potential problem for the case study researcher although

he refutes the notion that the case study researcher is likely to be more biased than in any other research process.

Major strengths include the flexibility of case study to cater for a range of theoretical bases including qualitative and quantitative research approaches along with mixed methods. Luck et al. (2006) support this position stating that case study could be explored as a way of linking research paradigms in nursing. A potential weakness from this flexibility could arise if the research questions, methods of data collection and the method of analysis are not aligned with each other as well as aligned with the research question (Willig, 2013).

A strength or weakness is the range of data collection methods that are available and the researcher must ensure the relevant data are gathered using appropriate techniques. In order to strengthen the evidence Yin (2014) describes the goal of collecting and using several forms of data in the triangulation process. Researchers are encouraged to make clear assertions which are supported through triangulation and to provide 'thick' description (Cousin, 2005). If appropriate processes are employed by the researcher that are specific to the methods as well as the ontology and epistemology then rigour and validity may be ensured (Luck et al., 2006). Multiple sources of evidence promotes credibility for the case study (Yin, 2014).

Yin (2009b) addresses the potential issue of the case study report omitting data or being superficial through careful consideration of the evidence. Data from interview, documentation analysis and also observations may be integrated to analyse whether there are consistent or conflicting patterns present. Also the use of rich data may assist in reducing omissions or superficiality.

A potential weakness of the case study approach which can be addressed is the possibility of bias. Hancock and Algozzine (2006) address this issue. One form of bias is during the gathering of observational data and this risk may be reduced through the researcher carefully considering what observations should be made and what data to gather to address the research questions.

Documentation of the date, time and venue along with names of those being observed and their activities will assist this process. A further source is the inherent bias of the researcher. Specific attention to personal attitudes and beliefs along with the intent to minimise bias will assist to reduce this risk. Careful attention to and respect for ethical aspects of gaining informed consent and ensuring confidentiality are also important aspects of avoiding bias.

Sources of evidence

Interviews

Interviews are often associated with case study research and may vary widely in number (Caronna, 2010). Kelly (2010) provides useful comments about interview techniques. The interactions that occur between the interviewer and the interviewee are understood to generate the data gathered and therefore there is a collaborative aspect to the process. The researcher focuses on the phenomena of the study and aims to access the meaning of this phenomena to the interviewees. Their views and experiences of the phenomena are therefore important. Ethical considerations are particularly important and to ensure accurate representation of the interview data the interview is often audio-recorded with the participants' consent. It is subsequently transcribed. A commonly used form of interview is the semi-structured interview in which an interview guide focuses questions on a particular topic while new topics or avenues are also encouraged and open ended responses sought. A particular challenge for the researcher is the balance between respecting the interviewee's responses while probing further for greater detail.

Brinkmann and Kvale (2015) provide a comprehensive discussion of many aspects of the interviewing process and for the interviewer they use the analogy of being a "miner" or a "traveller" (p. 57). The miner aims to bring the interviewee's knowledge to the surface without contaminating it during this process and therefore does not ask leading questions. The traveller talks to people while undertaking the journey and explores unknown territory by asking

questions. The traveller then takes his or her interpretations back to his or her world and may have gained new insights through this experience.

Yin (2014) considers the interview to be a vital source of evidence in case study research as the interviewee is able to provide essential insights into the topic of study. The interviewer must simultaneously maintain a friendly conversation with the interviewee and also pursue the purpose of the interview. The interview could be prolonged, shorter or a part of a survey. The prolonged interview would usually occur over two or more hours whereas the shorter case study interview would occur over approximately one hour. The interview data should be compared to data from other sources in order to corroborate the data.

Document analysis

Prior (2010) describes two considerations of document analysis to involve conceptualising the document as a conveyer of content and also as a form of influence in the social organisation of the setting. Therefore the document is able to 'do things' and also to 'say things'. In health organisations there may be a range of available documents including patient related records, policy documents and procedure manuals as well as many reporting forms (Prior, 2010).

Most case studies will require some document analysis and some documents may include archival records (Yin, 2014). The key use of collecting this form of data is to seek corroboration or refutation of other data. The purpose of the utilisation of the document along with the intended audience, and the reason the communication has occurred are both useful considerations for the researcher.

Participation and observation

Green and Thorogood (2014) summarise the researcher's participant and observational roles using an ethnographic approach. The roles are those of a complete observer, observer as participant, participant as observer and complete participant. These levels are useful to assist

the researcher to develop a blueprint about how much observation and how much participation is appropriate for the particular context in which they are conducting research.

Observations are also often associated with case study research and are usually undertaken at specific times and for specific purposes rather than as an opportunity to observe daily activities (Caronna, 2010). Flexibility and the ability to respond to people and situations assists in this form of data collection (Allen, 2010). Yin (2014) delineates ethnography and case study research by stating that whilst observation is a detailed and long term process in ethnographies, this is not so for case study where observations are only one form of data collection.

Allen (2010) provides details about undertaking participant observation. While a social relationship is formed between the researcher and the participant, there is a particular purpose for the observation. The relationship may be detached or close and an ethical approach must be taken by the researcher to avoid harm to the participant. Yin (2014) also discusses direct observation and participant observation as useful for case study research. Direct observation may be of environmental features, organisational and individual behaviours, and equipment and technology. Participant observation relies on the researcher being able to access the event or group, in order to gain insight from being present.

Yin (2014) discusses the particular challenges of avoiding "bias" (p. 70) on the part of the researcher in case study as the researcher may become involved to a lesser or greater degree and may become further aligned with the group being studied. The researcher must balance participation and observation and must decide whether it is appropriate for the particular case study being undertaken.

Critical realism and case study

Compatibility of critical realism and case study

This section will focus on the application of critical realism to case study methodology. Critical realism is considered to strengthen case study (Ackroyd & Karlsson, 2014; Dobson, 2001; Morais, 2011; Vincent & Wapshott, 2014; Williams & Karahanna, 2013) and as discussed in chapter three this approach offers a theoretical framework to focus on the identification and explanation of generative mechanisms. The search for generative mechanisms classifies the use of case study in this research project as explanatory case study. The first part of this project's aim is to describe the clinical decisions that are made by RNs in the RAC sector in order to provide the context for the primary research aim of explaining how and why these clinical decisions are made.

Ackroyd and Karlsson (2014) support case study as a key research design for critical realist research. The inclusion and significance given to the context of the case provides an appropriate setting for the identification and explanation of generative mechanisms. Ackroyd and Karlsson (2014) also consider that the focus on generative mechanisms is congruent with case study design. In addition they point out that many critical realist case studies have led to the progression of scientific knowledge as accurate description of the key generative mechanisms may provide the platform for further research. Retroduction as a technique, asks the question "what must the context have been like to have allowed the emergence of a given generative mechanism?" (p. 27) and the explanatory response is also considered congruent with case study (Ackroyd & Karlsson, 2014).

Kessler and Bach (2014) support critical realist case study and their rationale, similar to Ackroyd and Karlsson (2014), is the importance of the context of the case and the emphasis on causative factors through the identification of generative mechanisms. This search for causation is appropriate to both critical realism and case study and is facilitated through in-depth analysis of the case. Both qualitative and quantitative methods are also congruent with critical realism and

case study depending on the research questions being asked. Kessler and Bach (2014) add that the technique of triangulation of the data sources is a strength of critical realist case study.

Researchers who study organisations support the application of critical realism to case study (Dobson, 2001; Morais, 2011; Vincent & Wapshott, 2014; Williams & Karahanna, 2013). Dobson argues that explanations would highlight the mechanisms and social structures within the organisation that have 'powers, potentials and also tendencies'. Morais (2011) provides detail about some of his own research utilising a multiple case study approach to investigate "foreign subsidiary management" (p. 64) amongst multinational corporations. He claims that had he utilised a critical realist case study approach focusing on the search for causal mechanisms, rather than the case study approach focused on multiple variables, his analysis may have provided a more satisfactory explanation. Morais considers a particular strength of critical realist case study is the ability to choose the most convincing explanations within the limitations of current theory and data.

Similarly, Williams and Karahanna (2013) used a critical realist case study in their research project to identify a causal explanation of the co-ordination processes and outcomes of governance structures of information technology centralisation within organisations. They applied the principles for critical realist case study proposed by Wynn and Williams (2012) which was briefly described in the previous chapter, chapter two. Their findings identified two main generative mechanisms that explained the co-ordination efforts undertaken within a large organisation. They concluded that their explanations were subject to refinement and did not fully explain the co-ordination outcomes they observed. Other generative mechanisms could also be present, activated or not, and could induce different co-ordination outcomes (Wynn & Williams, 2012).

In the arena of health, O'Brien and Ackroyd (2012) used a critical realist comparative case study to identify the generative mechanisms relevant to the recruitment and retention of overseas

trained nurses to the United Kingdom's (UK) National Health Services (NHS). They identified generative mechanisms to explain how a partial assimilation or resignation from the workforce occurred after nurses were recruited. They concluded that critical realist case study provided a significant contribution to knowledge of the recruitment and retention of overseas RNs in the UK NHS, which would not have been identified through other forms of research.

Maxwell, Baillie, Rickard and McLaren (2013) also conducted critical realist case study in health, as they explored the generative mechanisms that explained the development of new nursing roles in NHS hospitals in the UK. A range of data was collected including interview data, observations of meetings, shadowing of role holders and organisational document analysis. These authors contributed new knowledge by illustrating how new workplace roles were negotiated and explaining the importance of social identities.

A further example in the UK health arena is by Kessler, Heron and Dopson (2012) who used a critical realist multiple case study to analyse the role of the health care assistant in acute care contexts in UK hospitals. They sought to uncover generative mechanisms of the 'actual' patterns of allocated tasks and responsibilities. By collecting data at four sites they differentiated the distribution of tasks at local facility level as well as within clinical areas at each facility. This analysis provided specific details about causative factors specific to each clinical location.

Critical realist case study research design

Smith and Elger (2014) provide specific suggestions about a critical realist approach to the method of gathering data by interviews. They pose that there are some distinctive features. A critical realist approach assumes pre-existing structures and relations are present and that they both constrain and enable actions of the people involved, including informants. This assumption leads the researcher to view interviews as the interviewee's interpretation of the situation and to analyse this data for structures and relations that constrain and enable action within the social context. The interviewee is expert in ways that differ from the expertise of the interviewer who

has the responsibility of conceptualising the interviewee's data. The data must be retroduced by the researcher for generative mechanisms rather than being interpreted by the researcher as the product of the interview. The data are also analysed in an ongoing way and so is further developed. Greater understandings of the structures and relations, along with constraints and enablements, develop. A layered reality therefore caters for the interviewee to provide an account which provides data related to the 'empirical' and 'actual' layers of reality and which enables the researcher to retroduce the data to the 'real' layer of generative mechanisms.

Easton (2010) describes a process for critical realist case study research within industrial marketing. He based his work on that of Sayer (1992). Easton discusses the following steps:

1. "Decide on the phenomena to be studied" (p. 123).

2. State the research question in the form of "what caused the events associated with the phenomena" (p. 123).

3. Identify the components of the phenomena through abstraction. These "initial conceptualisations may change as the research progresses" (p. 124).

4. Collect data appropriate to the case.

5. Apply retroduction to identify causal mechanisms that explain the events that occurred.

6. Consider if the explanation is adequate within the current context and time.

Easton's (2010) research process is useful and applicable as it provides a pathway for critical realist case study to be conducted. This critical realist process has been utilised as an overarching research framework for this thesis. A limitation is that Easton (2010) does not provide in-depth detail about the interpretation of data within a critical realist framework, except in broad terms, acknowledging cycles of deduction and induction within a retroductive frame. Further detail about the analytical processes for data interpretation is therefore required and a critical realist framework by Crinson (2007) supplies this detail.

Crinson (2007) describes the application of critical realism to a qualitative study in which the perceptions of nurses regarding organisational changes within the UK NHS were explored. Crinson firstly specifies the coding of data which is undertaken to interpret the data and whereby themes are identified through an inductive process. This inductive process intertwines with a deductive process in which explanations of the themes are theorised. The inductive mode of reasoning highlights the perceptions of the participants and the deductive mode of reasoning highlights the social structures and relationships that are present. The themes derived through induction and theories derived through deduction are linked and form generalisations from the more tangible data. Retroduction is a mode of reasoning whereby the generative mechanisms relevant to structures and mechanisms are posed to identify those that must be present for the phenomena of 'the case' to be as they are. In the final stage of the process the researcher provides an explanation of the conceptualisation and this leads back to further research. Crinson's (2007) analytic framework provides detail and justification for the analytic processes used in this research project. Despite the framework, detail is still lacking regarding the interpretation of qualitative data and therefore for the research purposes of this study the data analysis process provided by Maxwell (2012) is applied.

Maxwell (2012) refers to 'categorising' and 'connecting' as ways of inductively analysing the data. Although he provides a research process for critical realist qualitative research he omits details regarding retroduction which is considered by others to be key to critical realist research. Categorising is a process through which similarities and differences within data become evident. It primarily utilises coding in which all forms of data are broken into units and given a 'code' to represent the different topics. The categories that are developed are connected into patterns with the data contained within the categories. Connecting involves identification of connections through a narrative in which data are reduced. The two analytic tools of 'categorising' and 'connecting' described by Maxwell (2012) may be used individually or together in a sequential manner.

The critical realist case study process applied in this research project has therefore combined Easton's (2010) overarching framework, supplemented by Crinson's (2007) analytic processes and also supported by Maxwell's (2012) inductive processes of categorising and connecting data through coding of data. The application of this overarching research design will be further discussed in chapter five along with the inherent methods that have been utilised. The specific research design is represented below in Figure 2.
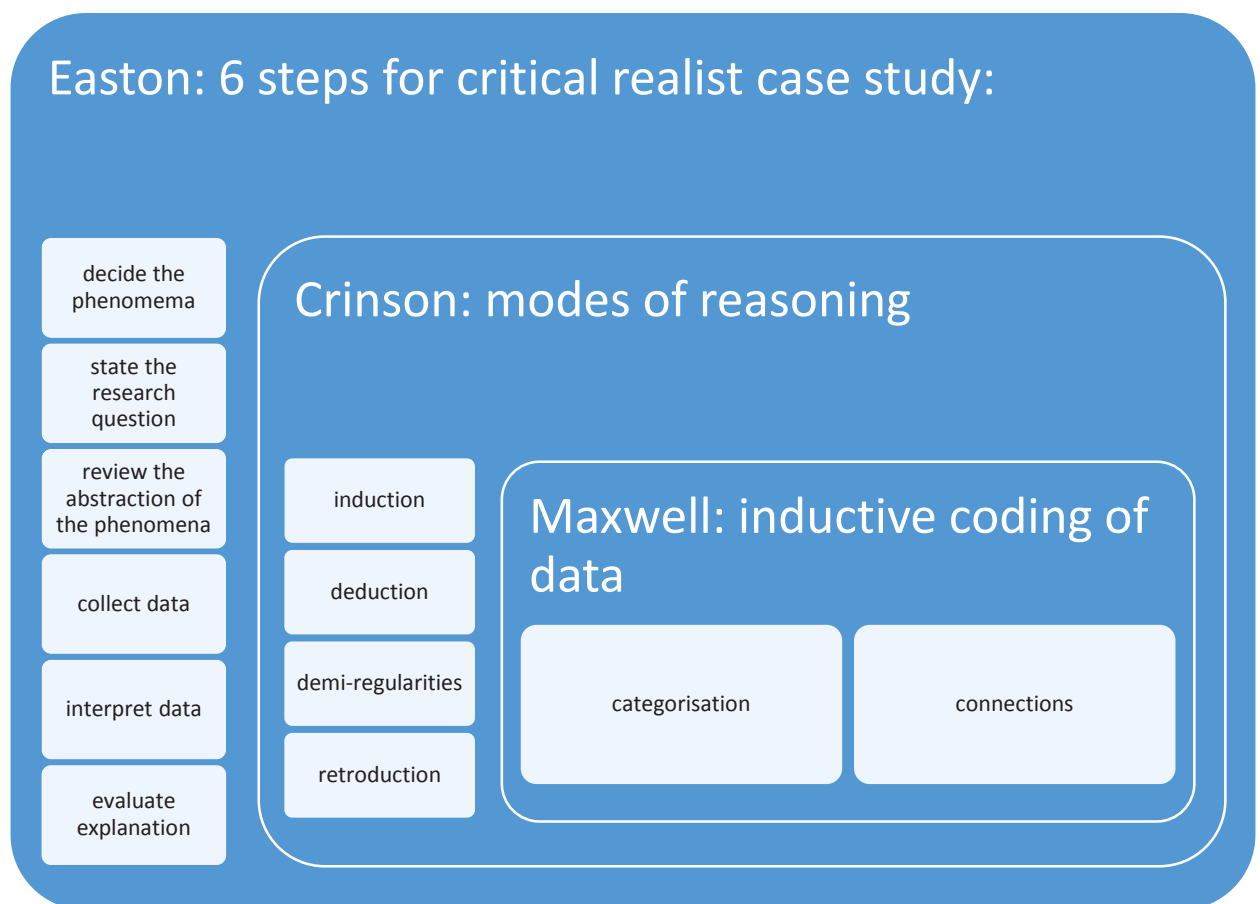
Figure 2. Critical realist case study research design for this research

To summarise the research processes applied in this thesis, Easton's (2010) six steps are used. However as step five (interpret data) lacks detail Crinson's inductive, deductive and retroductive reasoning modes are employed as they provide sufficient detail for the raw data to be analysed. Crinson does not detail the inductive processes as clearly as Maxwell (2010) who specifies the inductive reasoning processes of categorising and connecting the raw data.

Summary of chapter four

This chapter has explained the research strategy applied in this study by introducing case study. Key features include the researcher defining 'the case', identifying the boundaries and the context of the case, and focusing in depth on real life events that occur in real life situations. The case study may have descriptive, exploratory or explanatory aims and be a single case or multiple cases. Data collection sources and methods reflect a range of tools used in quantitative and qualitative approaches and triangulation is useful. Case study generates in-depth context specific knowledge which is able to be generalised rather than universalised, and is able to be used to test and as well as generate hypotheses. The researcher is able to mitigate against bias and should develop a narrative which provides depth and richness about 'the case'.

The chapter has also provided details of the compatibility of case study and critical realism, which addresses some of the inherent weaknesses of case study as the search for generative mechanisms directs the research processes. Rationale has been provided for the application of a critical realist case study approach which is apt for this research. The implementation of the research design will be discussed in the subsequent chapter to provide an open and transparent process thereby promoting rigour.

CHAPTER FIVE

Critical realist case study research design and methods

Introduction

This chapter provides detail about how the critical realist case study approach has been implemented. As the research comprises an explanatory critical realist case study, the aims are to describe and explain 'how' and 'why' clinical decisions are made by the RNs through the identification of generative mechanisms. It is important to describe the processes that have been used in this critical realist case study to articulate the generative mechanisms.

As discussed in chapter four the critical realist case study process applied in this research project has integrated Easton's (2010) overarching framework with Crinson's (2007) analytic processes, supported by Maxwell's (2012) data coding processes of categorisation and connection. This process has been represented in the figure, '*Figure 2:* Critical realist case study research design for this research', in the previous chapter. Easton's six steps will be addressed and the first five will form the majority of this chapter. In the first step the phenomena of the case will be described. The research questions will be named in the second step and characteristics of the case identified in the third. Then the considerations and processes necessary for data collection to be undertaken will be discussed in the data collection section within step four. Data collection processes include the details about ethical considerations and approvals, and identification of the RAC sites, RN participants, and data collection methods. At Easton's fifth step further detail regarding the use of induction, deduction, and retroduction will also be iterated using Crinson's (2007) analytic framework for critical realist research. At Crinson's inductive phase Maxwell's (2012) critical realist qualitative research coding techniques of categorising and connecting were applied. Through categorisation, similarities and differences within data were highlighted, and

data broken into 'codes' to represent the topics. The categories that were developed were connected into patterns with the data contained in each category.

The details comprising Easton's (2010) steps one to five will now be presented in order to explain how the data were obtained and interpreted from raw data to generative mechanisms.

Step one: The phenomena and boundaries

The first step has been to identify the phenomena the research is focused on and in this research 'the case' comprises clinical decision making by RNs in RAC. 'The case' comprises the totality of processes of clinical decision making and is not a single clinical decision or multiple cases of specified clinical decisions. The definition of clinical decision-making by Standing (2007) as ". . . a complex process involving information processing, critical thinking, evaluating evidence, applying relevant knowledge, problem - solving skills, reflection, and clinical judgement to select the best course of action which optimizes a patient's health and minimizes any potential harm" (p. 266) is applied. Clinical judgement (assessing alternatives) and clinical reasoning (solution focused application of nursing knowledge and skill) are considered at a practical level to be integrated as clinical decision making occurs and are therefore incorporated into the definition.

Boundaries provide some specificity for the case regarding what is included and in this research the clinical decisions are those made by RNs within RAC. The environmental context is rest homes and hospitals that are both independently owned and operated and also part of larger organisational groups. The researcher had no control over any events in these settings and was equivalent to 'a visitor' in the rest homes and hospitals.

Step two: The research question

The research questions for this study reflect the aim of providing insight and explanation of the clinical decisions that RNs in RAC in New Zealand make. The specific research questions are:

- What clinical decisions do RNs in RAC make?

- How and why are these decisions made?

Step three: Abstraction of phenomena

Abstraction involves focusing on different components of the phenomena being studied, and may alter as the research progresses. Components of clinical decision making include those identified in Standing's (2007) definition, provided above, which described the phenomena, boundaries and environmental context. The components include the processing of information, ability to think critically, evaluate evidence, apply relevant knowledge and to solve problems. They also include applying clinical judgement and clinical reasoning which are complex intellectual processes. It is evident in Standing's (2007) definition that several courses of action could be taken and it is the "best course of action" (p. 266) which should be chosen so that the decision "optimizes a patient's health and minimizes any potential harm" (p. 266). This comprehensive definition enables confidence in the abstraction of clinical decision making.

Step four: Data sources

The data sources are consistent with case study research and reflective of the clinical setting within RAC. A particular factor in this study was the distinction between participants (RNs and nurse managers) and 'key players' who were not participants (residents). The key ethical considerations shaping participation in the research were self-determination without pressure, fair treatment with no exploitation, and for the avoidance of potential harm.

The participants comprise RNs and nurse managers (also RNs), who agreed to an interview and, or, to being observed in the clinical setting. Residents were also asked for consent by the facility staff before the researcher observed interactions between the RN and the resident, nonetheless they were not participants. Some RNs agreed to participate solely in an interview, some only to participant observation and some to both of these data collection activities. Documentation was also gathered at the facilities. The following table, Table 1, provides a summary of the sources of data.

Table 1

Summary of Data Sources

Total RN participants	Total 14 RNs
RNs in 3 participating RAC facilities	11
RNs independent of RAC facilities	3
Participatory observations	**Total 18 hours over 7 observation periods**
RAC facility 1 RN 1	1.25 hours
RAC facility 1 RN 2	3 hours
RAC facility 2 RN 3	5 hours
RAC facility 2 RN 4	8.75 hours
Interviews	**Total: 13 hours**
RNs x12	Interview range 35-120 mins
Document analysis	
RAC facilities 1 and 2 Policy and procedure manuals	Index with 180 policies in 4 volumes e.g. 'death of resident anticipated or sudden', 'diabetes management RN/carer roles', 'doctors – contacting after hours', 'electrical equipment checklist on admission by RN'
RAC facility 3 Policy and procedure manuals	Index with 40 policies e.g. 'resident review policy', 'managing effective handover', 'writing of progress notes'
RAC facility 3 Online resources	Access to best practice guidelines via local DHB Use Waitemata DHB online resources[8]: *Registered Nurse care guides for residential aged care*
RAC facilities 1 and 2: Resident's care plans include:	'Admission nursing assessment on admission' 'Assessment tools for cultural assessment/falls/continence/pain/pressure ulcer/skin/behaviour/mini-nutrition/activities' 'Care plan within 3 weeks of admission' 'Initial care plan within 4-6 weeks of admission' 'Review care plan each 6/12 or if change in condition of resident' 'Short term care plan – for limited duration problems" (standardised form)
RAC facility 3: Resident's care plans include:	'Multi-disciplinary care plan' 'Initial nursing care plan on admission' 'Full nursing care plan at 3 weeks' 'Review nursing care plan at 6 weeks' 'Rest home level care review at 6/12' 'Hospital level care review at 3/12' 'Falls/continence/pain/pressure ulcer/skin/behaviour/nutrition assessment tools' 'Short term problem flow charts' 'Long term intervention plan' 'Resident goals'
Other documents	Communication book – RAC facilities 1 and 3 Resident assessment review book - RAC facility 3 Daily communication book

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[8] Waitemata District Health Board (2012).

Ethical considerations and processes

Ethical considerations were inclusive of those generic to all research involving humans and included attention to principles of respecting individual rights through autonomy, doing 'good' through beneficence, doing no harm through non-maleficence and attention to equity through justice (Gilhooly, 2002; Kayser-Jones & Koenig, 1994). These principles were enacted through attention to informed consent, privacy and confidentiality, responsibility to research participants and management of potential ethical dilemmas and conflicts. In qualitative research there is a requirement for participants to give valid consent that is competent, informed and voluntary (Massey University, 2015, pp. 8-9).

Specific consideration was given to the participants during interviews in order that they were treated in an ethical way by showing respect for their views, ensuring their communication was understood accurately and that the interview included their views and concerns. Observations of participants by the researcher also entailed ethical considerations and the researcher was mindful of the need to be respectful of the participants' privacy, and right to decline to have the researcher accompany them at any time. The researcher negotiated the observation times with each participant. A further detail was that no harm should come to the participant through their employment and assurance was given that the participants' employer would not have access to any raw data nor to information that could identify the participant.

Ethical considerations also included those applicable to undertaking research on older people. A paternalistic overprotection of elders should be avoided balanced with the recognition that those who are cognitively impaired or institutionalised require the same considerations that would apply to similar people in other age groups (Ministry of Health, 2006, Appendix 6). There are specific ethical concerns that apply to qualitative research involving older people living in institutions due to their vulnerability (Kayser-Jones & Koenig, 1994). These concerns are the

intensification of the ethical concerns regarding autonomy, beneficence, non-maleficence and justice (Kayser-Jones & Koenig, 1994).

Agich (2003) refines the principle of autonomy for institutionalised elders as two key aspects of autonomy are partly or wholly absent. They are self-reliance and independence. Instead Agich (2003) proposes reconceptualising autonomy for this group of people to include dignity and self-expression as both are compatible with increasing levels of dependence and incapacity. Gilhooly (2002) identifies two aspects of consent, in which consent is voluntary and is informed, to be particularly important as these aspects may be affected by a lack of competence or by the vulnerability of the individual living in a residential environment. Competence can be defined in different ways. The basic premise is that the person is able to make a decision due to his or her ability to understand the situation, the consequences of that decision and that the basis of the decision is rational reasoning (Health and Disability Commissioner, 1996).

Research participants should have their privacy and confidentiality respected through non-disclosure of all information gained through the research process, and also retain anonymity in order to protect identifying details (Green & Thorogood, 2014). The New Zealand Health Information Privacy Code 1994, 2008 provides legal requirements surrounding the collection and use of health information. In order to meet requirements it is necessary for the researcher to obtain consent to access and use any health information about residents. Pseudonyms may be used to assist in the provision of anonymity (Green & Thorogood, 2014).

Ethical approval was sought and gained from the New Zealand Health and Disability Upper South A Ethics Committee (URA/10/08/059) (see Appendix A), and noted by the Massey University Human Ethics Committee and the Christchurch Polytechnic Institute of Technology's Academic Research Committee. Details provided to the Committees included standard information to ensure: informed consent by the RAC facilities, RN participants and residents; privacy and anonymity of participants and clinical sites; protection and storage of data during and after the

research project; and social and cultural considerations. In 2013 the Health and Disability Upper South A Ethics Committee subsequently approved a modification so that RNs who were not employed by the specified RAC facilities were also able to participate. These RNs were interviewed only and not observed as their employing aged care facility had not agreed to participant observation or to the researcher being present with the residents in their facility.

Ethical considerations were also given to the researcher's responsibility to participants and to any potential dilemmas and conflicts. The researcher was familiar with this nursing setting which assisted in understanding the context. Responsibility to RN participants included being respectful for their time and their responsibility to their work commitments. Any observation and interview times were those suitable to the participant. If any instance of unsafe practice was observed it was the responsibility of the researcher to discuss it with the participant, with the aim of being supportive, prior to any further action being taken. This information was provided on the information sheet. No instances of any unsafe practices were observed.

Informed consent by the rest homes and hospitals

Contact was made with the rest homes and hospitals when the researcher telephoned and emailed the relevant key people at the facilities and provided information about the study. Ethical approval was gained for the researcher to approach up to six RAC facilities to ask if they would agree to the research. To ensure that 'the case' was not specific to one residential care home or one home ownership model the inclusion criteria was at least one independently owned rest home and hospital and at least one rest home and hospital that was part of a larger organisation. The person with appropriate authority at each organisation signed the relevant locality assessment as required by the Health and Disability Human Ethics Committee. Four rest home and hospitals were approached and RN participants came from three of these four.

Informed consent by the RN participants

Within each rest home and hospital that agreed to participate, the RNs who provide direct care to residents and supervise the caregivers as well as RNs undertaking quality assurance and nurse management roles were invited to participate through a written and verbal invitation. An introductory meeting was held on each approved site with the researcher present to provide a human face to the research as well as information and to answer any questions. 'Flyers' were left at the home (see Appendix B). The RNs were asked to contact the researcher if they wished to participate. If RNs agreed to participate they were asked to sign a written consent form (see Appendix C) which specified the criteria of the agreement and the rights the participants retained. When ethical approval was re-sought to extend the group of RNs beyond the agreed facilities, a 'word of mouth' technique was used and third parties informed other RNs employed in other RAC facilities. These RNs were also asked to contact the researcher and subsequently agreed to participate. They were also provided with details of the study and signed a consent form.

Participants were asked for permission for the interview to be digitally-recorded and transcribed by a professional transcriber. The transcriber signed a confidentially form (see Appendix D). The RN was able to withdraw from the study if they wished though none requested withdrawal.

A specified number of participants was not given although it was expected that between 11 and 26 participants would provide sufficient data. In total 12 RNs participated in interviews with or without observation and two were observed undertaking nursing tasks that involved clinical decision making. These two participants also engaged in discussion about their thinking and decision making processes as well as the tasks they completed. A further two participants agreed to be observed carrying out care along with three residents. Residents were asked to sign a consent form (see Appendix E). The number of participants totalled 14 and the data collected from these 14 RNs provided rich and comprehensive information. Further participants were not

sought due to the large volume of rich data as well as similarity of themes from the latter participants confirming earlier participants' data.

The RNs had between five and thirty-five years of experience as RNs and between three and twenty-five years in the RAC sector. They all worked full time. Many had clinical nursing backgrounds that included acute care and community care. Some were educated in nursing overseas, had completed a Competence Assessment Programme as required by NCNZ in order to register in New Zealand and had not nursed in an aged care setting prior to this employment. Others were New Zealand educated and registered. None identified as Māori and both genders were represented in the participant group.

Informed consent by the residents

Ethical aspects of this study required thoughtful planning alongside discussions with RNs, owners and managers who were in the RAC environment. Discussions with the Convenor of Health at Grey Power (personal communication, January 18, 2010) prior to the research being designed was informative as he was conversant with potential issues for residents. Of particular concern for him was the need for residents to understand what they were agreeing to be involved in. This concern is in keeping with the ethics of informed consent, with the emphasis on both words, 'informed' and 'consent'.

To ensure informed consent by residents the rest homes and hospitals were provided with full details about the project as well as a 'flyer' (see Appendix F) that could be provided to residents. The resident was not a participant but was asked if he/she agreed to the researcher being present with the RN at agreed interactions. As a RN, the researcher was able to participate in these clinical situations in a relatively unobtrusive but potentially helpful way. To avoid any coercion the RN who knew the resident and considered them to be sufficiently competent to consent, discussed the research with the resident prior to the researcher being present. The resident could discuss the information with their family/whanau. The resident was asked to sign

a written consent form agreeing to the researcher being present. Specific details of the resident were not recorded but details of the clinical decision-making were. All field note data were written in an anonymous way. Document analysis focused on specific data about the clinical decisions made (rather than health data of individual residents) via case notes and handover notes.

In order to ensure a resident was considered sufficiently competent to participate, the RN who knew the resident was identified as the 'gate keeper' and would decide whether it was 'appropriate' or 'not appropriate'. This was to provide protection for a potentially vulnerable resident rather than to act as a barrier to the resident's right of autonomy. It was also possible that the resident's level of competence might vary.

Privacy and confidentiality

The RNs who participated were asked for their preference of venue for the interview to be conducted with choice of a room at the facility, the researcher's home, the researcher's work place office or any other venue of their choice. All RNs chose either the facility or the researcher's own home. The researcher's home was offered as a potential venue as travel around the city was difficult in the aftermath of the earthquakes and the researcher wished to reduce potential difficulties for participants. As the RN participants were professional peers of the researcher the option of the researcher's home appeared to hold little risk and none arose. The RNs were assured that their employer would not have access to any raw data or information that might identify them. This was clarified with the RNs who were recruited via 'word of mouth'.

The data includes the interview data, field notes from observations and participant observations, and document analysis. Data were protected through a coding system whereby the participants and residents were known only to the researcher. Codes were used for transcription. Data were protected in a locked cabinet at the researcher's work place. Electronic data have been protected by firewall and passwords (on work and home computers). The transcribing

companies used a protected drop-box system for electronic transfer of data. As required by the Health and Disability Ethics Committee, copies of data will be kept for ten years in a secure location in the School of Nursing, Massey University. The administrator will be responsible for destroying this information ten years after the completion of the research.

As a very experienced RN the researcher is used to dealing with individual's private health information data in a totally confidential way. No identifying features for the RAC facilities, RNs, residents or documents are included in this report.

Cultural and social responsibility

A Māori consultant contributed to this research offering discussion about the intersection with factors which could affect health care outcomes of Māori in the future within RAC. Whilst there was no urgent current health need identified, there was the potential to affect future services for individual Māori who are resident in a rest home/hospital. As demographics change, with increasing numbers of Māori and increasing numbers living longer, there will be a growing need for Māori to be supported in their older years.

There has been an increase in the older population who identify as Māori. In 2013, the total New Zealand population over 80 years of age included 2.8% who identified as Māori and the numbers are estimated to increase from 4,400 to 11,700 individuals between 2011 and 2026 (Ministry of Health, 2015c, New Zealand's Older Population section, para. 1-2.). This is a substantial increase and therefore health needs can be expected to increase along with the need for support and care in RAC facilities.

All RNs including any RNs who identified as Māori were free to volunteer to participate. No participants identified as Māori. The RNs who were originally from international cultural backgrounds were included in all aspects and several agreed to participate. It was evident from observations that a range of ethnicities was present amongst staff. Six RNs were internationally qualified, four from Asia countries and the remaining eight were from New Zealand.

Interviews

The interviews used a semi-structured approach, somewhat between Brinkmann and Kvale's (2015) 'miner' and 'traveller' metaphors, as briefly described in chapter four. The 'miner' does not ask leading questions due to concerns that data may be contaminated and the 'traveller' explores content areas that are unknown by asking questions. The semi-structured interview approach allowed for focused but flexible gathering of data. Some focused and open ended questions were asked using an interview guide (see Appendix G). Examples of questions included 'are there any types of decisions that you find easy to make? Can you give me any examples?' and 'what do you take account of when making these decisions?'

The interviews were digitally recorded and transcribed by a professional transcriber. Interviews lasted between 35 to 120 minutes, and most were in the 60-90 minute range. The transcriber signed a confidentiality form and transcribed using the intelligent verbatim method whereby the text was in accurate readable format with the meaning of the text retained rather than including every pause and unhelpful word such as distracting 'ums'. Verbatim transcription refers to the exact inclusion of each audio-recorded word in the written transcription and is not necessarily required if the methodology directs the identification of themes or a content analysis of data (Halcomb & Davidson, 2006). Accurate transcription through intelligent verbatim was required for this analysis of interview data in order that the researcher remained close to data and did not lose accuracy. The transcripts were all compared to the digital audio recording by the researcher who corrected errors and unclear wording. Two examples of corrections are "it had its own unit called NATA" corrected to "it had its own unit co-ordinator" and "some of these people with sight disorders" corrected to "some of these people with psych disorders". Participants were provided with a copy of their transcript and were asked if they wished to add, alter or delete any aspects. Only one participant requested some data be deleted as it was not relevant to the research questions but was of a personal nature. Other requests were minor wording changes for clarification or completion of sentences.

Participation and observation

In total the researcher spent eighteen hours undertaking participatory observation. The emphasis was placed on being an observer who participated as was appropriate to the situation. As this research used a case study approach and not an ethnographic approach (whereby extensive field observation would be required), the time spent participating and observing was limited and focused on observing clinical decision making situations. Many of the tasks the RNs were engaged in were not amenable to an assistant, and as the usual practice is for the RN to work in isolation from other RNs, the researcher took more of an observational role. The RN talked with residents and the researcher observed, taking a role of paying attention to the tasks at hand and asking questions to understand what was done and why. As this setting is the home of the residents, the researcher attempted to 'fit in' and would talk in general with residents in passing if that seemed appropriate, sometimes initiated by the RN or by the resident. Observations of specific situations occurred only with the residents who had agreed to participate.

The timing of observations was negotiated with the RNs. The researcher spent mainly short time slots at each participating observation session to avoid making it difficult for the RN to have an 'extra' person present for long periods of time. Observations covered morning and afternoon shifts. No RNs were on night shift when interviewed, although one RN regularly worked night shifts and made reference to night shifts during the interview. Field notes were written in note form during the observation time, and were more fully written directly after the observation times. A further advantage of shorter participatory observation times was that the researcher was able to recall more detail from the observation periods. An example of written field notes is "RN goes around all residents and talks to most if awake, says good morning to them, and has a laugh if able to with resident, checks on resident's conditions, eg "how is your mouth? getting better?" "it looks better"; "you sound blocked up" "need to drink plenty of fluids today" so asks

and looks, shows one resident how to work the technology of turning his TV down as they are teaching him this skill. Helps with setting up breakfast if needed" (Field notes: April 2012, p 4).

A strength of utilising participant observation as a data collection method was the access to the real life context and situations, and during the subsequent interview the RN was able to refer back to aspects of clinical decision making that had occurred during observation. This seemed to be a useful strategy as the RN did not need to give as much detail in order to tell the full story. The observation data were also invaluable for the researcher for triangulation. The three RNs who agreed to observation and interview had their practice observed and their understandings of their practice included in the data. Any obvious discrepancies between what the participants said and what they did would have been made obvious, though this did not occur. DeWalt and DeWalt (2011) suggest that there are two potential limitations through bias to observations as the researcher must establish a relationship, and may pay more attention to unusual events rather than the ordinary. In this research the researcher did not know the participants and has limited time with each participant and as the researcher needs to provide a fair report the onus is on the researcher to balance any positive personal views with a critical perspective.

Document analysis

Documentation viewed as data included the two main organisations' policy and procedure manuals, staff communication formats such as handover sheets and communication books, and also resident notes related to clinical decision making. Care was taken to ensure anonymity and no resident names were recorded in field notes. Field notes also became documents as they were in written form.

The policy and procedure manuals varied between the organisations. One organisation provided a manual that comprised four volumes of folders with approximately 180 policies and procedures included. They were relevant for RNs (e.g. "admission RN role"), care giving staff (e.g. "admission role of caregiver") and for all staff (e.g. "behaviour- professional – all staff"). The

level of detail varied with some providing specific details (such as who to contact for a sudden death and who to contact for an anticipated death) and others providing guidance only (such as guidance regarding confidentiality and privacy for residents).

One organisation provided a smaller policy and procedure manual which contained approximately 40 policies and procedures. This manual included flow charts to aid decision making by RNs, such as management of neurological observations including when to contact the GP or when to call an ambulance; and managing an effective handover to caregiving staff. Some policies were relevant to caregiving staff such as the process to request extra incontinence pads for residents and others were specific to RNs such as the management of gastrostomies, tracheostomies and pleural drains. In one organisation RNs also accessed an internet website (Waitemata District Health Board, 2012) which provided guidelines for RNs about 18 conditions commonly found amongst RAC residents, such as cardiac guidelines, delirium, dementia, end of life, falls and urinary incontinence. This information provides evidence for practice.

The communication formats in each RAC facility showed similarities as they contained information for the RNs on subsequent shifts to act on or follow up. Some related to the residents and some to the management of the facilities. Examples included appointment dates and times for residents, reminders to RNs regarding pharmacy or for obtaining medications, the need for the RN to contact family member/s, and plumbing not working. Resident information was also collated in a communication booklet so that specific dates were not overlooked such as the review dates for care plans. These were noted to be important for the facilities to meet the DHB contracts which stipulate time frames for care planning documentation. The three or six monthly reviewing of care plans had specific details noted with the due date of the meeting, family member/s to be involved, team members such as physiotherapist and activities co-ordinator to be included as well as the RN responsible for the meeting.

Residents' notes contained standard forms including the resident's biographical details, some medical information, assessment and risk forms, care plans, activities forms, progress notes for recording daily progress, GP's notes, and previous medication forms. As some residents live in the facility for several years older notes are usually stored apart from the more current file. The RN completed the assessment forms, and the care giving staff wrote in the resident's notes. The RN would direct the caregiver regarding specific documentation to be completed for specific residents at the beginning of their shift. The RN would write in the progress notes if there was a change in the resident's condition or if an assessment or intervention needed to be recorded. The RN did not write in each resident's progress notes each shift and they held the professional responsibility for up to 38 residents.

Triangulation of data

The data obtained through participatory observations, interviews, and document analysis was scrutinised and triangulated. In case study triangulation of data sources is considered an important way of corroborating findings (Yin, 2014). In this study one data source was able to be compared to another and the evidence reviewed for convergence and divergence. Triangulation ensured several data sources provided evidence about the same topic (Yin, 2014).

Some document data corroborated the data from participants' interviews. An example is the documentation through a policy regarding the development of the resident's initial care plan which was corroborated by participants' interview data. The researcher was also able to triangulate the documented data during observation.

Some data articulated by participants converged with data from participatory observation. An example is the discussion by RNs about the need to keep family members informed of any changes in the resident's condition which was corroborated through participatory observation when the RN was observed to phone family members once the GP had completed a consultation.

An example of the triangulation of data is illustrated in Table 2.

Table 2

Triangulation of Data

Interview data	Participatory observation data	Comments
"We've got two residents who can just flick from being well to being unwell. Both have urinary tract problems. But it's knowing that resident. Now, one does show signs and symptoms of behavioural issues, the other no symptoms, he can just go, yeah. So it's having the knowledge and knowing that for people like this we have action plans. So for this person we have an action plan as soon as we know something's wrong we start him on the antibiotics and that works really well. (Participant 12, p. 4-5)[9]	Mr X – unwell – could die soon – lying on back in bed in his room laboured breathing though colour OK not responsive to voice or to being roused. He was up in chair earlier on this shift. RN says this near death situation occurs on and off very suddenly – he just goes. 3 family there – wife son and daughter (or ?one is in-law). RN has discussion with family re what they want to do – supportive talk to them. Will family stay? Or not. They - not sure. Say might be real this time but maybe not. (Observation RN 3, page 2: October 2012)	Same resident situation. RN discusses the resident at interview – and how quickly this resident can change from being fairly stable to being very unwell with few warning signs for the RN to pick up on. Researcher saw the actual situation with different RN during observation period. As one of the residents who had agreed to participate this man had talked to me about his precarious health situation and he was very aware of this happening.

In this example one RN provides data through an interview. This data was triangulated with the data from participant observation when the researcher observed a different RN make clinical decisions about the same resident. This data is relevant to the same clinical situation and so this triangulation is across participants.

Divergence was also noted such as RN interview data providing information that differed. An example is one RN's clinical decision to request antibiotics and another RN's clinical decision to not request antibiotics for the resident for the relative's benefit rather than the resident's. This situation is discussed in chapter eight when the findings of the research are explained.

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[9] Participant 12, p.4-5 refers to interview data from Participant 12 as transcribed on pages 4-5

Step five: Data interpretation

The interpretation of data commenced as soon as data were collected and continued until the data had been abduced[10] through inductive processes to form categories, deduced as theories were applied, and retroduced[11] to generative mechanisms, as explained in the next section. All participatory observation data, interview data and documentation was read and re-read many times by the researcher.

Data analysis

Abduction, induction and deduction

Abduction through inductive coding of data to identify categories was undertaken using categorisation and connection processes. Concurrently a deductive process occurred, through which categories were theorised. All transcripts, field notes and document data were read and re-read several times in order that the researcher obtained an overview of the content. Detailed reading followed with initial impressions of the categories surrounding RNs' clinical decision making being noted. Data were coded and separated into smaller sections that were labelled to represent the content. This process was time consuming and involved matching and separating the data into numerous categories. Connections were made amongst all data. Consistencies and inconsistencies within each category were sought, and often new categories emerged. Categories were refined to represent all data. An example of the categories arising from data are illustrated in the following table, Table 3. Concurrently theoretical knowledge was considered alongside the categories. An example from Table 3 is the linking of categories about family to literature about family, such as the concept of a transition by family members when the resident enters RAC.

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[10] Abduction: data are reinterpreted in more abstract terms though the application of current knowledge (Dobson, 2012)
[11] Retroduction: the mechanisms necessary to generate phenomenon are proposed through theoretically led analysis (Dobson, 2012)

Table 3

Interview Data Forms Categories

Data from interview	Categories
So I tend to make a decision on the basis of, is there something that can be done medically, is this a problem that the Dr needs to know about, what are the recordings that I've taken for the person, what are they showing me. That's where the clinical judgement comes in, if there's nothing new with the recordings, ok what's the next step. Sometimes it might be just monitoring, other times it might be just touching base with the GP and saying well this has happened, but there's nothing too obvious, and having feedback from the Dr. And of course I always have verbal communication with the family, I think it's really important to follow things up with the family, so they're involved in the care and they may have some sort of input (P 6, p. 1)	Assessment of resident needed Use nursing knowledge of medical conditions and treatments Is GP input warranted Interpret vital signs What else to do Monitor them? Contact GP? Provide data to GP GP input important Talk to family Family involvement Family input

Table 3 illustrates the initial abstraction from the raw data to categories. The categories were

theorised and clustered to from nine main patterns, identified in Table 4.

Table 4

Nine Patterns

Pattern 1	the level of competence of the residents which affected their autonomy and thereby the influence of their family
Pattern 2	the role and influence of family in the adjustment to and management of life as a resident and the importance for the RN of an effective relationship
Pattern 3	the broad range of RN knowledge and skills focused on gerontology and inclusive of ethico-legal aspects specific to RAC
Pattern 4	the responsibility for the management of acute, long-term and end of life care often through direction and delegation
Pattern 5	the sense of professionalism by the RN with moral agency being influential
Pattern 6	the roles of staff in RAC with the RN taking a strong management role for caregivers or managing the facility
Pattern 7	the individual culture of each organisation which affects level of authority and levels of autonomy
Pattern 8	The staff and resource allocation, what can be purchased, who decides what can be purchased (including any professional development time for the RNs)
Pattern 9	the importance of the relationship with the GP and responsibility for surrogate clinical decisions

The literature gathered during the initial literature search was used to assist in theorising the categories so that patterns were formulated. These patterns were abstract to the data but representative of the data. The process involved the researcher moving backwards and forwards between the tangible data, categories and the theoretical abstractions of the patterns.

Each pattern was colour coded for ease of viewing. The patterns were found to be useful to the researcher as they provided ways of processing and theorising the range of data.

Retroduction

The patterns were retroduced as the researcher applied reasoning processes to form the postulated underlying generative mechanisms. Three main generative mechanisms were postulated as those that must be present for the clinical decisions to be made. Each generative mechanism may be actualised, blocked or may redirect each other. An example of categories which are theorised to generate patterns and retroduced for postulated generative mechanisms is provided in the table below, Table 5.

Table 5

Example of Category, Pattern, and Generative Mechanism

Categories	Pattern	Proposed generative mechanism
Talk to family Family involvement Family input	the role and influence of family in the adjustment to and management of life as a resident and the importance for the RN of an effective relationship	Professional imperatives: significant relationships with the resident, family and GP

Step six: Evaluation of explanations

In Easton's sixth and final stage of the critical realist case study process an explanation of the conceptualisation of the generative mechanisms is provided. Consideration of whether the explanations are adequate within the current context and time is also provided.

Strategies to promote rigour in this study

Many strategies have been undertaken to ensure a rigorous research process has been applied in this critical realist case study. A strong theoretical framework has structured the research design and process. Critical realism directs this research to pursue the identification of generative mechanisms that lead to clinical decisions by the RNs. Critical realism and case study have therefore provided a strong theoretical base for the research. The research questions, data collection methods and data analysis methods are aligned which further addresses rigour. The research questions ask 'what, how and why' and the data collection methods of observation, interview and document analysis are aligned. The data analysis methods, discussed in the following chapter, are also commensurate ensuing alignment.

The researcher was familiar, but not embedded, in RAC and whilst the likely presence of personal bias is acknowledged none was overtly evident. The researcher's nursing background has ensured a reflexive approach and this reflexivity, combined with ongoing discussions with research supervisors, assisted in reducing any personal bias and promoting rigour in the research design and conduct. The researcher and supervisors paid particular attention to the ethical components of the research as ethical aspects are foundational to a fair research process.

Participation in the research was open to all RNs who were employed in the RAC facilities who agreed to participate, and also to other RNs on an individual basis. Data collection has also promoted rigour as the evidence collected from three main sources was triangulated. This approach provides cross referencing and strengthens the data collected and analysed. Strong evidence is also promoting of rigour and this is evident in chapters six, seven and eight where the results of the study are explained. This thesis provides evidence to support the findings thereby upholding a rigorous and transparent approach.

Summary of chapter five

Chapter five has discussed the critical realist case study research design used in this thesis. The data collection methods of interview, participant observation and document analysis have been described. Ethical considerations have been discussed and also the strategies that have been applied to promote and ensure rigour in the research processes. The application of the framework, described by Easton (2010) using the first five of his six steps, has been supplemented with the inclusion of the reasoning processes of induction, deduction and retroduction as discussed by Crinson (2007). Further supplementation has been through the application of Maxwell's (2012) description of the coding and categorisation of data. Once data were gathered coding was applied, and data categorised to form nine patterns. The patterns were retroduced to propose three generative mechanisms of the RNs clinical decisions.

Easton's (2010) sixth and final step involves explanation of the generative mechanisms. Prior to the explanation of generative mechanisms, details of the clinical decisions by the RNs in RAC will be first be described and discussed as the context for the explanations. Chapter six therefore answers the first research question: what are the clinical decisions that RNs in RAC make?

CHAPTER SIX

Nursing in residential aged care: Revealing the clinical decisions

Basically from the time we walk in to the ward, from the moment we begin our duty we are constantly making clinical decisions although we don't, I think we don't necessarily see them as clinical decisions. (Participant 4, p. 1)

Introduction

This chapter utilises Bhaskar's (1975) conceptualisation of a layered reality to answer the first research question, 'what are the clinical decisions made by RNs in RAC?' The chapter focuses on two of the three layers, 'the empirical' and 'the actual'. The 'empirical' layer is the layer in which the RN participants' experiences and perceptions of their clinical decision making reside. The actual clinical decisions made by RNs in RAC, as observable events, reside in the layer of the 'actual', and are also represented in this chapter through triangulated data.

The third layer, 'the real', comprises the invisible structures and mechanisms that generate clinical decisions and will be discussed in chapters seven and eight. The layer of 'the real' provides answers for the second research question, 'how and why are the clinical decisions made?'. The layering of reality enables consideration of the differences between participants' perceptions, the actual clinical decisions and the mechanisms that generate the clinical decisions.

A brief overview of the key decision making theories will first be reiterated to inform the discussion of the findings from the first research question: What are the clinical decisions the RNs make? The layers of the empirical and the actual are evident although the empirical layer is found to dominate in this thesis due to the research design through which participants provide interview data. The layer of the actual is present in the documentation which also was data. Following this overview, the clinical decisions made by RNs are described using a trajectory from

the resident's admission to the residential care facility, to their life in the facility and their death. The life trajectory of the resident provides a conceptual framework to structure the data.

Clinical decision making theory

Clinical judgements and decisions, as discussed in chapter two, are influenced by several factors. Hammond's (1996) three decision making continua highlight cognitive, task inducing and surface-depth continuums that are influential in clinical decision making. The discussion within this chapter will illustrate that the RN participants apply analysis, quasi-rationality and intuition in their cognitive processes when they make clinical decisions. Many of these clinical decisions are documented in the care plan. The nature of clinical decisions to be made over the duration of a resident's life, also illustrates a range of analytic, quasi-rational and intuitive promoting tasks. The surface-depth continuum is illustrated as the RN and staff get to know the resident after their admission. Initially data may be superficial and incomplete, and as the RN spends time observing and gathering ongoing assessment data the depth of data increases, further informing the clinical decisions.

A further factor influencing clinical decisions is the strength of the decision makers who use their experiences despite missing information, time constraints, changing conditions and vague goals (Klein, 1998). Klein (1998) considers sources of strength lie within the development of expertise and include the use of pattern matching and mental simulation, the ability to see the invisible, paying attention to detail with awareness of the whole context, ability to identify what 'should' be present or absent, and a mental picture of what it 'should' be like. The discussion that follows will illustrate how experienced RNs implement these strengths and the positive influence they have on resident outcomes.

Reason (1990, 2008) discusses the role of humans in making, avoiding or recovering from errors. He considers that errors are common, and may occur through action or inaction. The consequences of error range from none to substantial through a chain of actions or inactions.

Errors include memory lapses, rule based mistakes or knowledge based mistakes. The subsequent discussion will illustrate these factors. Concern is expressed by RN participants about both consequences of action and inaction and the dilemmas created through the need to decide which of these clinical decisions to make. In some situations action could lead to a detrimental outcome for the resident, however inaction could also lead to a chain of events that are detrimental. RNs also described situations of rule and knowledge based mistakes.

The empirical and actual layers of clinical decision making

The descriptions of the clinical decisions that RNs in RAC make are presented within three significant time frames. These time frames are: firstly when the resident initially moves in to the residential care home; secondly during the resident's life in the rest home and; thirdly the time near the resident's death. Most clinical decisions are focused on meeting the resident's needs and deficits as well as the promotion of safety and the management of risk factors. The Age Related Residential Care Services Agreement (Ministry of Health, 2015a) includes service specifications and details of the required assessments to be made of the resident and care planning requirements for each person whose residency is subsidised by the local DHB.

First time frame: Resident enters residential care

The clinical decisions made by the RN are instrumental in assisting the resident to receive appropriate care on admission to a residential home. Admission involves a major life transition for the resident and also for their spouse and family members. This move may represent the culmination of many losses in their lives, and while welcomed by some, is not welcomed by others. The RN makes clinical decisions about the specific care to be provided to promote the new resident's abilities and to balance their deficits. These clinical decisions may be implemented by caregivers who work under the delegation of the RN, or may include the knowledge and skills of the RN providing nursing care directly to the resident.

The clinical decisions are represented in the documentation of the initial care plan and subsequent full care plan. The Age Related Residential Care Services agreement (Ministry of

Health, 2015a) requires the initial care plan to be completed within 24 hours of admission, to cover up to the first three weeks, and the subsequent full care plan to be completed within three weeks of admission. The assessments of the resident which are undertaken or initiated by the RN inform the development of the care plan. The care plan reflects the clinical decisions the RN has made within the RN scope of practice (Nursing Council of New Zealand, 2007).

Assessments and assessment tools

At the time of data collection for this research, the RNs' clinical decisions were based on a full range of assessments of physical, psycho-social, spiritual and cultural aspects of the resident, as stipulated in the earlier versions of the Age Related Residential Care Services agreement. In 2015 the assessments required include those made on admission through direct assessment of needs (Ministry of Health, 2015a, Section D16.2.a) and from the most recent interRAI home care assessment (Ministry of Health, 2015a, Section D16.2.b). Another recent requirement of this contract is that the assessments are also based on information from the interRAI Long Term Care Facilities assessment (interRAI LTCF) that must be completed within 21 days of admission (Ministry of Health, 2015a, Section D16.2b). The assessments include assessments of the resident's abilities, levels of independence, needs and deficits, as well as personal preferences, habits and routines (Ministry of Health, 2015a, Section D16.3.g). These assessments provide the data on which the clinical decisions are made to address the personal care, health care, and rehabilitation needs of the resident and the actions staff should take to maintain their functioning (Ministry of Health, 2015a, Section D16.3.h). If the resident is diagnosed as dying, these specific needs are also included.

During this research process, the documentation reviewed in the triangulation of data confirmed that this core information is presented through the care plan forms which include a representation of the multifaceted aspects of the resident's life. Different documents were used at each residential home although the core information is consistent. Assessment tools and care plans vary in their presentation and they all document the RNs' clinical decisions. Many care

plans are pre-formatted. One participant described the assessment and care plan process as follows:

> *. . . when the resident comes in we do an initial care plan with the family and the resident. From that we build a full care plan review and a lot of our decisions on that care plan take into account if the resident is able, what the resident wants for their cares, what the family's expectations are for their cares, medical direction for their cares. So we have to consider everything there. And from that we do all the assessments like the oral assessment, pain assessment, continence, pressure area, falls risk, nutritional risk assessment. When they come in that's our base for further assessments down the track, that's our base. And based on those assessments we have to decide things like what type of mattress they're on, if they need a walking aid what type of walking aid, do they need a restraint or an enabler which is a whole different assessment we have to go through, so I'll come back to restraint and enablers. It decides what diet they're on, it identifies what likes, dislikes, meal size, how frequent snacks are, whether they need supplements, like Fortisip, Ensure, do they need Polycal on their breakfast, do they need high protein drinks. What else do we need there? Continence assessment, we do a week's continent assessment to find out their continence issues and based on that assessment is how we decide on what continent product to use. (Participant 12, p. 1-2)*

The assessments are therefore detailed. The analytic nature of cognitive processing (Hammond, 1996) when the RN admits a resident is evident in the excerpt above in the use of the tools, including risk assessment tools. One example is the assessment of the resident's food and fluid likes and dislikes, meal size preference, and intake of snacks. These assessments provide some of the data required for the RN to decide if supplements or extra food is required. The clinical decision includes this data along with assessments of the resident's weight, body mass index and medical conditions, all of which are analysed to create the plan for the resident's food and

fluid intake. The quasi-rational nature of the RNs cognitive processing is also evident as the RN must synthesise knowledge of the resident's actual abilities as observed by staff, the resident's desires for their care, the family's expectations, the medical directives, and also gerontological nursing knowledge to craft an effective care plan. Each source may provide divergent information, aims and expectations and the RN is required to synthesis the information to develop a comprehensive plan that is agreed to by the resident and family members. Analysis and synthesis of data in this creative process illustrates quasi-rational cognitive processing.

The risk assessments that participant 12 in the excerpt above refers to are made up of a series of specific assessments and decisions. An example is a falls risk assessment which includes analysis of the resident's history of falls and assessments of current medications, cognitive abilities, vision, mobility, activities of daily living, nutrition, continence, insight, judgement, ability to follow instructions and levels of confusion and agitation. The RN makes clinical decisions when completing these individual assessments that make up the falls risk assessment and a numerical rating is allocated to each finding. A numerical calculation is then made through addition of individual scores to identify a low, medium or high risk of the resident falling.

Applying Hammond's (1996) task inducing continuum, the risk assessment tools induce analytic tasks. The RN's clinical decisions then identity the actions that should be taken in order that the risk may be averted or reduced for the individual resident with their particular combination of factors that contribute to their level of risk. The clinical decisions the RN makes that specify particular actions require quasi-rational reasoning processes as synthesis is required for the RN to develop the individual plan for each resident. An individual plan is thereby created to address the risk of falls. The format of other risk assessments such as pressure ulcer risk is similar as data are gathered by the RN through a variety of assessments and the resident's level of risk is identified. The level of risk then directs specific interventions which will vary according to the individual resident and are based on the knowledge and skill of the RN. The aim of assessing and

making decisions to avoid known risks is to avert a chain of errors commencing with detrimental outcomes to the resident.

Registered nurses complete assessments including physical assessments of all body systems and mental health abilities and deficits. The subsequent clinical decisions the RN makes include the level of assistance the resident requires to manage their activities of daily living, such as whether they can manage their own hygiene needs, continence needs, eating and drinking, mobilising and preservation of skin, and their use of aids such as hearing aids. The depth of data that is available on admission could be enhanced as the depth of assessments was noted by several participants to be important to provide a baseline from which any alterations in the resident could be noticed and identified. The importance of the RN being able to document updated and current detailed assessment data on admission is described by one participant.

> We get just the handover from wherever they come from, like they're transferred from a hospital . . . or from another facility. We just get the handover and that's basically what we copy in their notes, nobody ever does the full assessment, and who knows those assessments have been done like three, four years ago. So they should probably change by now and also it will be helpful if we do it ourselves so at the moment they come in we do a head to toe assessment and yeah that should be our base line. (Participant 1, p. 15-16)

The depth of data required for clinical decisions is comprehensive in order that the RN develops an effective care plan and signals the need for a high level of clinical skills amongst RNs making these clinical decisions. Within New Zealand the current implementation of the interRAI tool, as the assessment tool for all residents, is expected to provide greater depth of data which is also expected to be current. As the tool is being implemented at the current time the effectiveness of this change on the quality of the documented care plan is not yet evident. As it is in e-

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documentation form, and is very comprehensive, the frequency with which it is updated and utilised is yet to be seen. What is evident is that sound clinical skills are required.

> *And the clinical side has developed and . . . aged care's developing very rapidly where*
>
> *nurses need good clinical skills. (Participant 2, Int. 1, p. 4)*

Psycho-social needs are also addressed to identify the activities the resident may wish to engage in, their interests and hobbies and the subsequent clinical decisions indicate how the resident may prefer to spend their day. Spiritual needs are assessed and may include the person's values and the beliefs they hold. The clinical decisions may include actions to ensure the resident has specified time to address their beliefs and values. An example the researcher observed during participant-observation was specified time for the resident to practice their yoga and the resident requested not to be disturbed during this time. Cultural aspects influence clinical decisions if they are known, such as cultural practices. The care plan must also include allied health professional input such as a physiotherapist and also an assessment of activities by an activities staff member.

The information that is available about the resident on admission is also very important to enable the RN to document an effective and safe care plan in order to avoid detrimental outcomes to the resident. The surface-depth continuum (Hammond, 1996) affects the clinical decisions and outcomes for residents. There is more likely to be an adverse outcome if only superficial data are available, or data are omitted. Family members may make the assumption that all relevant information has been handed over from one agency to the residential care home. To the contrary, an effective handover does not occur in all situations, as illustrated by one RN participant.

She had a fracture, it was a high fracture and she came across with an Aspen collar[12] on. She'd actually had bed rails and been monitored in the hospital but we didn't get that discharge letter, we didn't get that discharge information, just that she was fine. And so we brought her to us, had everything in place for her, and she fell out of bed the first night she was here with the Aspen collar on. So we then had to send her off, and the son said "well she had bed rails in the hospital", well. So that's a problem for us, is sometimes not quite enough information coming from the hospital. (Participant 8, p. 11)

In the example above the omitted data (Klein, 1998) led to an unsafe situation as the RNs clinical decisions were based on incomplete data which lead to an adverse outcome for the resident. Reason (1990, 2008) described the way in which an error could be retrieved (in this situation the resident or a family member could have requested bedrails on admission) or could lead to a chain of action with significant consequences, as in the excerpt above. The RN did not have all relevant data to make the appropriate clinical decision. Deeper data (Hammond, 1996) was obtained after the detrimental event had occurred and the RN could subsequently include actions in the care plan to avoid or reduce further risk.

Care planning

The full range of available assessment data is utilised by the RN to make clinical decisions about whether the resident is experiencing deficits or needs that require interventions or require monitoring. The resident's actual and potential deficits and problems are therefore identified through the clinical decisions of the RN who decides, in conjunction with the resident and family members, on the goals to be set to rectify the deficits and details about the interventions that are required to balance the deficits. Strengths are also to be considered and included in order that the resident maintains current abilities and to promote enjoyment of life.

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[12] An Aspen collar is worn to restrict neck movement and is used after surgery, neck injury or to manage arthritis

Documenting the care plans take much of the RNs' time as they are comprehensive and are a requirement of the RN role. The RN is responsible and accountable for the content of the care plan. They are detailed and full as one participant noted as below:

> *. . . we write 17 page care plans. Most facilities will be about the same. And you end up sitting back thinking does anyone else ever read them? and I don't think they do. (Participant 8, p.6)*

This excerpt has illustrated that while the RN accepts that full documentation is required and is a component of the RN role, it is also considered a somewhat futile process as the impact of the written document on care provided is not significant. It also signifies the verbal nature of handovers to other RNs and caregivers. Verbal handovers are one way in which errors are recovered or avoided as the details able to be verbalised are more explicit and therefore more helpful than those able to be documented. For RNs the verbal handover is common practice as it is also quicker than reading all residents' care plans each shift especially when this time is not available.

Some of the participant RNs stated that the time required to complete the documentation was not always provided by the organisation.

> *But you don't actually have time to sit down and do a short term care plan . . . Yeah I think the most that we can do, because we've got limited amount of time is just the progress notes. Yeah and then, and probably a little bit of handover. (Participant 5, p. 34)*

In the excerpt above the RN participant prioritised the time that is available.

> *Sometimes we come in our own time. (Participant 10, p. 34)*

In the excerpt above the RN returned to the facility unpaid on days off in order to complete documentation. Requests for extra resourcing were not met.

Family involvement

During the time of admission the relationship between the RN, staff, resident and family members is developing, enhancing a smooth transition process or being a point of tension. The planning of both the initial and full care plan is a process that may take some time for sufficient depth (Hammond, 1998) and involve the clinical decisions by the RN which may be modified with input from the resident and/or family. Clinical decisions must be reviewed and altered as necessary. The time after admission may be tense for family members as they adjust to this major change in their lives and their concern for their family member may influence the staff relationships and development of the care plan. An emphasis on 'getting it right' involves the RN being persistent in the initial stages of the resident living in their new home.

> *I did the care summary, printed it out and put it in the file, but then I gave it to the family, they wrote all over it, gave it back to me, I typed it up again . . . So we tweaked it and we got that right. Now things were still very tense and weekends particularly tense because the staffing's not so good, I'm not around,* [unit co-ordinator's] *not around, the coordinator. And they used to come to me on Monday . . . so it was stressful stuff. But she fractured, she fell on a Sunday . . . Anyway, something happened . . .* [acute hospital ward RN] *talked to the family about what had been happening here and I know said some really, really positive stuff around the care that Mum had been getting here. And they, like they just completely changed, it's been fabulous since she's come back and it's given us some breathing time, nobody's as scared anymore. The daughters haven't been to see me except for positive meetings, so it's taken about three months but that was a real team effort. (Participant 2, Int. 1, p. 8)*

In this excerpt it is evident that time and effort on the part of the RN as well as the family members were necessary to develop a care plan that was acceptable to all parties. After the resident had a fall the expected criticism from family members did not eventuate and the

resident and family appeared to have made a more successful transition. The relationship had been enhanced through the process whereby the family accepted that the RNs were reviewing and revising the care plan, to get it 'right'.

Resident admitted to unsuitable facility
The RN may also make clinical decisions about the appropriateness or inappropriateness of a particular resident being admitted to the facility. Four RN participants described incidents where they had experienced receiving residents in the hospital environment who were in need of secure dementia level care. These RNs had to make clinical decisions in order to manage these situations which may have been distressing to the new resident, and were distressing to staff and other residents. They applied skills commensurate with expertise (Klein, 1998) by evaluating the admission as a whole and considered that the resident was not able to receive the appropriate level of care in the hospital environment. The RNs were instrumental in ensuring the resident moved to a more suitable facility. In the first excerpt below one participant described the difficulty she had making the clinical decision that this new resident needed to move to another facility and the difficulty she had accessing assistance from other services to facilitate this review of placement. In the second excerpt she also described the disruption to the other residents.

> *We had a man who was transferred from a dementia unit in a rest home to here which*
>
> *is not a dementia unit - we're just a plain old hospital. And the man was blind. He had*
>
> *dementia – he had Alzheimer's dementia - and he had a bladder problem. So he came to*
>
> *us early in the morning on a Friday. I asked for him to come early because you've got*
>
> *paperwork, drugs and having to sort out on Friday. So he came with a caregiver and his*
>
> *bits of paper but he had no family member. As it turned out the family member hadn't*
>
> *been informed that he was coming this early in the day. She arrived at four o'clock in the*
>
> *afternoon. . . . He came here. He could not sit still. The poor man was utterly demented.*
>
> *He was in a place he didn't know, people he didn't know, no support. And he was on the*

go the whole time from the minute he came. The girls were, the staff, were beside themselves trying to make sure he was safe. After lunch I thought this is not right. So I made a decision in my head that this man, his placement was wrong. So I contact the GP . . . I think five people I could not get . . . In the end I did get one of the clinical nurse specialists . . . "The only option you've got is to send him into hospital." So then I had to make a few more clinical decisions as to how I was going to get him there, into A&E. Now, he had been piddling a lot, like every five minutes. Honestly, he's in and out of the toilet every five minutes . . . So they kept him overnight and the doctor . . . said, "Right, give me the low down." So I did. And I said, "I really believe this placement is the wrong placement." And he said, "What do you think should happen?" And I said, "I think he needs to be reassessed for a D6 hospital but certainly we cannot deal with the man here." It turned out he had a chest infection. He did not have a urinary tract infection but he had severe bladder spasm and at least they dealt with that through the hospital admission. And then he went to a D6 unit. But that was another, going against the tide, sort of decision. (Participant 7, p. 19-20)

. . . another thing that he had done was he'd gone into the dining room - you were talking about other patients - he'd gone into the dining room, undone his trousers and piddled in front of everybody. Upset those - and I thought, this cannot happen. And he was piddling in the waste bin. He was blind. He didn't know what he was doing. So that was where other residents were involved. They were appalled that anybody should do that and there were visitors as well. So that did influence in a way, just to answer your question, the decision, the whole package. (Participant 7, p. 21)

Klein (1998) described how experts see aspects of practice situations as whole situations and the previous excerpt illustrates how the RN considered many aspects in order to make the clinical decision to initiate the resident transferring out of this residential care setting on the

same day he was being admitted. She considered the effects on the new resident, the staff, other residents and visitors in the facility, the care that could be offered in this hospital and recognised the incompatibility of the needs and available resources. The clinical decision took time to make as the RN gathered more information over the day and a zone of uncertainty was present during this time before a zone of certainty developed about the best course of action to take. This RN described the difficulty she then encountered accessing help to facilitate the transfer.

Summary of the resident entering residential care
To summarise, analytic cognitive processing by the RN was evident when completing assessments of the resident and quasi-rational cognitive processing was evident when interpreting these assessment findings and making decisions about appropriate actions. The task inducing nature of completing very detailed care plans promotes a combination of analytic and intuitive RN cognitive processing. The surface-depth continuum illustrates that data are incomplete on resident admission, and full assessments of the resident's strengths and deficits take time for the RN to complete. Missing data on admission may lead to a situation of risk as appropriate actions are not implemented. If a resident's needs are incompatible with the services available the expertise of the RN may initiate a series of clinical decisions that lead to reconsideration of the placement thereby averting an unsafe situation or a cascade of events that culminates in an adverse outcome for the resident. The RN takes time while in a zone of clinical decision making uncertainty until enough data are gathered to make a clinical decision within the zone of certainty.

Second time frame: Resident's daily life
Once the resident has made the initial transition to living in the residential home, and the care plan has been established, the clinical decisions made by the RNs are ongoing and focus on monitoring the resident, noting if there are any changes, and making clinical decisions about these changes. Clinical decisions include the health assessments to be completed, how to

interpret the health assessment findings and what subsequent actions should be taken in response to any changes. These actions may include monitoring or intervening. Documentation of all changes and interventions is expected.

The Age Related Residential Care Services agreement (Ministry of Health, 2015a) stipulates that the resident's care plan must be reviewed each six months or sooner if there are changes in the resident's health status or level of dependency. If the resident develops a health issue, a short term care plan is commenced to address short term problems such as infections, decreased mobility following a fall or a skin redness that has the potential to develop into a pressure ulcer. A resident may have several short term care plans. During triangulation of data for this research, the documentation reviewed revealed that the residential homes provide pre-formatted short term care plans for common conditions such as for a skin tear, urinary tract infection or chest infection. Once the problem resolves the short term care plan is evaluated as complete.

The clinical decisions the RN makes about the resident's daily life will now be discussed related firstly to relatively stable daily life and secondly to alterations in the resident's health status.

Stable daily life
The RN makes many clinical decisions about the care of residents including the specific cares to be provided by RNs or caregivers, the involvement of family members and the involvement of medical personnel. Each resident must have a routine six monthly medical review by the GP. The care plan must also be reviewed. The RN needs to prioritise the residents, apply a wide range of gerontological knowledge and skill, and know the resident sufficiently to notice and interpret subtle changes that inform these reviews.

An essential clinical decision making skill of the RN is prioritising. The RN decides which residents should be seen by the GP and must prioritise residents' need for medical assessments and interventions. General practitioners usually visit on a weekly or twice weekly schedule and have limited time while on site. There is pressure on the RN to make correct clinical decisions as a

more complex and expensive process would be required to access medical assessments 'after hours'. Another prioritising clinical decision is to identify early each shift which residents need to be assessed and monitored more closely by the RN, that is 'who to worry about most'. Caregivers are not skilled assessors and so the RN needs to make these observations themselves. A further prioritising clinical decision focuses on whether to follow the 'rule' of the policy, for example by taking the required monthly blood pressure recording or whether to override the 'rule' if the resident appears to resist. It also entails making the clinical decision about which medications to prioritise (such as analgesia) when the resident has little insight and refuses all medications, but could be encouraged to take one or two.

The clinical decision tasks related to the residents' care are comprehensive and cover a wide range. The clinical decisions include the application of gerontological knowledge related to nutrition, hydration, weight, bowel management, mobility, wounds, skin conditions, pressure ulcers, continence, pain, activities of daily living, challenging behaviours (such as managing aggression or resident assault), management of cultural practices, and medication management. Other decisions relate to diagnosing chest infections and urinary tract infections, and to the management of specific medical conditions such as shortness of breath from chronic obstructive pulmonary disease. All are based on the assessments that the RN makes. These clinical decisions tend to be familiar to experienced RNs in this clinical setting and fit in to known patterns. The RNs often make these clinical decisions in isolation as other RNs are not readily available, although some are managed through discussions or consultations with more senior RNs.

The RN is the health professional who knows the resident's patterns, usual behaviours and makes links between past and present situations. Knowing the resident over time is considered to be central when making clinical decisions as subtle changes can be compared to usual patterns and interpreted more effectively. Knowledge of the resident's history is also considered useful. The RN needs to provide the GP with details of the resident's health and health problems.

The ability of the RN to put together the pattern is significant in the overall decision making process. The pattern is based on assessments, noticing changes, and interpreting these in the resident's health context.

> *I think being able to give the observations of what I see clinically, happening, over a period of time, the changes, being able to produce more than just 'Mrs B's got chest pain', it's being able to give a history, a present scenario. It's being able to hand them [GP] something that they can work with because we often hold that knowledge. They hold the immediate. That's how I see it . . . to be able to say this is what we've noticed, this is the history, this is what is happening now. So I see our role as really important, as being able to see the whole picture and being able to assess the whole picture. Not just, the clinical decision isn't just based on what is happening at that time, it's based on a lot of other things, yeah. (Participant 4, p. 3-4)*

Knowledge of the resident is also important as their frailty and complexity mean that some significant changes are only be able to be identified through noticing subtle changes. Rest home residents and hospital level care residents often experience a progression of their dementia, making assessments more difficult.

> *. . . residents are so very complex and frail, so that first-hand knowledge of what's being presented to them [RN], and being aware of those nuances, those changes happening, is very important in this setting . . . Yes, it's a hospital setting. Yeah. And even more frail in the rest home because they have the potential to change so quickly. A lot of our rest home residents have an underlying short term memory loss or underlying Alzheimer or dementia happening. (Participant 9, p. 3)*

Another participant described the importance of noticing if the resident swallows in a different way, which could only be identified by a RN or caregiver who knows how the resident usually swallows. In the situation of the resident with dementia the RN interprets the signs that are

present in the context of the resident. Assessments that can be significant are the resident not eating, grimacing, looking strained, mobilising differently, or behaving differently such as aggressively or appearing withdrawn. The RNs skill of observing is considered important as many residents at rest home and hospital level of care, as well as dementia care, are not able to verbalise pain or other concerns they are experiencing.

> *An example was yesterday we've got a lady whose dementia pattern is changing, not in a way that's unusual for dementia, but it's a change for her so that tells us something. Um, that tells us, that then affects what decisions we might make around what we are doing for her or whether we need to look for an underlying illness, whether it's a temporary change, or whether that going to be how her dementia progresses . . . It's a usual complex decision . . . It's a usual decision because dementia is relentlessly progressive. And that means there's going to be changes. It's a complex decision because those changes can occur because of a variety of things, and it might be pain based, it might be disease progression based, it might be an underlying infection based, it might be just a very emotionally based phase. It could be a number of things that you then need to look at. (Participant 4, p. 4-5)*

> *. . . so in my head I'm making a decision, has this been a seizure? was there anything noted? or is she actually just sleeping, is she having a lie-in?. . . you've recognised someone in pain . . . that becomes a little bit more complicated as they can't necessarily express their pain need. So you have to start making decisions around, what am I observing, am I observing somebody that might be in pain, what's happening, what are the indicators that would make you think that, so there's this sort of like a track going through your brain the whole time while you're assessing. (Participant 4, p. 1-2)*

As dementia is progressive, a complex clinical decision is 'usual' due to the complex nature of what could be causing the changes in the resident's behaviours. Understanding the cause of

aggressive behaviour also assists the RN to make clinical decisions to avert further aggressive behaviour and to meet the unspoken needs of the resident.

> *But these people, the residents here are quite easy to settle, you take them for a walk and they forget about attacking you, or . . . Yes divert them and make them calm and they're quite easy to distract, so yeah. It usually works so and if you know what works so if you know the patients well enough to know what makes them forget about stress or yeah. Or if you know that if they're acting this way then they must need the toilet, sometimes it helps to know them. (Participant 1, p. 13)*

In the excerpt above both knowing the residents and being able to interpret their behaviours with a likely cause enables appropriate actions to be taken. Once a change in the resident is interpreted the RN needs to make a decision about what to do next. The RN could initiate specific interventions directly, discuss changes, symptoms and treatment options with the GP, or arrange for a medical review with the GP.

Family influence

The overarching philosophy of nursing for the RNs in this context is person centred and relational with communication with the resident and family members considered paramount. Relational aspects include the promotion of autonomy, the therapeutic nature of the relationship and recognition of the life the person has led prior to the time of care (Slater, 2006). The family members may be central to the person's prior life and incorporated in relationships with staff through a family centred care focus.

Family members are integral to the clinical decisions made. The RNs make clinical decisions about how to create and sustain a relationship to support family members, although as described by the participant below this could be problematic. If the family member is considered unrealistic it also creates extra work for the RN, as described in the excerpt below.

You have to have a good relationship with them, and a lot of what we do sometimes it can be just talking to them, and involving them and having the discussions. I always have the philosophy with dealing with families, if it's a problem they need to be able to tell us, because we can't fix it if we don't know it's a problem. And it's often, in this older generation we have a lot of, there's a lot of stuff that's gone on in family backgrounds, people and tensions that make it a bit tricky and you have to walk the mine field really, 'the egg shell waltz' as we would call it for families, so you don't step on someone's toes or upset someone, or saying the wrong thing can cause chaos really . . . I think we do need to be accountable for everything we do, but families do want a greater involvement, and some of them are realistic and some of them are completely unrealistic, and it's the unrealistic ones that take a lot of time, and a lot of energy, and a lot of effort into just making sure they do feel ok. (Participant 8, p. 7)

In the excerpt above the participant describes one of the challenging areas for RNs in this sector, the relationship with the family members. The dynamics within the family endure over time and may make it difficult for the RN to develop an effective relationship with all family members. The resident may also articulate information to their family that is important for the RN to know and so the family may act as an advocate or intermediary for the resident. The importance of generating a trusting relationship was also articulated by other participants. If trust is developed the RN is able to make clinical decisions and report subsequent actions to the family members.

And also knowing the family. And they've got trust in you that they know when you ring them up they go "well we know you're doing the right thing", or "thanks for letting me know" or "we trust what you've got to say". If they've got a problem they'll come and see you, and they know you'll get it sorted. (Participant 11, p. 8)

As noted above this trusting relationship creates the environment whereby problems can be resolved as family members would report them to the RN.

Maintaining an effective relationship with the family includes the RN making clinical decisions about what information to tell the resident's relatives about their health. One RN participant described ensuring family members were informed of GP visits and the outcomes of treatments. This communication is the policy in this facility and promotes effective ongoing relationships with family members.

> *And keeping them informed. So even if it's just a simple review, like he's been on antibiotics and he has improved, but he has been reviewed by the GP, so you have to ring them and say, "He has been reviewed, he's improved." (Participant 10, p. 13)*

There are also situations with the potential for conflict between the resident and the family if the resident wishes for a course of action that the family members do not agree with. The RN makes clinical decisions about managing this family conflict and respecting the resident's autonomy.

> *Yeah being very aware of the family dynamics. Ultimately it's the resident's comfort that is our concern and sometimes family dynamics can interfere with that. . . . If a resident doesn't want something but the family member is very insistent to the resident to do it, or have it done and the resident just does not want it. And that's our, my place to step in and say, "I understand where you're coming from but I'm sorry, it is ultimately so-and-so's decision not to have that done." And this can range from follow-up appointments to do with cancer or things like that. Residents, like one of our residents who has declined any further cancer appointments the family sort of, family and friends sort of struggle with that, but it is his decision and I respect that. (Participant 12, p. 10)*

The RN above supported the resident's wishes when the resident was able to make autonomous decisions about his care. There are clear legal and ethical requirements for autonomy to be respected. When the resident does not have autonomy, a family member may hold the power to make decisions affecting their health and wellbeing on behalf of the resident, through an

enacted enduring power of attorney (EPOA). This is a legal process. The RN below was able to facilitate a successful resolution respecting the power within the enacted EPOA.

> *The family were involved and when they found out she was having* [subcut] *fluids they said "no we don't want that". So I said to the GP the family don't want this, so we need to stop. And the daughter had power of attorney for health and welfare, she knew her mother wanted to die, and so she said I don't want anything that's going to have any part in prolonging her life, so I just let the GP know. (Participant 7, p. 11)*

In the situation above, where the family member held an enacted EPOA, the daughter's wishes were upheld and passed on to the GP by the RN so that treatment was discontinued. More complex clinical decisions are situated amongst family members who have different expectations and requests of the RN. These situations can be challenging for the RN.

Family members were also approached by the RN if there was a resource that the RN considered warranted and the residential home did not provide. This situation occurred in some facilities, although in others the RNs stated they did not have difficulty obtaining the resources they needed, in particular if it was related to safety or to averting risk or criticism from family. Family members were approached to provide specific skin creams, pressure relieving cushions or more expensive wound dressings that were not provided by the facility. If the family were not able to provide the resource, the RNs attempted to obtain it through a direct request to the managers. If the manager was not receptive and denied the request the RN used an indirect measure such as ordering extra stock, although they considered this was unacceptable as the resource should have been provided. The Age Related Residential Care Services agreement (Ministry of Health, 2015a) stipulates that simple wound dressings must be provided, which provides the facility manager with the ability to deny a request for a more expensive dressings such as carbonate dressings to absorb fungating wound odours.

The clinical decisions about the resident's daily life are made by the RNs and many are implemented by the caregivers. The caregivers are expected to form relationships with the residents. The RN must assess the needs and stipulate the cares to be completed by the caregivers and then oversee these cares as the RN participant in the excerpt below articulates.

> *All the caregiver . . . they have a very limited scope of knowledge, they have what we teach them, so. They are, extremely valuable role in the facility by doing the ADLs, activities of daily living, but . . . the assessment, the skincare, the emotional side, the whole rest of the gamut is the registered nurse, it's not the caregiver . . . It's all the medication management, it's the wound management, it's the physical, psychological, emotional wellbeing of the resident. A caregiver will form relationships and should form relationships with their residents, so that they have that rapport and they have that comfort with knowing, but it's the registered nurse that's got to oversee that care. (Participant 9, p. 12)*

The RN is required to delegate the cares to the caregivers. One RN was observed during an observation session to provide three successive handovers to caregivers as they started their shifts at different times in the residential home (7.00 a.m., 8.00 a.m., and 8.30 a.m.). The RN gave specific direct instructions to the caregivers about the actual cares they were to provide. She then asked them questions to ensure they had understood what the instructions were, particularly as language barriers were present.

> *RN asks staff there what she will be checking up on, states that she has eyes in the back of her head, and will be watching in a vigilant way how residents are handled. Specific residents named and instructions for caregivers to do them in pairs (i.e. toilet, wash and dress and get them up) and to not struggle on their own. If resident is an octopus then caregivers to watch themselves, do in pairs, and be careful with the resident. RN says*

manual handling incidents should not happen. Residents can develop wounds as a result

of poor handling, and these should not happen. (Observation RN 3, page 1-2: April 2012)

The reference to a resident being like 'an octopus' refers to the behaviour of some residents who may hold onto the caregiver meaning the caregiver cannot move or is hurt when trying to assist the resident to move. Caregivers may be physically hurt by the resident and so working in a pair provides some protection for the caregiver. The caregivers were considered to be very important in the delivery of the cares delegated to them. Nonetheless they do not hold knowledge underpinning the cares they provide to the residents, which the RN holds. The focus of the caregiver is on the task of doing the cares. The RN participants were all aware of the need to work with them as a team and also to ensure the delegated cares were provided in an appropriate way through checking and supervision. Registered nurses did discuss the challenges surrounding allocation of caregivers to residents, and considered these decisions to be clinical decisions that directly affected the residents. These challenges revolve around the skill mix of few RNs and more caregivers, and affects afternoon and night shifts in particular.

. . . next thing you know there are three people on morphine pumps in that area and

none of them, don't know how it works and stuff, so you have to make sure that there's

a RN . . . sometimes all the wards they have like morphine pumps everywhere or sub cuts

and someone's on oxygen . . . It gets stressful sometimes. (Participant 1, p. 8)

The skill mix creates a situation of risk for frail elders which is mitigated by the direction and delegation role of the RN. There are some situations when interventions need to be provided by RNs as they hold relevant knowledge for safe practice. Some skills that are common in RAC have the potential for error. Residents may have oxygen or subcutaneous fluids administered to manage their health problems or a syringe driver with morphine and other medications administered at the end of their lives. Each skill has particular knowledge that surrounds the

administration, held by the RN. The statement "it gets stressful sometimes" in these situations

seems an understatement as the RN retains accountability for each resident's care.

Changes in health

Clinical decisions by RNs about changes in resident's health incorporate the need for access to

medical assessments and interventions. These clinical decisions integrate an assessment of the

need for direct or indirect medical assistance with the level of urgency for medical assessment.

If the resident has an acute medical event or develops distressing symptoms the RN's clinical

decision for urgent medical attention is made, sometimes instantly, with the subsequent action

of the RN phoning for an ambulance.

> *But we also had that lady that fell, I saw her fall and knew she fractured so I just rung*
>
> *the ambulance. (Participant 11, p. 15)*

In the situation above the clinical decision for the need for urgent medical assessment and

assistance was made immediately by the RN. Klein (1998) described the way in which the

strength of the decision maker was evident through their ability to see the invisible, which is

evident in the excerpt above. In acute situations the RN needs to make accurate assessments in

order to project a tentative diagnosis leading to a clinical decision about the actions to be taken

to benefit the resident. The ability to consider what should be present and should be absent as

well as create a mental picture of the situation (Klein, 1998) is also evident in the two scenarios

below.

> *So a difficult one is - do you send them to hospital or not? And I've done ones that I've*
>
> *had someone with ischaemia in his leg - I couldn't feel a pulse behind his knee or in his*
>
> *foot, he's already had an amputation. When they sent him to hospital that night they*
>
> *took the clot out of his leg and saved his life. The doctor didn't come in, I wrote the*
>
> *admission note - and morphine wouldn't help the pain. I never checked later on the groin,*
>
> *palpation in the groin because there wasn't one there* [pulse], *so I missed that one,*

missed that. But it was difficult 'cos it was only me and it was late at night, it was a

Sunday night, late at night, what do you do. (Participant 11, p. 7)

There was a clinical decision that I made, for one person who has rectal cancer, is

palliative, has dementia, has a continual faecal ooze and is very pale obviously, and she's

losing blood as well rectally. The carer wrote in the notes that the woman was short of

breath. Never been short of breath until that time. So I faxed the Dr saying we needed a

haemoglobin here, this is new, haemoglobin was 40, the woman went to hospital and

got 4 units of blood. So that was an urgent decision. (Participant 7, p. 1)

In the above two scenarios the RNs were able to envisage the complete picture and put the data they had available together to intervene effectively for the resident. They both arranged urgent transfer to acute hospital services and initiated a chain of events through which residents' lives were saved or enhanced. Also apparent is a zone of uncertainty in the first except above, when the RN was not initially clear about the clinical decision and subsequent course of action. The second excerpt illustrated a zone of certainty.

Other changes in residents' health are noted to be more difficult to interpret, making it problematic for the RN to make clinical decisions, as the likely outcomes are not clear. An example by one RN participant illustrates the dilemma expressed about the difficult clinical decision to send a resident to an acute hospital. In this instance the assessments completed by the RN generated concern, although the problem was not a new problem and the GP was aware of it. As the GP was unable to assess the resident the RN was required to make the decision about transferring or not transferring. She weighed up the possible outcomes which were not clear and this lack of clarity made the clinical decision more difficult for her to make (Klein, 1998).

That's why she fell basically, 'cause she was dizzy . . . she had bradycardia we figured

that out, but he [GP] said, "Oh well they're not going to do anything with it anyway."

And the family were okay, there were the two daughters. But there was one day . . . I

walked past and I thought, this woman just looks terrible, I was, just walking past her

room, wasn't really looking at her, but because you see everything, nurses see everything,

and I thought, gosh she doesn't look good. And I went in and did a set of obs and things,

and she was like very bradycardic and things, and I thought, there's something not right

here. I can't remember the exact situation now, but I rang the GP and he said, "Look I

can't come and see her, but go by your instincts, if you want to you can get an ambulance,

that's your option. Either you can wait till tomorrow or you can get an ambulance." And

I'm sitting there trying to make this decision, thinking it's now in my court, I'm brand

new, but this lady's not good and I don't feel confident to not do something, symptom

management basically. So I rang the ambulance, anyway long story short, they, I must

have told the daughters that I'd had to make a decision with the GP, but I'd decided it

was a good idea to send her in and they may not do anything, but they may talk about

symptom management and treating it. And sure enough they put a pacemaker in this

lady. They gave her a pacemaker and the family was so grateful, because it had been

going on for weeks and the doctors, oh I think the paramedics questioned me a bit too,

but the doctors at [city] Hospital had said that she probably wouldn't have lasted much

longer without, or another day or two without being sent in. And the GP was extremely

grateful, 'cause he said, "You made the right decision." He thought he would be

bothering the cardiologists, but the cardiologist thought differently about the whole

picture. And the daughters were also grateful, she was really good when she came back

to us. (Participant 2, Int. 2, p. 5)

The RN made a clinical decision about the urgency of a medical assessment. In this situation the
RN and GP had previously discussed the health issue (bradycardia). Subsequently the RN's
assessment showed that while there was not a major change, the resident was sufficiently
unwell to warrant urgent medical assessment. This is in contrast to the preferred clinical decision,
to wait until the next convenient time for the GP to assess the resident. This RN was able to use

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pattern matching as she identified that she was not confident to do nothing and wait until the following day. The GP had interpreted that the acute services would not provide intervention but they did put in a pacemaker to alleviate the bradycardia.

Expertise was also demonstrated through the clinical decision by the RN to send a resident to an acute hospital when the GP had assessed the resident and not requested this.

> *I've had another situation where again I've overridden what the GP has said. And it was a lady with* [name of] *disease, and she was end of life care too. But she had the most exaggerated* [symptom] *that I've ever seen. I've been nursing for 40 years and I've never ever seen anything like it, nor has the physio ever come across it. . . . Anyway the GP had come in. I had asked if we could have something that would reduce* [her symptoms]. . . *It was awful. And the GP rang a* [consultant] *that she had been seen by before, and he wasn't there, but he'd left a message. He rang* [hospital] *and no beds. Friday you know, as usual, no beds. And so he said right so we'll get the* [consultant] *on Monday, and he left. So as the afternoon went on and . . . I thought I cannot watch this, so I rang and got her admitted. (Participant 7, p. 7-8)*

The level of distress the resident and staff experienced in the excerpt above was instrumental in the clinical decision by the RN to facilitate admission for medical assessment at the acute hospital. The RN demonstrated her level of expertise and commitment to reduce suffering. In another situation the RN described the distress she and her colleagues had experienced when they did not obtain a medical assessment at an acute hospital after the GP had completed an assessment and made the medical diagnosis of soft tissue injury following a fall. The RNs remained very concerned about the level of pain the resident experienced. After several days the RNs requested ambulance admission and the resident was diagnosed with a fracture. On reflection the RNs as a group created a plan about how to manage this situation should it arise

in the future and decided they would rely on their own assessment and interpretation and act on their own clinical decision.

Further clinical decisions that are related to residents' health changes are those in which immediate attention is not required, nevertheless medical assessment is warranted. The RN contacts the GP for a verbal order to commence a treatment or an action plan. The RN must decide if the criteria have been met for the action plan to be commenced and must report this to the GP for a verbal order to commence the plan. The RN must make a diagnostic decision by completing a thorough assessment and putting symptoms together as well as purposefully considering the cause of the symptoms for the resident.

> *We've got two residents who can just flick from being well to being unwell. Both have urinary track problems. But it's knowing that resident. Now, one does show signs and symptoms of behavioural issues, the other no symptoms, he can just go yeah. So it's having the knowledge and knowing that for people like this we have action plans. So for this person we have an action plan as soon as we know something's wrong we start them on the antibiotics and that works really well. Also other people who have recurring chest infections, or UTIs, shortness of breath, COPD, they all have action plans so that should anything happen we make the decision to contact the GP, say "This is what's happening." And then we can, the GP will say, "Yes commence the action plan." Because he's already scripted it up, he doesn't need to come out to visit. So that's another clinical decision. (Participant 12, p. 4-5)*

The assessments that the RN made in the excerpt above were important as they initiated the chain of clinical decisions in which a previously documented action plan for a potential problem was activated when the RN assessed that the problem had become active.

A further sign of the strength of the decision maker is the ability to mentally simulate the situation and see the details amidst the whole context (Klein, 1998). The RN may choose to

initiate a discussion about the best course of action for a resident at a particular time in the resident's health trajectory. As most residents are frail, the ability of the RN to recognise a medical condition (such as chest infection) involves diagnostic considerations, and the decision about the 'right' thing to do involves ethical considerations. Reviewing the resident's and family members' wishes is important, and provides the opportunity for the resident to be involved in the decision regarding treatment. These discussions require a level of expertise by the RN to initiate and sustain as well as co-ordinate all parties. Some RNs prefer their other option which is to arrange for a medical assessment to be completed by others and thereby avoid initiating an ethical decision.

> *I've got a frail resident and she's got a chest infection, where am I going to go with this? It's not making the actual clinical diagnostics at the bedside because I can do that, it's where do I take this information?' and the first way I take it, is let's talk to the resident and see what they want. But then we talk to the relatives and it's quite possibly in conflict with the resident. And then we go to the notes and look at what the progression is through from a Dr's, if we've got a DNR* [do not resuscitate] *order or a decision that last time we treated by antibiotics, but this time we might not. So it's guiding that, it's being the pivotal point in all of that, it's talking and communicating with a lot of different people to get the right decision. And sometimes they don't do it, they put it in the too hard basket. And the easy option is ring an ambulance, put the decision in somebody else's hands. (Participant 9, p. 4)*

In some situations of a change in the resident's condition the RN completes the assessments and makes a decision on the course of action to be taken that involves implementing nursing interventions and monitoring the resident's responses. The RN subsequently monitors the resident's progress and involves the GP only if the symptoms do not resolve. Again diagnostic decisions are evident.

Maybe push fluids when their urine is a bit stinky, so try to push fluids first before you

call the GP and if it doesn't settle, so, ring the GP. (Participant 10, p. 19)

In other situations the RN manages the situation without requesting medical intervention, having made the clinical decision that this is the appropriate response. For one resident with a history of cardiac issues, the decision had been made not to resuscitate. When he stopped breathing several times a level of intervention was still considered appropriate and was administered by the RN.

One of the residents might get unwell very quickly so I do an assessment on them pretty

quickly. This particular gentlemen he'd stopped breathing a couple of times and so I

brought him back, and so I rang the family, got hold of the family, got this particular

person to keep an eye on him, rang the family, rang his doctor and by then he'd

stabilised . . . Oxygen, nitro lingual spray, just monitor his recordings and just comfort

him really and talk to him. (Participant 3, p. 4-5)

The clinical decisions made by the RN in the excerpt above stabilised the resident who recovered from an acute episode. It is also possible that the resident may not have recovered and the RN described this as a possible outcome at some stage.

Summary of resident's daily life

The clinical decisions the RN makes surrounding the resident's daily life involve prioritising residents' health, applying comprehensive gerontological knowledge and skills, and applying knowledge of the patterns of the resident's health and ill health over time. The RN must notice subtle changes through knowledge of the resident. The RN develops a relationship with family members which is considered important for the development of an effective care plan and for trust to develop in the RNs commitment to the resident. The caregivers who provide many of the direct cares are supervised through direction and delegation by the RN.

The clinical decisions the RN makes about changes in residents' health include assessing the need for medical assessments or interventions. If the outcome is evident and the RN considers that medical intervention at acute care hospitals will alleviate distress then the clinical decision is made to immediately access medical assistance via ambulance. A zone of certainty is present. Others situations do not have such clear outcomes and create a dilemma for the RN about the 'best' clinical decision. A zone of indecision is present. At expert level the RN finds an outcome that is a comfortable ethical fit. Medical assistance may also be requested after the RN has completed assessments and made a tentative medical diagnosis. The RN contacts the GP to confirm the treatment or action plan may commence based on the RNs' clinical decision of the medical diagnosis.

Third time frame: Towards end of life

The RN makes clinical decisions that predict the impending death of a resident, and notifies the GP in order that dying may be diagnosed and family members supported and prepared for the anticipated death. The RNs in the excerpts below made the clinical decisions to notify the GP to commence a palliative care path and also an end of life Liverpool care pathway (LCP)[13] for the final days of life.

> . . . when the unit coordinator's here she does the doctor's rounds but we do feed her the information and say, "I think she doesn't look really well, I think she needs to be on palliative care now." Even if she doesn't die after a few weeks, "I think she needs to be on palliative care now." (Participant 5, p. 20)

> I guess it's informing the Dr too or keeping them informed, and we do have if we've got someone who's palliative, it's up to me to say to the Dr "it looks like we need to start the

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[13] The Liverpool Care Pathway provides guidelines for care for a person's final hours or days before death in order to effectively manage a peaceful death. It has been controversial in the UK as it has been considered by some to be a way to end a person's life rather than to be an effective way to manage end of life care. The LCP has ongoing use in New Zealand.

LCP, because in my judgement I think we're only a few days away" or something like this.

(Participant 6, p. 4)

In the first excerpt above the RN prefers to initiate the process of palliative care even if the resident does not die in the immediate future. The uncertainty about the timing of death leads the RN to make a clinical decision within the zone of certainty, as the RN considers it preferable to prepare for the end of life rather than misdiagnose the timing. The diagnosis of dying alters the expected trajectory of the resident's life and enables all parties to be informed of, and start to adjust to, a very limited life expectancy for the resident. Registered nurses also consider that their ability to make an accurate clinical decision about the impending onset of death is very important for end of life care for the family members.

If we can just predict death, putting them on palliative care first before they die is really

important. I think it just, for the relatives' sake, because if it's an unpredicted death then

sometimes we would find it hard to ring the relatives and say, "Hey he has, we just found

him dead." So at least if they are expecting something to happen in the next, I don't know,

few weeks, then it's easier for them to accept. . . And for patients that are on palliative

care, he doesn't need his medications anymore, can we just review, can we just

discontinue that? (Participant 5, p. 21)

The time to adjust was noted above to be important for family members and the focus after a diagnosis of a foreseeable death moves from daily life to end of life. The effect on family members of the unpredictable nature of death is also evident in the excerpt below as a participant discussed an unexpected death. This resident had chronic obstructive pulmonary disease (COPD) and was receiving antibiotic treatment for a chest infection. The outcome could have been a continuation of life, however death ensued.

She looked unwell and they said, "Oh no she isn't well, she's got a chest infection," she

was COPD and they already had her on antibiotics. But she deteriorated really quickly

and we tried a couple of antibiotics, she was gone within a week and that's the reality, and that was quite hard for the family . . . it is hard at times . . . and the family struggled a bit, 'cause she'd been such a hard case and she was gone within a week. (Participant 2, Int. 1, p. 20)

The suddenness of this death, whilst a constant possibility in a person with COPD who develops a chest infection, was not expected by family and made it more difficult for them to accept the finality of the death. A further example of the importance of identifying the imminent timing of death is provided below. In this situation the resident could have died at any time, which was clearly understood by staff, but it was not expected by the resident's wife. The importance of providing support was also articulated by this participant in order for some closure from the rawness of the death for the family member.

. . . we recently had a gentleman who passed away, he was a lovely man, absolutely lovely man. And his wife had been with him during the day. He'd been fine on the Thursday, he was a wee bit poorly on the Friday. She'd spent most of the day with him and she was feeding him thickened fluid and she left and went home, and he had a sudden event, possible aspiration pneumonia, possible stroke. We still don't really know, and staff called her back and everything. Like he passed away and everything was fine, however she came back and when she got the death certificate through the mail, she came back two days ago, and said to me "I know this is awful but I just need to know why didn't someone know he was going to die?" And despite the fact that she knew that at any stage he could have. So I went and got his file from the archives and went through everything with her again, and the Dr had already done that with the family. She said "my family have said to me I'm being stupid and not to come back". I said no you're not, you need to have that sort of closure. So I think people don't always get it despite the fact, particularly when it's an older person themselves, maybe hard of hearing, who may

not quite understand everything as well as they should. So we need to be prepared to do that, and not go what, look he died, just go away type of thing. We need to be able to sit them down and go through it with them so they can have closure as well. I thought this lady would have picked it all up, and she would have understood it all but she obviously hadn't, there were bits of the story that hadn't fitted in for her. (Participant 8, p. 7)

The significance of the resident's spouse being an elder has also been identified above as the assumptions made that the tentative nature of life was understood by this spouse proved inaccurate.

A clinical decision to liaise with the GP involves subsequent decisions such as initiating a reduction in the medications the resident takes to only those addressing symptoms, especially anxiety and pain. The RN's responsibility for the assessments and clinical decisions, especially related to pain, is evident in the excerpt below.

. . . it's up to you it's a very nursing thing that if you think the patient would benefit from a morphine pump then you can tell the doctor, "I think she needs a morphine pump" and he just goes and signs and it's all done. (Participant 1, p. 22)

The participants considered the management of appropriate care to be particularly important while the resident was dying. The aims of the care were clearly stated by one participant.

If they're in the process of dying and we might start a syringe driver, and we add drugs to relieve their agitation, their anxiety, so it's fairly clear cut if somebody is coming to end of life, we want them to be comfortable, we want them to die with dignity . . . Not in distress. Relatives not in distress. So we're looking after, you know it's a holistic approach to that end of life thing, supporting relatives as much as the resident or the patient. (Participant 7, p. 7)

The RNs sought support from the GP or palliative care experts in order to ensure a peaceful death. The proactive nature of the clinical decisions is evident in the excerpt below.

> *Yes, so I suppose it's those conversations have to occur to get the ducks in line if you please, then if it's a palliative or it's making sure that we have a palliative care consultant in, if we've got symptom control issues, making sure that things happen even though we've made the decision not to treat, that our care is proactive, that we're looking at what's presenting and we're just not saying this person's dying so we'll just do two hourly turns. We are actually proactively managing any symptoms that are happening, and getting the people on board that need to be, like the GP with the right syringe pump mixes and the palliative care for the right symptom control, those types of things. (Participant 9, Int. 2, p. 1)*

The importance of assisting the family during the dying process was also discussed by RN participants. Triangulation of data through observations during this research process confirmed the support provided to family members as the RN discussed the current situation and expectations of subsequent dying processes and made plans for overnight care. The following excerpt illustrates the RN's focus changing from resident to resident and family, especially if the relative did not have support from their own family.

> *Because of course in the end of life stages and leading up to it often too, you actually are caring for the family for as well. Particularly if there's no children or maybe it's just a husband or wife to that person. So you're actually looking after them as well. So those situations are challenging. (Participant 6, p. 9)*

RNs made different clinical decisions about the same clinical situation and conferred in order to reach an acceptable clinical decision. A clinical manager described her approach in which the clinical decision made by other RNs was reversed in order that an agreed outcome could be reached. This enabled the resident who was receiving palliative care to remain in her familiar

environment with familiar people around her, rather than being transferred to an acute hospital. The authority of the role this RN holds is evident along with her expert approach in which the whole picture was considered.

> *. . . we had a palliative woman here, who was a woman who was fiercely independent, so was very vulnerable, in her risk factors. This morning she attempted to get out of a lazy-boy and had gone and planted her face. She just looked dreadful, she looked awful and she had a large hematoma over her left eye. The girls got her up and they were very very concerned that she had suffered a subarach[14], or she had done some other. By the time I got to know about the decision that they'd made, which was to call an ambulance, the ambulance was called, so I went in and said "so what do we think is going on?" And they said "well look, she looks just awful", and I said "well think that through, where are we going with this? with going into* [name] *Hospital for an x-ray what are we gaining?", "well we've got to do something, she might die of a subarach" I said "this lady is dying, so we need to make sure that we're keeping her comfortable, and that everybody is aware of the decisions we're making, and why we're making them". (Participant 9, Int. 1, p. 1)*

The concern for the best clinical decision for the resident is evident in the excerpt above as the RN envisages the processes surrounding admission to an acute hospital for a woman who was dying of a previous cause. The concern for the potentially life threatening current health problem is placed into a grand context of a dying person, in order to consider all outcomes and decide on the best outcome. The need for transparency of clinical decision making is an important point in this excerpt as the RN promotes a transparent process.

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[14] Subarachnoid hemorrhage refers to a bleed around the brain.

The clinical decisions made by RNs during the resident's palliative care and end of life phase are adjusted from a continuation of life to an end of life framework. The RN makes the clinical decision to initiate an acknowledgement of the change in the resident to their family and the GP and also promotes the management of symptoms along with support for family members. The aim of identifying the end of life is considered by RNs to be of paramount importance regarding the clinical decisions about the adjustment of care and the need to prepare and support family members.

Summary of chapter six

The RNs make clinical decisions for each resident to provide targeted individualised care. Some of these clinical decisions are easily made and some are difficult to make creating uncertainty for the RNs' about the clinical decision. Some of the clinical decisions fall within zone of certainty when the RN makes a decision to either act (such as to obtain assistance e.g. phone for an ambulance) or to not act (such as wait and watch). Many of these decisions are clearly evident to the RN and based on robust data. There is also a zone of uncertainty that creates tension for the RNs as the decision is unclear, such as when the health assessment of the resident does not provide definitive findings, or when expected findings are absent, or when there is more than one correct course to follow with different actions. A dilemma may also exist when the RN holds knowledge of abnormal findings or atypical presentations related to the diagnosis of medical conditions, but evidence is not present, or weak evidence is present, to support either action or inaction. When the clinical decision falls within the zone of certainty to act, or the zone of certainty to not act, the RN does not experience any hesitation when making the clinical decision. However if it falls within the zone of uncertainty, the RN experiences difficulty. The RN is often alone and must make decisions in isolation. These clinical decisions will be scrutinised by others who have the advantage of hindsight.

The RNs' clinical decisions may take some time to formulate such as when the resident initially enters the home and the RN commences assessments to form an adequate base for the care plan. Daily life includes stable life as well as health events, and the RN continues to make clinical decisions over this time, until and possibly after the time of the resident's death. How and why the RN makes the clinical decisions described in this chapter will be explained in chapters seven and eight as the sixth step of Easton's (2010) critical realist case study process is implemented and generative mechanisms revealed.

CHAPTER SEVEN

Nursing in residential aged care: The generation of clinical decisions

Introduction

Chapter seven will continue to discuss the findings of this study and answers the second research question 'how and why are the clinical decisions made?' 'How and why' focuses attention on the layer of the 'real' comprising the generative mechanisms. There are three generative mechanisms that generate the clinical decisions. They are: (i) professional imperatives: significant relationships with the resident, family and GP (ii) quality and fiscal restraint: nursing in RAC, and (iii) the specialist nature of gerontology nursing. Each comprises three components.

In this chapter, the first two generative mechanisms will be explained. The third generative mechanism will be explained in chapter eight. The explanations will expose the relationships and powers that comprise the social structures and that influence decision making. These generative mechanisms actualise, redirect or block the RNs' clinical decisions. Figure 3 illustrates the three generative mechanisms that influence the clinical decisions of the RN.
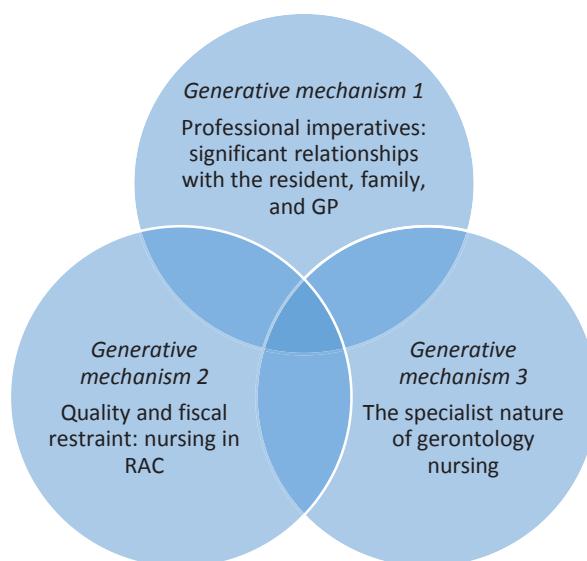
Figure 3. Three generative mechanisms

The components of each of the generative mechanisms became apparent during the retroductive research process and the generative mechanisms evolved. Each of the components will be explained in conjunction with the ways in which the generative mechanisms actualise, block or redirect the clinical decisions of the RN. The generative mechanisms also interact and may actualise, block or redirect each other. Figure 4 illustrates these components.

GM 1 Professional imperatives: significant relationships with the resident, family and GP	• The autonomy of the resident • The relationship with the family • The interprofessional relationship with the GP
GM 2 Quality and fiscal restraint: nursing in RAC	• Quality of care and fiscal restraints • Delegation to caregivers • Access to knowledge resources
GM 3 The specialist nature of gerontology nursing	• Specialist nursing knowledge and skill • Ethico-legal and professional deliberations • RN's moral agency

Figure 4. Components of the generative mechanisms

In this chapter and in chapter eight the participants' interview data will be drawn on to explain the generative mechanisms. Some data has also been triangulated by the researcher's observations as well as reference to policies and other documents. The generative mechanisms have also evolved and developed through retroductive processes with reference to research and other literature. The inclusion of some literature enables greater depth of explanation.

Generative mechanism one. Professional imperatives: Significant relationships

The first generative mechanism comprises three components which denote the RNs' professional relationships with the resident, family members, and the GP thereby conceptualising social structures specific to RAC. The first two components are the autonomy of

the resident and the relationship with the family, which influence the clinical decisions the RNs make. The relationship between the RN and resident is an asymmetrical one based on the dependence of the resident for care and the power held by the RN to provide this care (Delmar, 2012). The family may provide balance to this asymmetry and advocate for the resident. It is the professional responsibility of the RN to work in partnership with the resident, and family, based on the values of respect, trust and integrity (Nursing Council of New Zealand, 2012a). The third component of this generative mechanism is the interprofessional relationship with the GP based on differing scopes of practice. The RN has a professional relationship with the GP who holds responsibility for the medical decisions while the RN holds responsibility for the nursing decisions. The medical and nursing scopes of practice differ although there is an overlap of responsibilities for the residents' care which may create predicaments for the RN.

Component one: The autonomy of the resident

The resident's cognitive abilities are central to their autonomy and thereby to the RNs' clinical decisions. The resident may be assessed once admitted to the residential home to verify their level of cognitive competence. The resident's competence may decline over the time the resident lives in the facility, due to frailty, dementia or co-morbidities. Most residential care facilities therefore require another person to be nominated through an EPOA to make decisions should the resident become partially or wholly incompetent to make their own decisions.

> *When a resident first comes in the GP normally gives them a week or two's grace and then he assesses their competence. He charts it, they're not very good at charting it but they chart it on their medical admission form whether they're competent or deemed not competent to make decisions. Also when a resident comes in we have to have an enduring power of attorney appointed, so that if the doctor deems that resident to be incompetent, that will enact the enduring power of attorney who's appointed. (Participant 12, p. 3)*

The documentation within the resident's notes indicates who the next of kin is and what relationships are important. The EPOAs are held centrally in most organisations and not all RN participants were aware of whether an EPOA existed or had been enacted. Not all residents have EPOAs and while the residential care settings 'require' them they are not always possible due to the associated legal costs. If the resident has not appointed another person to hold an EPOA the family court is able to appoint an appropriate individual (Astell, Lee, & Sankaran, 2013).

Competence and autonomy

Power over decision making resides in the resident's level of competence. If the resident is deemed competent then the resident retains the right to consent or not consent to health care procedures and treatments including the acceptance or refusal of medications. This right is clearly stipulated in section 7(1) of the Code of Health and Disability Services Consumers' Rights (Code of Rights) (Health and Disability Commissioner, 1996) which states the health consumer must have made an informed decision and given informed consent. If a resident who is deemed competent refuses a treatment, it is lawful that it is withheld or withdrawn according to the New Zealand Bill of Rights Act 1990 (Section 11) and it would not be lawful to administer the treatment against the resident's wishes (Skegg, 2015b).

If the resident has diminished competence the resident still has the right to make choices and give consent at the level of his or her competence (Right 7.3) (Health and Disability Commissioner, 1996). If the resident is not fully competent the person holding an enacted EPOA may consent on the resident's behalf. If the resident is not competent and has no-one able to consent for them, the resident's best interest should guide the care reflecting what the resident would have wished for (Right 7.4).(Health and Disability Commissioner, 1996) This guiding principle of following the resident's best interest is also reflected in the Code of Ethics for RNs (New Zealand Nurses Organisation, 2010). Competence and capacity refer to the same legal concept (Skegg, 2015a).

Johnson and Keenan (2010) provide helpful details about competence and incompetence in the context of the health practitioner obtaining consent for treatments. The inability to make an informed choice means the resident is not able to understand and retain sufficient information about the treatment and is not able to weigh up risks and benefits to make a choice. The health practitioner must make the judgement about the resident's competence, may take the family members views into consideration, but retains the responsibility for the decision.

An advance care plan or an advance directive may be available to provide guidance about preferred treatment or decisions about declining treatment. If the resident becomes not competent, a lawful advance directive is sufficient to provide an agreement or a refusal of treatment however an informally expressed desire should be very carefully dealt with (Skegg, 2015d). If the treatment is not deemed to be indicated or to be of benefit to the resident the health professional may decline to provide this (Ministry of Health, 2011a). Often this is a medical clinical decision which impacts on the RN's clinical decisions.

Levels of competence

If the resident is deemed 'competent' the policies of the residential care homes, in keeping with the Code of Rights (Health and Disability Commissioner, 1996), stipulate that the resident must provide consent. This requirement resonates with the RN participants who supported the residents' decisions including supporting the resident against the family's wishes.

> *And we do get now a lot more residents making their own choices, much stronger sort of views, people say "no I don't want to be resuscitated" or "no I'm not going to hospital", and the daughter, or the wife or the husband might say "I really would like you to", "no I don't want to, I'm tired and I've had enough". We do have that quite a bit now, and the family will say "can't you persuade them, can't you make them?" and we say "well actually no, they've got capacity, so we can't." (Participant 8, p. 8)*

In the excerpt above a paternalist approach by the family may be present as the resident's wishes are not automatically accepted and the RN must advocate for the resident. While the autonomy of the resident is preserved when competent, it becomes less clear when the resident is partly or not competent. In this situation the most sought after method used by the RNs was to engage the resident and their family members, as well as the GP, in the decision. If all were in agreement then the clinical decisions become communally agreed and not contentious.

> *So in a situation where she has been deemed partly competent I would not make any decisions without involving the resident, the resident's family and the GP, it has to be all three. (Participant 12, p. 4)*

> *If they didn't have that capacity then we would be guided by the family. Then they'd have that input. (Participant 8, p. 8)*

In the two excerpts above the importance of family members is evident. The family has power but the RN, and the GP, must still uphold their responsibility to act in the resident's best interest. The RN is not able to abdicate this responsibility by adhering to family responses without considering the resident's best interest. The ideal outcome is when all parties agree to the actions and are comfortable that the decision meets the values or beliefs of the resident.

Diminished competence means others must be involved in making decisions for the resident. An advance care plan or advance directive may provide some clarity regarding the resident's expressed wishes, but a resident may change his or her mind. As the participant in the following excerpt indicates, residents with autonomy may change their decision and the concurrent decision is respected. Adhering to the resident's decision meets their right to autonomy.

> *But what I've also always said is that an advance care plan is only good for the day it's written, things change and if you're confronted with an acute illness and you've said 6 months ago when you're fit and healthy that you don't want treatment, the decision*

today may well be completely different and why shouldn't it be. (Participant 9, Int. 1, p. 9)

In recent times advance directives have been promoted, but many residents have not completed them. As a lack of competence amongst residents is prevalent in RAC, and competence and autonomy influence the RNs' clinical decisions, increased completion of advance directives could be beneficial.

The impact of the resident's autonomy through competence is now explained in the critical realist terms of actualising, redirecting or blocking the RNs' clinical decisions.

The influence of resident's autonomy: Actualised, redirected or blocked

Actualisation of the RNs' clinical decisions occurs when the resident with autonomy requests or declines care or treatments and their family and the RN respect this decision. If the family do not agree with the resident, and the resident is competent, the RN supports the resident and there is actualisation of the RN's clinical decisions based on the resident's autonomy. If the resident is deemed not competent and the family member with enacted EPOA, GP and RN are in agreement, and believe the decision is in the best interest of the resident, the RN's clinical decision will be actualised. Nonetheless if there is a discrepancy the RN's clinical decision may be blocked or redirected. The RN works to align the family's expectations of treatment or care.

Component two: The relationship with the family

Many residents have family members, spouses, children, grandchildren or others, who are involved in their lives. This enduring connection is due to the mutually beneficial relationship they experience or to their sense of filial duty (Davies & Nolan, 2006; Keller, 2006). Family relationships and their values are central to the functioning of the resident's family and have an impact on the relationship between the resident, family members and the residential care home staff. Many families continue to be involved in the resident's life and want the best for their family member.

We're not in the care giving role by ourselves, we have got four or five families standing behind us, beside us, all wanting the same for that resident. So we've got to take them in context as well, we can't make any decisions without discussing it with them. (Participant 9, Int. 1, p. 8-9)

Some family members may feel guilty about their relative's admission to the residential care home because they have not been able to manage the required care at home and they may subsequently compensate in various ways (Ogland-Hand & Florsheim, 2002). Examples of the family member's compensatory behaviours are completing activities for the resident who is able to complete them independently or providing sweets as treats if the resident has diabetes (Ogland-Hand & Florsheim, 2002). Some of these behaviours create tensions for RNs who must decide how to address them. Interacting with family members is identified by the participants as challenging as families are complex.

Family members may complain to staff on behalf of the resident. Registered nurses acknowledge that at times the family is justified in making complaints as the care provided has not been satisfactory. The care may not have been provided by the RN who receives the complaint. However the RN must address the issues and respond in order that the family may feel confident again in the facility.

So probably one of the most challenging things in the job is the interaction with the family members. And it's making decisions too as to what do I say at that time. So it's not so much perhaps a doing thing, it's a more how do I reassure this person that it is all alright, or how do I reassure them that yes that wasn't up to scratch, and that it won't happen again. You know, things along those lines. So yeah I think that's probably one of the most challenging bits of the job, actually dealing with people that are not the resident. (Participant 6, p. 9)

Some families have difficult internal relationships that affect their relationships with the resident as well as staff. They can differ in their interpretation of the resident's health and health needs as well as in their preferences for the actions or interventions to be taken, creating some tensions within family and also tensions between family and RN.

> *I think dealing with families can be really challenging. You know, interacting with the families . . . Because there seems to be with a lot of families with a huge amount of history. There seems to be, incredible amount of, I don't want to say poor family dynamics, but dynamics which are obviously troublesome to the families. And we don't often know what's gone on but we know something's gone on. Because of the way they interact with their mum or dad. And the way they interact with us. (Participant 6, p. 8)*

> *I've got two at the moment squabbling over a palliative mum who should or shouldn't be given morphine . . . Daughter A has had mainly the care of mum . . . daughter B . . . caring in the last year. So huge family conflict and daughter A thinks that a bit of morphine just to settle mum's anxiety, because mum's dying she's got a haemoglobin of 34, so she's breathless, she's anxious and quite rightly a little bit of morphine does settle her, makes her more comfortable, she is able to eat, she can get up in her chair and life is good. Daughter B thinks no way, morphine and she's got no pain, so if she's got no pain why are we using morphine. (Participant 9, Int 1, p. 10)*

In the second excerpt above the RN attempted to educate the 'reluctant daughter' by providing information and educating her against the background of negative societal assumptions around morphine. The RNs were also monitoring the medication's effectiveness and appropriateness through their assessments of the resident. The GP had also been involved and had prescribed the morphine medication. The RNs found these situations very time consuming as well as challenging to obtain a solution satisfactory to everyone. Effective conflict resolution skills are necessary. The RN kept the resident central and used pain assessment and knowledge to make

the clinical decision as is commensurate with ethico-legal and professional responsibilities. The excerpt provides an example of the difference between lay and professional knowledge and also the different interpretations of what is in the resident's best interest.

A family member may advocate for the resident or may complain to the facility or to the Health and Disability Commissioner about the RN's clinical decision and thereby holds power. Complaints are usually addressed by the RNs who hold accountability for their practice. Communication and trust assists this relationship. Some of the issues that arise are related to low staffing levels. However the RN must spend time providing an explanation and reassurance to the family members.

> *We need to be absolutely accountable, I think we do need to be accountable for everything we do, but families do want a greater involvement, and some of them are realistic and some of them are completely unrealistic, and it's the unrealistic ones that take a lot of time, and a lot of energy, and a lot of effort into just making sure they do feel ok . . . They don't understand. (Participant 8, p. 7)*

> *Getting people to realise too that there isn't a staff member sitting right beside their family member 24/7, which is not the reality for any place. So it's the expectations perhaps that sometimes can be a wee bit unrealistic on staff. (Participant 6, p. 9)*

The RNs must spend time responding to these issues although they do not have control over some contributing factors, such as staffing levels and skill mix. The triadic relationship between the RN, resident and family members is ongoing while the resident lives in the home and may require a significant amount of the RNs' time. Despite tensions, the relationship is also a source of great professional satisfaction for the RNs.

The family therefore have a significant role in the provision of care to the resident and the relationship between family members and RN is important. The influence of family on the RNs'

clinical decisions will be explained using the critical realist approach of considering aspects that actualise, redirect or block the clinical decisions.

The influence of family: Actualised, redirected or blocked

The RN's clinical decision may differ to that requested by the family member due to different professional and lay knowledge and the RN may provide education to overcome this situation. The knowledge provided may be sufficient for the relative to become aligned with the RN or resident's position and so the RN's clinical decision is actualised.

If the resident is not competent, and the RN does not agree with the family, the RN may provide education and will also enlist support from the GP. A triangular or quadrangular relationship may be formed between the resident and family, GP and RN. The GP support may be to educate the family, or to support the education the RN has previously provided. The clinical decisions of the RN are actualised if the GP and RN give the same information and trust by the resident and family is enhanced. Conversely if the resident or family receive different information trust is reduced and the clinical decision of the RN may be blocked or redirected.

If the relative maintains their perspective which differs to the RN the RN's clinical decision may be blocked or redirected. If the family member has EPOA and there is a poor outcome for the resident, the RN may experience moral distress which may have a lasting impact.

Component three: The interprofessional relationship with the GP

Collaboration and trust between RN and GP creates a relationship that enhances the clinical decisions of the RN. Each profession has a scope of practice and there is an intersection of associated knowledge that influences the RNs' clinical decisions.

Collaboration and trust

General practitioners are an integral contributor to the care of residents in RAC. The participants in this study described their current relationships with GPs as collaborative. The relationship

comprises mutual interdependence and trust, if it is earned by the GP and by the RN. A mutual interdependence stems from the RN and GP sharing information within a collaborative team approach to provide care for the resident.

> *I think it's that decision between colleagues and that evidence that you write down that you've done the right thing. And putting it back to the GP, what do you reckon, and what about this and what about that, and they'll go oh yeah that's a good idea or this is this or they themselves ring up the nurse specialists, and they recommend something. (Participant 11, p. 6)*

If the GP is unable to assess the resident in a suitable timeframe the GP may prescribe treatments based on the assessments the RN has made, rather than on their own assessments. The collaborative approach is evident in the excerpt below as this participant describes the RN's request for verbal orders from the GP to commence a treatment based on the RN's health assessments of the resident. The follow up by the GP demonstrates the commitment to the best outcome for the resident. The GP holds the final decision as a medical decision.

> [Registered nurses] *put standing orders in for antibiotics, and after information from a GP, that this is what's happened, this is what I've got, this is what the obs are, this is . . . And I've got a standing order from you for amoxicillin or whatever, trimethoprim that's sitting here, would you be comfortable, or where do you want to go, so it's in consultation. . . If we did that the GP would follow up in the next day or two, he wouldn't just let the course of antibiotics, he would and we wouldn't want him to do that, we'd be wanting confirmation that this is the right track, this is the right diagnosis. (Participant 9, p. 2-3)*

In the excerpt above the outcome for the resident is enhanced if the treatment is commenced at an earlier time. If the assessment of the resident is delayed until the GP is able to visit any

treatment is also delayed meaning the resident becomes sicker before the treatment commences. For elders with fragile health the delay could lead to a detrimental outcome.

Professional relationships are enhanced if trust in the clinical decisions of both parties, and a collaborative approach, are present. Several participants identified trust to be an important part of their relationship with the GPs. While trust is not exclusive to the GP and RN relationship it is an important aspect and enhances outcomes for residents.

> *You have to earn their* [GP] *respect, so there was a little bit of, I know I had to phone him a couple of times quite quickly about things and he very rapidly gave me feedback to indicate that he trusted my judgement quite quickly. . . Probably the clinical handover I gave to him on the phone. (Participant 2, Int 2, p. 3)*

> *The GP obviously plays a big part, and I think the GP also sums me up. Can we trust your assessments, can we trust what you are saying when you want us to come and visit, do we know that it's urgent. I mean that goes on very quickly doesn't it, we size each other up. (Participant 7, p. 11)*

> *I can go and listen to a chest and say . . . I can hear from two thirds of the way down the lungs I can hear some very loud crackles and creps[15] and things there. So, one of the Dr's did say to me "we trust you with that call, your judgement with your skills" so I think well that works for them. I didn't ever look at it like that until this particular GP said, "it helps us", it helps them with their job because it's a team approach then. (Participant 6, p. 4)*

The team approach is enhanced if the GP trusts the RN's health assessment skills and clinical decisions as this confidence assists the GP to provide appropriate medical treatments. Similarly the RN needs to trust the GP for effective teamwork. One participant described a situation where a clinical decision by the GP proved inaccurate and the RN was subsequently less likely to

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[15] During a respiratory assessment of the resident's chest, the RN hears breath sounds over the lung fields and some abnormal sounds are heard as crackles and crepitations (creps).

trust this aspect of the GP's practice. This situation will be described in the subsequent section 'differing clinical judgements and decisions'. Despite this error the RN also acknowledged other aspects of this GP's practice that were exemplary.

Intersecting knowledge

GPs and RNs have separate scopes of practice, which provide guidance about the roles of each health professional. Their knowledge bases differ with medical knowledge being specific to medicine and nursing knowledge being specific to nursing. There is also knowledge which is shared knowledge and common to both scopes of practice.

In order that the RN can appropriately facilitate the resident's access to the GP's medical services, the RN must hold sufficient shared knowledge and understanding of a wide range of medical conditions. The RN plays the leading role in liaising with the GP, based on their health assessments of residents and their clinical decisions about often subtle changes in the resident. The RN may also advocate for residents to receive this medical assessment and review. The RN may need to advocate for the resident as the GP may not have the same analysis and interpretation of the situation, and the RN needs to ensure the GP gains sufficient knowledge to engage with the resident.

> *So yeah, it depends on the symptoms that he* [resident] *has, even if he doesn't have fever but it's causing him trouble like he can't sleep, or it's affecting his day-to-day activities then we have to refer him. And we just have to tell him,* [GP] *"Yes he doesn't have fever but, you know, he's not eating and he's obviously unwell." (Participant 5, p. 2)*

> *My instincts tell me there has to be something more that can be done, to try and make this person a bit happier, less aggressive. So I get the Dr back in again and start off by saying to him "I know I've had you in before but . . .", because he sort of looks at me as if to say well what are you wanting me to do this time. So we go through the meds again and he can't change anything. (Participant 6, p. 16)*

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In the first excerpt above the RN highlights particular assessment data for the GP, including nutrition and general condition, to ensure the resident is seen and assessed despite not showing the more objective sign of fever. In the second excerpt the RN requests a further medical assessment and review because of the resident's demeanour. In both situations the RN advocates for the medical assessment.

Registered nurses know the scheduled times that GPs will be present at the facility and make clinical decisions about routine and unplanned events that the GP should be informed about.

> *So you structure your day, but in between you've got your routines, your medications, your dressings, follow up of any say review plans with the doctors. The doctors come in, you know they're going to come in on certain days, so you work around those sort of time slots you know that are going to be occupied, and any other issues that can arise, "So-and-So's cut their leg, or their temperature's just spiked, or the catheter's blocked," so it's working round that. (Participant 3, p. 8)*

Some of the RNs' clinical decisions remain with the RN until certain criteria are met and then they become medical matters. The RN may make the clinical decision to 'watch and wait' while implementing nursing interventions and defer any referral until appropriate signs are present. Once these signs appear the RN contacts the GP for medical assessment and intervention.

> *Maybe push fluids when their urine is a bit stinky, so try to push fluids first before you call the GP and if it doesn't settle, so, ring the GP. (Participant 10, p. 15)*

Similarly the RN may complete all assessments then notify the GP and request a medical decision about appropriate intervention.

> *Let's dipstick that urine as well, and then maybe let's take the temperature, let's just see how she is, is she a bit more confused than usual, is she confused where she wasn't confused, put all that together and say send that urine off, and we'll let the GP know*

what we've done, and ask him if he'll prescribe. Sometimes they say I prefer to get the

report or yes I will prescribe. (Participant 7, p. 9)

The GP relies on the quality of health assessment data and other relevant information the RN passes on. The RN is responsible for putting together the pattern of the resident's current health and previous health episodes. The RN presents relevant and sufficient data to the GP so that the resident's concurrent issue can be considered not as one isolated episode but within the progression of the resident's health. The GP is responsible for the medical management of the resident including the medical assessments, medical diagnoses and the medical treatment of the resident.

He [GP] relies on the RN, he's told them this, relies on the RNs to give him the right

information and that has been the gaps . . . sometimes they don't tell him enough . . .

and he'll say, "Well I wasn't told that." (Participant 2, Int. 1, p 29)

In order for the GP to make effective medical decisions all relevant data are essential. The RN may also find the GP acts as a resource at the interface between medical and nursing assessments and interventions. The GP may provide knowledge that the RN does not hold and may also assist in applying this knowledge to the individual resident. RNs find having access to the GP and to the GP's knowledge particularly important when caring for residents having palliative care as medical knowledge influences the nursing clinical decisions regarding end of life care.

But he's accessible by phone a lot. So if we have someone who is palliative care, we can

phone him at night. He's reachable by cell phone. Yeah, he's very good in that he backs

us up. And that helps with decision making too because I can actually say to him "I don't

understand this", or something or other has happened "what do you think?" (Participant

6, p. 4)

If the GP and RN work collaboratively and trust each other's decisions then the outcomes for the residents are likely to be enhanced. The RN uses intersecting knowledge to engage the GP in the resident's health issues.

Differing clinical judgements and decisions

In the excerpt below is an example of a relationship in which the power of medicine influenced the clinical decision by the RNs with detrimental outcomes for the resident. The detrimental outcomes to the RNs are also evident.

> [RN] *decided that she would do a courtesy and call the GP, who told us we mustn't transfer him to hospital until he'd seen him. So I said well OK we'll just hold that, we must respect what he's told us, and he came and said "he hasn't got a fracture that's rubbish, it's a soft tissue injury". So we sat on this guy for 5 days, and of course he did have a fracture in the end and on the Monday morning when I came back into work, and I saw, I said no he's going in, this is nonsense. And the GP sort of minimised it and it's really eaten up at us, so we've kind of changed our thinking now. As nurses, if we're in doubt we're not actually going to refer to a GP first, we're not even going to do the courtesy call. Because that's really impacted. It's really bothered me. And more the fact that this guy was in pain, this chap was in pain . . . none of us are happy with the outcome of this, so what are we going to do now to make sure it doesn't happen again. . . is that we will just transfer. If we look at someone and we've got the signs that we know, would indicate someone's got a fracture or someone is unwell, then we'll send them in. And if it's not a fracture there's nothing lost really, apart from an ambulance transfer. And this patient certainly will not suffer. Because that's part of our role really is to alleviate suffering and sometimes if you can't make a simple decision that will alleviate suffering, then it's not good really. So I guess still in Aged Care the Dr's do still sometimes hold the power, and*

it's very frustrating, the power balance. So that's something that impacts on our every-

day decision-making. And it's not good. (Participant 8, p. 1-2)

In this example the power residing in the medical decision over-rode the RNs' health assessments and their clinical decision to send the resident to an acute hospital by ambulance. In this sector there is not an accessible second or third layer of medical personnel available to the RN and any further assessment is only available if an ambulance is called, as the GP is primarily responsible for the medical treatments of residents. In the excerpt above the medical and nursing clinical decisions differed and the medical judgement and decision over-rode the nursing judgement and decision which delayed access to medical attention. The health assessment of the resident did not provide a clear probable diagnosis and this is often the situation following a resident's fall. The RNs have used this situation to empower themselves and have formed an action plan to ensure a follow up medical assessment is completed if the RN's assessment indicates it is warranted, thereby actualising their clinical decisions.

An example of a situation in which the RN overrode the GP's decision will be provided in generative mechanism three when the RN's knowledge to make this decision is explained. The RN gained access to further medical assessment by phoning for an ambulance to take the resident to the acute hospital when the GP had not acted.

The influence of interprofessional relationships: Actualised, redirected or blocked

When a collaborative approach and trusting relationship is present the subsequent team approach actualises the clinical decisions the RN makes. In some circumstances the RN may defer to the GP when they consider the GP's knowledge gives appropriate authority to the GP's medical decision. The RN alters their clinical decision, based on increased knowledge, to align with the GP's decision and subsequently actualises their own clinical decisions.

If conflict is present between the RN and GP's clinical decisions, the RN may still make a decision to defer to the GP with the consequence being a blocked or redirected clinical decision. In this

situation the power inherent in the medical role may block the RNs' clinical decision. The RN may also utilise their knowledge to actualise their clinical decision by over-riding the GPs decision.

The three components of generative mechanism one have illustrated the significance of the relationship the RN has with the resident, family and the GP.

The second generative mechanism will now be discussed.

Generative mechanism two. Quality and fiscal constraints: Nursing in RAC

There are three components of the second generative mechanism that influence the clinical decisions the RNs make. These components are the fiscal restraints of available equipment and staff, the delegation responsibilities of the RN and access to knowledge resources.

Component one: Quality of care and fiscal restraints

The RN is in the midst of a contested arena surrounding the concept of quality of care. The RNs' professional requirements promote individually focused and evidence based nursing care provided at least at a minimum level of professional competence. The employer's requirements promote a quality perspective that meets at least minimum audit standards within financial constraints. The financial constraints may restrict equipment availability and also the number of staff and staffing mix that is provided. The resident and family have expectations of a high quality of care which is targeted to meet individual needs and provided at an individual level. Some aspects within this sector illustrate particular constraints that compromise the use of evidence by RNs and the quality of care the profession espouses, and may not meet the resident's and family's expectations.

Equipment resources

In some facilities RN participants found it was not difficult to obtain some equipment, such as specific beds for residents to meet their individual needs, particularly if the equipment averted

some form of risk or avoided a complaint from the resident or family. Often when equipment was provided the manager with some financial control was a RN.

> *If I ask for a bariatric bed or a new hoist, things to aid our care, I have no problem getting them, because I've made the decision, and so then it's deemed that it's necessary . . . and what's better for our residents. So I'm supported in that. (Participant 9, p. 7-8)*

It was more difficult if the clinical decision involved a more expensive wound care product, such as a charcoal based product[16], and the manager was not a RN. The concern raised in the following excerpt is underpinned by the management structure within each residential care setting. The associated issue lies with who holds the authority to make the financial decisions that impact on the RNs' clinical decisions.

> *I do think there's a problem when you have business managers as opposed to nurse managers. I really feel, . . . and it puts a huge burden on the clinical manager because you don't have the authority that the facility manager has, particularly for budget. You're given a certain amount to work within but you don't have the authority . . . Yes the responsibility without authority. And authority might not be the right word, authority sound the wrong word. But no it isn't. It's an authority to make those decisions, and those calls really, or the license to do it. So then it comes back to us and I think there's huge turnover of clinical manager level, at that level of nurses . . . there is a huge turnover of them and I think there's a lot of burnout. We sort of get burdened down with that whole, hey I'm a nurse and I want to do the best that we can, but how can you do it when you've got to cut things back all the time? (Participant 8, p. 4)*

The RN in the excerpt above articulated her concern surrounding the responsibility of the RNs who were attempting to provide best care, as each RN is required to, while others make

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[16] An activated charcoal wound dressing designed to absorb the substances responsible for creating a malodorous wound (Gethin, Grocott, Probst, & Clarke, 2014).

decisions that impact on this ability. Subsequent 'burdening' of the RN through an inability to provide best care is illustrated, thereby compromising the professional and ethical standards of the RN. This participant considered that the responsibility for best practice lay with the RN, yet the authority to provide the resources lay with the manager. A further concern related to a 'lot of burnout' and 'huge turnover' of RNs who are in situations of 'responsibility without authority' and the manner in which this powerlessness affects staffing in this sector. It has been noted that stable leadership enhances the quality of care (Rantz et al., 2003). The high turnover noted amongst clinical nurse leaders in RAC is therefore of concern for the quality of care provided.

GP services

The RN makes prioritising clinical decisions about which residents have the highest priority to see the GP based on identified concerns about health issues as well as ensuring those who need a routine review are assessed. The day of the week is also important so that proactive thinking ensures all relevant treatments or action plans for potential future health problems have been arranged to prevent more expensive medical costs being incurred out of routine hours. This is particularly important each Friday or prior to any public holiday weekend.

> *I think deciding whether or not to refer a patient to the GP . . . today the GP's scheduled to have the round and we have to make a list of which patients will need to be seen by him, specially because the weekend is coming up. (Participant 5, p. 1-2)*

> *"How about you're not going to be here so how about doing an action plan so that we're not pestering you over the weekend, we're not having to ring you every 5 minutes." And he goes "yes OK we'll do that" . . . It's better to have some action plans for various scenarios than nothing, and then panic at the end to get it sorted and it's after hours and what do we do. I don't want to get hammered with an after-hours call out when it should have been sorted out beforehand. (Participant 11, p. 2-3)*

The RNs in the excerpts above were proactively anticipating potential health issues to pre-empt future events that could occur over the weekend. They preferred to avoid the expense of a weekend callout or to have a plan in place to avoid the need for after-hours medical assessments. The RNs also preferred that the GP who knew the resident was involved in medical decisions when possible.

Most of the RN participants felt under pressure regarding access to after-hours medical services. The RNs faced the dilemma of whether the request for medical services was warranted as it was not able to be obtained without an associated cost to the residential care facility. The RN is not able to 'play it safe' and obtain a medical assessment without this associated cost. Key reasons for a resident to be transferred to an acute hospital in the United States of America (USA) include the acuteness of their condition and staff's fear of being criticised or litigated against if the resident is not transferred (Shanley et al., 2011). While processes for legal action differ in the New Zealand context, legal processes from complaints or criticism at organisational level are possible. In the excerpt below the RN expresses fear of criticism, not from the resident or family, but from the facility. Criticism could follow an unwarranted transfer or a warranted transfer that is made without the prescribed approval process being completed. Some residential care homes have a hierarchical system whereby a more senior RN or manager may or must be consulted prior to the RN accessing after hours medical assessment and treatment. Regardless of the consultation process the responsibility and accountability for the resident's care remains with the RN.

> There's a bit of confusion because if we don't refer the patient right away to the afterhours, they would say, "Why didn't you do it?" But then if you do it without asking their permission they would say, "Why did you do it?" But it's very difficult when you're working in the weekend . . . so the burden lies on our shoulders but, yeah so there's. So on Monday, when something happens during the weekend, on Monday you have to

justify what you did, yeah. Like for example, hopefully not, if you ring an ambulance for

somebody that has fallen, bring that person for an x-ray and they don't find anything

then they will ask you, "Why did you have to ring the ambulance and we have to pay this

much?" So, but then if you didn't do it, like what happened . . . everyone was blaming

everyone else and so. (Participant 5, p. 10)

Because she was deteriorating and they have to think about that, they have to think, it's

the weekend, this is going to cost a lot of money. (Participant 2, Int. 1, p. 20)

The RN's clinical decision is clear if the RN finds evidence through health assessments that the

medical assessment is warranted, and if either the RN has the authority to request a GP visit or

ambulance or if the residential care facility agrees to the extra costs. The decision is more

difficult if the evidence is not definitive that a medical assessment is warranted and that the

resident may have, rather than has, suffered harm or is sufficiently unwell. This dilemma

revolves around the RN knowing that their decision will be financially scrutinised by managers

(their employers) but also that they are responsible to the resident and that they (not the

manager) will be held to account for the decision potentially by the NCNZ or the Health and

Disability Commissioner. Cost is therefore a factor for the RN making the clinical decision.

Another issue concerning the RN requesting access to expensive after hours medical services is

if the RN does not consider a GP visit is warranted but the resident or family do. The visit could

be arranged if the resident or family agree to cover the extra cost but the RN is the person who

must negotiate the payment with the family. While the facility manager places the financial

restraints on these referrals due to the cost, it is the RN who implements the manager's financial

imperative. The clinical decision is redirected if the family agree to pay. This resident or family

payment scenario is very useful as it means the RN does not have to justify their actions to their

manager but also has the added security of a completed medical assessment.

Staffing resources

Staffing resources include the number of care staff and the staff mix that is available. The minimum staffing levels for RNs and caregivers are stipulated in the Age Related Residential Care Services agreement between DHB and residential care home. The contract also states that the care home must employ sufficient staff to provide for the health and personal cares of the residents. Despite this contract the staffing levels are generally considered to be low (New Zealand Human Rights Commission, 2012) due to both financial constraints for staffing and also to the limited pool of caregivers and RNs available and willing to work in this sector. If minimum staffing levels are the norm, this normalisation of minimum levels creates the culture in which the RN is expected to 'make do' with what they have. Managing the acuity and number of residents with limited caregiving staff may reduce the RNs' ability to work to the top of their scope of RN practice as the higher level of thinking may be affected by the volume of work and consequent time constraints.

> *this is a . . . facility with a lot of very challenging heavy residents with minimal staffing and you've got to manage somehow. (Participant 2, p. 9-10)*

In many situations, such as above, the RN 'manages' high levels of resident dependency with minimal and mainly unregulated staff. At times the RN may request extra staffing. In the excerpt below the managers responsible for staffing did not deem an increase necessary and when the RN requested more staff they were not provided. The RN documented her concerns, though she did not receive any feedback or have her concerns addressed.

> *'cause I kept writing incident forms that time . . . and it was very difficult 'cause patients were getting up and there's only two of us on the ward. So I kept asking for more staff members but then they keep telling me, not just yet . . . and I think you still manage and all that. So I just kept writing and writing and I haven't heard from them any more so I don't know. (Participant 1, p. 9)*

The RN in the situation above is in the position of holding the responsibility without authority as the RN is held accountable for the care provided but has no or limited influence on the amount of care able to be provided through available staff.

Safety issues for staff were also discussed by participant RNs. Situations occurred especially at night time with low staffing levels and with residents with dementia. The unpredictability of a potentially unsafe situation is evident in the following excerpt.

> *And I've had that experience before, a patient just came up to me and just held both my hands. I couldn't move and these people are quite strong still even with their age and he just kept pushing me and pushed me against the wall, I couldn't ask for help because I was alone. So I wrote it on the incident form about that because it's for staff safety 'cause you can never guess these people, their reaction or their behaviour. (Participant 1, p. 10)*

A RN with appropriate authority may be able to request extra staff to avoid a risk to resident safety. Conversely this type of situation may also be ignored, as indicated in the previous two excerpts.

> *And quite often it's risk averting as well, if you can explain that you've got an irate daughter whose mother has fallen twice during the day, and that mum's had a delirium due to a UTI, and you know that you're not going to be able to put any sort of restraint in there without her doing some damage to herself, then you put extra resources in the way of caregivers to help manage that overnight, or in the morning. Then you're not going to get questioned because, you've basically averted a risk. And that is probably what is huge within our industry, is that we get slammed so often. (Participant 9, p. 7-8)*

The need to avert risk and ensure safe care for which there are no complaints from residents or family members is evident. The RNs face difficulties when complaints are made as they are held and feel responsible but often are not able to make the changes that would increase the quality of care to avoid the complaint.

The RN participants were responsible for variable resident numbers, determined by the unit or facility size and the level of care or combination of levels provided. Rest homes are staffed by caregivers with a RN holding overall responsibility, being available through working on the continuing care hospital wing or by an 'on call' system. Support to the RNs may be provided by other RNs who co-ordinate several areas, but this support is more readily available on a morning shift than an afternoon or night shift. One example of a night shift was one RN to 60 dementia care residents with assistance from three caregivers. Another example of a night shift was one RN to 25 residents in long term hospital care plus ten in rest home level care, with assistance from one caregiver. If a RN or caregiver is off sick they may not be replaced. Some of the RN participants stated they had overall responsibility for the number of residents indicated in the table below.

Table 6

Registered Nurse Responsible for Residents

Facility type	Number of residents RN participant responsible for	Specific conditions
Specialist dementia unit	20 residents	RN on morning shift also completes residents' personal cares. May request assistance from RN who oversees several units
Long-term care hospital	36 residents	RN on morning shift also completes residents' personal cares. May request assistance from one other RN who oversees several units
Long-term care hospital	20 residents	
Long-term care hospital and rest home	25 (hospital) + 13 residents (rest home)	
Long-term care hospital	37 residents	RN has assistance from one other RN (who may do shorter shifts)
Rest home	47 residents	RN as clinical manager for rest home, also on call for long-term care hospital

The total number of residents the RN is responsible for means that the RN may make clinical decisions about each of these residents every shift. The number is very high and therefore prioritising is a key component of making these clinical decisions.

The number of staff fluctuates according to the shift, often with staggered starting and finishing times. If two RNs were on an afternoon shift in a facility one might work 3 p.m. to 11.00 p.m. and the other 4.00 p.m. to 9.00 p.m., or the RN might work with an EN. Others were alone with caregivers. Staggered start and finish times were prevalent for the caregivers and meant that the RN might give three or four verbal handovers per shift, such as at 7.00 a.m., 7.30 a.m., and 7.45 a.m. for a morning shift and 3.00 p.m., 3.30 p.m., 4.00 p.m. and 4.30 p.m. for an afternoon shift. A verbal handover also occurred each time the caregiver finished.

The RNs were mindful that more could be done to improve the quality of care for residents but without further resourcing this was not able to be provided. Registered nurses are in the position of seeing directly the positive impact that increased staffing levels would have on the lives of the residents.

> *I think if you asked any nurse anywhere that's responsible for patients, if you said what could you have, they'd say "a better staffing ratio". Because we can see it has a direct impact on patient care. And I think what has changed in a lot of these places, is that once it was done on dependency levels, now there's a straight number of allocated staff per number. And I think what has changed is that by the time people nowadays get into elder facilities, they are very sick, often palliative, and have a high, high dependency level. And you are actually compromising on their care all the time, because their dependency level isn't a level 1, it's a level 3, but you have, you know your staffing ratios, are for 20 residents, 18 of which might be level 3. And I think that's very poor. (Participant 4, p. 20-21)*

The participant above referred to the increased level of dependency that residents have and the ratio formula that is applied in facilities (rather than dependency levels). As all residents have high dependency levels a higher base staffing level could address this issue. The staffing levels appear to be based on the completion of physical cares for the resident whereas the RNs professional expectation is to ensure holistic care is provided. Holistic care would include meeting the resident's social and meaningful activity needs, promoting mobility, or having sufficient staff to support a resident through an experience of anxiety rather than providing an anxiolytic or psychotropic medication. Holistic care is more aligned with resident and family expectations.

Staffing levels are those set by the facility. The staffing levels intersect with the philosophy of care as they directly impact on the level of care able to be provided. The focus of care planning to keep residents with dementia mobile is based on having sufficient staff to implement this philosophy of care and is evident in the excerpt below.

> *The expectation here is that we would keep people as mobile for as long as possible so we're a very mobile dementia unit. We encourage it, we put people on plans that ensure that at least twice in the morning and twice in the afternoon they've got somebody walking with them and that's all documented, whereas in another place, no they've not walked for months, no we're not walking them, we don't have time. See it is a different expectation around what level of care they're going to give that person and I think that's probably really dependent on the facility, who it is managed by, what their expectations are, you know, whether they consider having people in to do concerts a good use of money or whether they don't, whether they want to put that money into something else. All those things are quite variable. (Participant 4, p. 20)*

If aspects of daily life, such as mobilisation, are not encouraged through adequate staffing levels and as stipulated in the care plan, over time the resident will lose this ability. In some facilities

the promotion of mobility is not the priority and so residents are not mobilised. Whilst individualised care is espoused there is some evidence that the RAC culture is such that this is largely rhetoric (Bland, 2007). One participant commented on the effect of limited staff in relation to the use of medications, and this comment was supported by other participants.

I do think there is room, although the funding is just not there to do it, but I do think it would be more appropriate for our aged population who come into care to have more a higher staff ratio which, I mean I haven't done research, but I'm sure it would decrease the use of sedation and antipsychotics. (Participant 12, p. 7)

The RN in this excerpt describes her concerns about the use of medications to manage the lower levels of staff available to provide care to elders in RAC. A direct link is made between the two.

The influence of quality and fiscal restraints: Actualised, redirected or blocked

The clinical decisions of the RN are actualised through adequate access to equipment and material resources, which are more readily accessible if the financial controller is a nurse manager. The clinical decisions may be blocked if the financial controller is not a RN and holds a different analysis to the RNs analysis of the resource requested. The clinical decisions are more likely to be actualised through the provision of resources if there is a threat to resident safety or a potential complaint from a resident or family member.

Limited access to GP services influences the RNs' clinical decisions which may be actualised, blocked or redirected according to the interplay between the RNs' assessment of the resident, the resident or family's assessment and the extra cost to the facility. Clear evidence actualises the clinical decision. The decision is blocked if the RN does not have strong evidence and does not access medical services due to financial concerns. The clinical decision may also be redirected if the family agree to pay the cost of the medical assessment.

The RNs clinical decisions are actualised if the staffing is available to implement the care and blocked or redirected if not. A clinical decision requesting increased staffing may be actualised

if there is a specific risk to the resident but as risk is present most of the time the reality is that the RN must manage with the staffing provided and the RNs clinical decisions are redirected. Actualisation occurs within the available resources rather than the provision of holistic care if there are insufficient staffing resources. Some RNs' clinical decisions were redirected when they administered 'as required' psychotropic medication in order to manage the resident's behaviour.

Component two: Direction and delegation of caregivers

The RN is the health professional who is responsible for the direction and delegation of care[17] to enrolled nurses (Nursing Council of New Zealand, 2011b) and delegation of cares to caregivers (Nursing Council of New Zealand, 2011a). Direction and delegation is based on five rights which ensure the right activity, circumstances, person, communication and direction are considered by the RN prior to directing and delegating (Nursing Council of New Zealand, 2011a). This requirement is largely rhetoric as the norm is that delegation occurs. The RN also directs the care to ensure appropriate standards and quality of care is given.

> *A lot of the registered nurse clinical decisions and the ENs actually, we have to always be on the floor just observing to ensure that correct manual handling, transferring, privacy, dignity, all these things are being adhered to and followed too. Pull the staff up, we have, you know that's part of our role is keeping it coordinated that these things are done. (Participant 12, p. 5)*

> *. . . and I'd go back and she* [caregiver] *hadn't done it. And that was scary because I thought, you're delegating or directing, supervising . . . and it's not happening. And there was, it wasn't deliberate. (Participant 2, Int 2, p. 4)*

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[17] Delegation occurs when the RN retains accountability for the outcome but transfers responsibility for the action to an EN or caregiver.
Direct direction occurs when the RN is present to guide, monitor or evaluate.
Indirect direction occurs when the RN is available by phone or is elsewhere on the premises and therefore supervises indirectly (Nursing Council of New Zealand, 2011a, 2011b).

The situation above was considered by this participant to be "scary" and illustrates the importance of caregivers being able to complete the tasks that are delegated. Handovers are verbal. The RNs gave very clear and precise instructions to the caregivers in order to ensure the caregiver understood their instructions. They also often asked the caregiver to repeat back what was required of them to ensure they understood the message the way the RN intended. The RN participants were very mindful of their management role in relation to the caregiving staff.

The allocation of caregiver to resident is dictated by the regular turnover of care giving staff so that the easier and less challenging residents would be allocated to the new caregiver. Caregivers do not have a standardised level of knowledge or skill. Some of the caregivers are very experienced however some are also new, having never been employed as a caregiver before.

> *Then also we get new staff members so I'll be the one to delegate the patient load to each of these staff, care staff . . . 'cause of the turnover of the staff so we get new ones regularly so we have to decide which patients are least challenging to give to the new staff members. (Participant 1, p. 2)*

> *As we have a lot of staff who are new, new on the job completely like not just not worked here before but never worked as a caregiver before. So the skill base is different. (Participant 11, p. 2)*

One aspect of direction and delegation that puts the RN at some professional risk stems from the caregivers' role of giving cares rather than being trained to assess residents. The RN holds responsibility for the assessments of the residents, but if the caregiver does not notice changes and does not report them, the RN may have limited opportunities to notice, assess and implement an appropriate plan of action. This situation compromises the health of the resident and relates to the lack of awareness and knowledge of caregivers.

What was tricky was the caregivers in that unit, because I wasn't dealing with qualified staff who kind of understood where I was coming from. And I figured out quite quickly that they don't observe like nurses do, that they don't notice things that nurses do. Even though they were good at their job, they didn't notice anything medical at all. So they were dealing with the behaviours of these ladies that had this early dementia, but missing completely the medical stuff . . . and you then rely on your caregivers to give you information. (Participant 2, Int. 2, p. 2-3)

The caregivers in the excerpt above were able to competently complete the tasks they were given, but they did not have sufficient knowledge to notice significant changes that the resident was showing. This lack of awareness may mean early signs are not identified and early interventions are not put in place.

As well as supervising caregivers RNs also considered supporting caregivers to be an important part of their role. Their clinical decisions included considering how experienced the caregivers were, their prior experience and how they were likely to respond to particular situations, such as a resident's death.

What I take account of to make those decisions, it depends on the staff on and knowing their capabilities to handle things. Like . . . I got [caregiver] to sort it out and not a new person. I didn't know if they'd seen a dead person before, or had they dealt with some one that way, so I just got her in as she was the most senior person on the day and she was able to sort it out and didn't react or panic over it. . . . 'cos I had to leave the room to get the medical equipment and stuff and so I couldn't be there all the time . . . . But if it was some of these younger ones they haven't got the experience and it would freak them out they couldn't handle it. (Participant 11, p. 4)

Some caregivers were unfamiliar with death, especially if they were new, and so the RN would allocate assistance from the caregiver with the experience and ability to manage the situation.

The levels of experience of the caregivers therefore influence how the RN allocates staff to residents and may limit the staffing resources the RN has available to manage clinical situations. Experience levels are also limited by the high turnover of staff in this sector.

An observation made by the researcher during participant observation reflected the blurred boundaries surrounding the roles of staff to people not familiar with the staffing arrangements in this sector and the blending of RN, EN and caregivers in to 'care staff'.

> *. . . visitor says "thanks nurse" to the caregiver then comments to the resident -what a nice nurse she was. No one corrects visitor. (Observation RN 2, page 1: January 2012)*

The role and responsibilities of the RN are clearly distinct from the caregiver. However some residents and visitors were unclear about the differences and particularly alongside the 'scope creep' that has been occurring within this sector. Caregivers may be required to perform some skills that traditionally reside within the RN scope such as medication administration, blood glucose monitoring and catheter insertion (Walker, 2009). The knowledge that is required to interpret the findings of the skill is absent within the caregiver role and the caregiver must be trained to perform the skills.

The influence of direction and delegation: Actualised, redirected or blocked

The RNs' clinical decisions may be actualised if delegated to the caregiver who understands and implements them. The clinical decisions may be blocked if the caregiver does not understand the required tasks or does not implement them. Clinical decisions may be omitted if the RN is not made aware of the need to assess a resident due to the caregiver not noticing the changes or not interpreting them to be important.

As the health professional involved in the care of residents, the RNs are accountable for the outcomes of care (Nursing Council of New Zealand, 2007) however they do not have control over factors such as staffing levels, individual staff characteristics and caregivers' employment.

The RNs' clinical decisions are influenced by these factors, which may block or redirect the clinical decisions.

Component three: Access to knowledge resources

Knowledge resources include the policies and procedures of the facility and the access RNs have to current nursing knowledge and practices. Policies and procedure guidelines that residential care homes provided were considered to be useful by participants, but with limited impact on clinical decision making. The participants found that some policies and procedures provided useful guidelines for new situations that the RN may not have experienced before, or that the RN used as a reminder about the specific process to follow. There were also standardised clinical decisions which stem from the policies of the facility, such as standard wound cares for superficial skin tears or taking neurological observations following a resident's un-witnessed fall. Particular events therefore initiate the RNs' clinical decision based on the policy but these decisions may also be adapted to the particular resident.

Policies and procedures were also considered useful to ensure standards of care were being met. The restraints policy was discussed by several participants who referred to this policy to avoid unlawful restraint of a resident. In other situations a policy was not considered by the RN to be useful and the RNs' professional knowledge was used to assess a resident and initiate the follow up process. The large number of policies was also noted to require time to refer to and to become familiar with.

> *I do use the organisational manual, mainly because it's got all our restraint and enabler information in it . . . And manual handling information. Our policy and procedure manual has all the procedures that we would think of doing here and I do refer to that, yes. Because if I sort of identify what I deem as not being done correctly then I'll refer to that just to clarify for myself whether I need to do something about it or not. (Participant 12, p. 13)*

You can put a policy around the safe way to do a catheterisation . . . what to do if you've got a diabetic resident and there's a policy around what extra things you might need to do if she's sick. So there's easy things to put policies around. But really you shouldn't, you know, good clinical decision making and follow up, you should be doing that anyway. Where policies aren't helpful are in things like, you can't put a policy around somebody's licking the table, what might that mean. Those sorts of things are, they're made solely on your own ability I think to make a decision . . . but policies not helpful, just not helpful at all. (Participant 4, p. 10)

You'd have to work in a place for quite a long time before you could even get your head around, like if somebody walked into here and saw 2 big folders full of policies and they weren't sure about something, you'd only be going to that one policy. Say you had a new RN starting, wasn't quite sure whether they were allowed to catheterise, you know, just go to the policy, see it. (Participant 4, p. 12)

The policy and procedure manuals were therefore utilised by the participants in selective ways in order to identify the correct way of managing some care. They were considered to inform some clinical decisions or to remind the RN of some forgotten knowledge thereby guiding decisions and actions.

There was variable access to current knowledge from up to date textbooks, online journals, and to educational courses for professional development amongst the participant RNs. Some utilised the resources that were available through their facility and used their own, possibly old texts, as well as other RNs, nurse managers and doctors as their only sources of information. Online journals were available to some but not to most.

We've got our own books, but. . . probably outdated . . . Outside of [organisation] *I don't think we use any other resources. Aside from obviously after hours and the weekends*

when management, or when the GPs are not available afterhours. But other than that,

no. (Participant 5, p. 24)

We've got a lot of resources here, we've got a lot of files. There's a residential care

booklet . . . That's quite good. It does flow charts and that helps with your re-assessments,

as to what to do . . . Well I kind of look through it when I'm not at work and sort of pick

up on new things. I read online, I get a lot of emails sent to me from various data bases

about various topics and I read up on those. [Facility Manager] *has the Gerontology*

journals here that you can read up and do a review on a topic. (Participant 11, p. 6)

There's another folder down there called care guidelines and I'm not sure who that's put

out for, but basically it's like a flip chart and it has just flow charts for hyper/

hypoglycaemia, UTIs, chest infections. It's also a really good, you know, if you're really,

really busy so you can go through it, okay I've done that, done that, okay yes, no go here,

go down here. (Participant 12, p. 13)

A lot of my decision making is discussed at handover time when I report back to the next

person and if it's an ongoing problem they'll say well we've done this or that's or that's

a good idea. So we do practice reflection but we don't realise it at the verbal handover.

(Participant 11, p. 6)

Therefore flow charts with triggers to promote a review of actions were noted by RN participants

to be useful as they reminded the RN what to consider when making the clinical decision. Some

RNs received support from their employer to complete courses they felt were relevant to their

own situation, especially if they felt they were 'out of date'. Other RNs did not receive support

financially or with paid professional development leave. All participants referred to other RNs,

RN specialists and those with other expertise as having impact on their clinical decision. Access

to these people as resources was considered to be extremely important for up to date and

current practices as well as for discussion in order to make the clinical decisions. As the RNs are

managing a wide range of clinical situations the ability to consult with others with expertise ensures appropriate advice is available.

> *We might get some ideas from each other, what to do. So yeah, we definitely do that. Or I'll ring maybe the hospital - urology or oncology or gastroenterology - depending on what the problem is, or* [district nursing service]. *I'll ring and ask advice, you know "Have you come across this?" "What would you do in this case?" "Have you got any advice you can offer?" and they do. (Participant 7, p. 14)*

The ability to access resources is clearly an important aspect of making clinical decisions based on best practice. Limited access for some RNs restricts their ability to remain up to date with nursing's constantly evolving practices.

The influence of access to knowledge resources: Actualised, redirected or blocked

Policies and procedure manuals actualise some clinical decisions but do not assist others. They actualise by providing rules or guidelines for care and serve as a reference. Flow charts also provide guidelines or trigger points to assist clinical decision making. Clinical decisions are made based on the RN's knowledge as well as access to relevant knowledge or cues in clinical areas and as the RNs' knowledge is fallible, access to resources is important to actualise effective clinical decisions. Clinical decisions are made with available resources but the clinical decision may not be optimised. They may also be blocked if the required knowledge is not available.

Summary of chapter seven

The layer of 'the real' is of great interest to the critical realist researcher and has been the focus of this chapter. The three components of the first generative mechanism have explained the significance of the RNs' relationships with the resident, the family and the GP. The competent or partially competent resident retains autonomy for the decisions they have the capacity to make. In RAC a lack of competence amongst residents is prevalent, meaning others must make decisions on their behalf. The best interest of the resident is to be pursued, although defining

their best interest may be contested amongst the RN, family and GP. The autonomous resident influences the RNs' clinical decisions which are actualised through alignment with the resident's wishes. The resident who does not have autonomy influences the RNs clinical decisions as they are actualised only if the family, GP and RN's decisions are aligned. If they are not aligned the RNs' clinical decisions are redirected or blocked and the RN works to align them. The relationship with the GP is also significant as alignment actualises the RNs' clinical decisions. Disagreement with the GP's clinical decision may actualise the RNs' clinical decision if the RN overrides the GPs decision, or be blocked or redirected if the RN follows the GP's clinical decision.

The three components of the second generative mechanism have explained the significance of the tensions between quality and fiscal constraints, the impact of direction and delegation of ENs and caregivers and also the importance of knowledge influencing the RNs' clinical decisions. If sufficient equipment and staff resources are present the RNs' clinical decisions are actualised. If they are not present the RNs' clinical decisions are blocked or redirected. Direction and delegation of ENs and caregivers may actualise, block or redirect the RNs' clinical decisions and some may be omitted if relevant data are not noticed by the caregiver. Access to current knowledge also actualises the clinical decisions. It is evident therefore that there is interplay between the generative mechanisms in the formation of the RNs' clinical decisions.

Specialist gerontology nursing: The generation of clinical decisions

Introduction

This chapter will explain the third generative mechanism, 'the specialist nature of gerontology nursing' through a continuing analysis of the underlying structures, powers and relations that contribute to actualise, block or redirect the RNs' clinical decisions. The critical realist layer of the 'real' is therefore the focus of this chapter. Literature will be referred to, to enhance the explanation of this third generative mechanism. This chapter will also provide an explanation of the ways in which the three generative mechanisms influence each other in the clinical decisions made by the RN.

Generative mechanism three. The specialist nature of gerontology nursing.

The third generative mechanism, 'the specialist nature of gerontology nursing', incorporates three components. The first component is the specialist nursing knowledge and skill, including health assessment knowledge and skill, required to manage the issues residents experience in this clinical context. The second is the ethico-legal and professional deliberations of the RN and the third component is the RNs' moral agency. The combination of these three components results in the RN 'thinking like a gerontology nurse'[18] which informs the specialist nature of nursing elders in RAC.

Component one: Specialist nursing knowledge and skill

Gerontology knowledge and health assessment knowledge, while intertwined, will be explained separately in order to provide explanation of aspects of specialty knowledge. Following these

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[18] With acknowledgment to Tanner's (2006) phrase "thinking like a nurse" (p. 204).

explanations the influence of the RNs' knowledge in actualising, redirecting or blocking the RNs' clinical decision making will be discussed.

Gerontology knowledge and skills

The knowledge and skills required by RNs in this sector is specialised and is focused within gerontology. This required knowledge is evident in the excerpt below, as one of the participants who was a highly experienced expert RN in surgical nursing clearly identifies. This RN highlights the need for appropriate gerontology knowledge and skills in order to care confidently for residents.

> *So when I was looking at gerontology I was very unsure that I was actually going to fit . . . I went into another facility to do that for six months. And in that time I thought, "No this isn't me," because that was much more on the floor and I didn't have enough background experience, I didn't feel confident enough. (Participant 2, Int. 1, p. 3)*

The RNs must have nursing knowledge of common medical conditions and the medical conditions that are prevalent amongst residents in this sector. Conditions associated with a decline in function and also with mortality for elders are mental health issues, sensory losses and physical health issues (Min, Elliott, Wenger, & Saliba, 2006). The RN utilises knowledge of medical conditions to inform their clinical decisions regarding access to the GP for medical assessment and for appropriate nursing interventions.

> *I think, one of the biggest things is the knowledge you already hold, about disease processes . . . working through doing recordings, then from those recordings that leads you to another decision, are they all normal, if something is abnormal then that takes you into another decision making area. OK what do we do with this - do I wait 15 minutes take it again, do I need to do something a bit more urgent, have they, you know perhaps somebody with chest pain, the anginine, the spray has relieved it, I need to go back in 5 minutes and just check they're not getting it back, so one decision actually tumbles into*

other decisions. So use the knowledge that you know, your medical knowledge. Often

using just your experience of something, your experience of working with the knowledge

of how chest pain might play out, or a CVA might go on to extend or resolve within a

space of time . . . So you are using your clinical knowledge, your existing history of your

work. (Participant 4, p. 1-2)

Knowledge surrounding geriatric syndromes is also important as the resident is at significant risk of deterioration when a health challenge arises. The RN completes relevant health assessments and interprets findings in the context of any geriatric syndromes that are present. The RN then makes clinical decisions about referral to the GP.

The RN is also influential in the identification of the turning point for a resident from a disease treatment phase to a palliative care phase at the end of life. Identifying this point is important so that the resident and family can make decisions about the options they may have. A medical assessment by a GP is particularly important for these decisions. The decisions include ethical balancing of beneficence and non-maleficence. The RN may initiate this conversation with the GP, the resident and family members.

> *These are elderly people . . . who often are medically unwell with complex co-morbidities*
>
> *and they should be given the best care they can, until that is not appropriate any longer*
>
> *as far as medical intervention goes. (Participant 6, p. 4)*

> *We can't make any decisions without discussing it with them* [family], *you can put your*
>
> *reasoning's and whatever, but the bottom line comes down to, especially if we've got*
>
> EPOA, *their decisions but hopefully these decisions have been made long before we get*
>
> *into any sort of care that needs a decision, and nine times out of ten that happens. So*
>
> *mum had a chest infection 6 months ago, we put her on antibiotics but she's got so much*
>
> *frailer now, she's got another chest infection, she's really lost interest in food and fluids,*
>
> *all the comfort we can give her isn't working. So we make a decision that we won't treat,*

but that sort of decision was probably made 6 months ago, so we have a discussion about

it. (Participant 9, Int. 1, p. 8-9)

At what point do you not send a 90 year old off to hospital, at what point do you do that

or not do that? We have to frequently be guided by what the family want and what the

resident wants, and sometimes the GP will say I'm not sending that demented 95 year

old off to have IV antibiotics because it's not going to do any good. (Participant 8, p. 9)

In the excerpt above the GP may be making an appropriate decision as the medical decision may be that the treatment will not be effective. However withholding of treatment must be carefully considered and discussed in order that an appropriate ethical and legal decision is reached with the best interests of the resident to the fore. The RN, GP and resident or family may all have different perspectives. In these situations an advance directive may prove helpful.

Knowledge of pharmacology related to the older person is also important in this sector as medication use is prevalent. Four medication rounds per day are completed by the RN or delegated to the EN to administer medications to residents and they are time consuming. The 7.00 a.m. and 5.00 p.m. rounds take approximately one hour each to complete and at 12.00 midday and 8.00 p.m. they take approximately 45 minutes. In rest home settings the caregiver may administer some medication if they have completed the relevant training. Nevertheless overall medication administration requires an in-depth knowledge of the medication related to the pharmacodynamics and pharmacokinetics of the medication and so close supervision is required. The number of medications prescribed for residents also creates issues regarding interactions of medications as well as concerns about a heightened side effect profile for elders. Registered nurses need in-depth pharmacological knowledge in order to monitor residents for any interactions or side effects.

Medications admin time is 5.00 p.m. to 6.00 p.m. Antiemetics first – 4.15 p.m. At 5.00

p.m. RN is in the dining room area with trolley with medications in packets in

alphabetical order . . . Some crushed. Gives meds to each resident. Checks on pain levels

and if meds effective. Warfarin not here yet. Will bring when arrives. Goes to each

resident. Observes. Asks questions like pain, less redness, not all related to meds but

many are. Gives meds out to all residents – so eyeballs every resident. (Participant

observation 2, RN 4, page 1-2: October 2012)

The clinical decisions regarding administration of PRN medication is influenced by knowledge of the resident. If the RN has identified a successful intervention amidst other interventions they are likely to follow the same pattern. This is particularly important in the situation when the resident is unable to provide the relevant information.

. . . giving PRN medications, because if the patient presents a behaviour, you have to

decide whether it is because there are needs that have not been met, like he's thirsty, he

needs some toileting. And if it doesn't work then you'll try the PRN medications, but other

times when you get to know the patient, as soon as he presents that behaviour you give

the PRN medications right away, you don't wait until he's been fed or, because it doesn't

work, yeah. (Participant 5, p. 8)

Reflecting international concern regarding the use of antipsychotic medication for elders in residential care settings (National Institute for Health and Care Excellence, 2015), some RN participants expressed some reservations regarding the use of anti-anxiety medication. Some residents exhibited 'sun-downing' behaviours in which they became increasingly agitated and anxious as the afternoon turned to evening. The timing of a resident's anxiety influenced their management. The RNs discussed this as an ethical dilemma as they balanced the resident's needs for reduced anxiety levels with the needs of other residents who require attention at the same time, in their clinical decision about whether to administer PRN anti-anxiety medication. The two excerpts below illustrate the difficulties the RNs face.

And they've either been put on it regularly and/or they have it PRN and again it's a nurse's assessment of the situation as to whether to give the PRN . . . we've got two residents here. One who is on the psych referral waiting list and she, as soon as she gets that look in her eyes, that tenseness on her face, it is appropriate to give her PRN anti-anxiety. Because once she's in an anxious state no matter what inputs you do, and we have tried it, everything, it just will not relieve her. So she's one that we do get in very, very early. The other one is a lady recovering from a hip fracture from a fall . . . Much more confused, anxious, she has got dementia so I mean that has worsened. Now she's one that would normally respond to distraction, gentle one-on-one input, soft music, a cat . . . and we're really trying to cut back on her PRN, yeah. But I mean I can understand exactly where the afternoon girls are coming from if it's say right on tea time, trying to get tea out, residents want to go to bed straight after tea. I can understand exactly where the registered nurse is coming from to make that decision, Yes we need to give her some PRN to give us time to be able to care for the other residents and not only that she has our attention. So I mean it's a very difficult sort of, the timing of the anxiety is also very hard and does play a role in administration of the PRNs . . . also the simple things like food and fluid input, if that person's really anxious they're not going to get it, so that's another reason for anti-anxiety, is to calm the level of anxiety so that they can have a decent food and fluid input. (Participant 12, p. 8-9)

So if [resident] *is obviously quite distressed, anxious, agitated, which we had one the other day. So you go and see what's going on, you assess the situation, talk to them about it if they're able to talk or they're trying to, and normally it's something from the past that's caught up on them. They're ruminating about it, well that someone's upset them, depending on the situation. So you have a talk to them, try to alleviate it, take them away from that situation where it's distressing for them and you wait and see and give them a cup of tea, or just talk to them for about five or ten minutes, see where*

they're at. If they're not able to, maybe, well my mental health training is you'd say take

them to a room and have a bit of a chat or something, just time out, low stimulus

environment. If that's not able to happen then you might offer them a bit of PRN

quetiapine or lorazepam. (Participant 3, p. 14)

As is evident in the two excerpts above, the RN must manage the situation of an anxious resident with limited staff numbers, often at a time that is very difficult due to high resident needs for attention. Knowing the resident, as indicated in both excerpts, assisted the RN to make the clinical decision. This clinical decision should be made in the best interests of the resident. However the RNs' aim of alleviating distress for the individual resident must be prioritised against the aim of alleviating 'residential care home distress' to avoid distressing other residents and caregivers.

Core nursing knowledge is also required in this setting. The RNs draw on their previous experiences when formulating their clinical decisions, as articulated by one participant who stated "this just goes back to my sort of nursing history, I'm good with bladders. I'm good with hearts" (Participant 12, p. 5). This RN was confident in her competence with cardiac and urinary nursing assessments and management. Each RN holds different knowledge levels of specific aspects of nursing practice. Some RNs find managing mental health issues can be challenging, especially if they have a condition in their scope of practice due to their initial registration as a 'general and obstetric nurse'. This condition is stipulated by NCNZ.

Mental health to a lot of us is challenging because I'm hospital trained all those years

ago . . . When it comes to the psychiatric things here, I guess it's the dementia, it's the

behaviours associated with dementia, which are yes they're challenging . . . They involve

all those human emotions and unpredictabilities and all sorts of things don't they.

(Participant 6, p. 16)

The RNs also required knowledge of uncommon skills which they do not practice regularly. Following transfer from an acute hospital the resident's care may incorporate amputation care, wound management, management of vacuum assisted closure (VAC) wound dressings, cast care from orthopaedic issues, bladder washouts, suprapubic catheter care and percutaneous endoscopic gastrostomy (PEG) tube feeding. The RN needs to hold a broad range of knowledge and skills to be able to effectively manage a very wide range of medical and surgically related care.

> *Policy for residential care home includes the management of gastrostomy, tracheostomy and pleural drains. Policy manual is detailed and illustrates the specific advanced specialist knowledge required in the gerontology sector. Useful especially if new or new to a particular procedure. Shows that a broad and high skill level is required of RNs to manage ongoing and acute resident situations as well as management of the staffing, documentation and facility. High level of assessment, critical thinking and management skills are needed. (Document Review comments: Rest Home 3, page 1-2: April 2013)*

In RAC in New Zealand some RNs have identified their own need for more knowledge in order to support their nursing practice (Carryer et al., 2010). To address the need for further knowledge and education in more recent years DHBs have provided RNs in RAC with direct access to RNs who are specialists in specific areas of practice such as diabetes management. This timely access to specialist RNs has provided support for the RNs in their management of chronic diseases. The participants actively made use of the supports that were available.

Some RNs who registered overseas have not experienced caring for elders or a RAC environment in their home country, and so do not have gerontology experiences to draw on, prior to working in New Zealand. Also, for some, the level of clinical decision making required in New Zealand is much greater than their home country where doctors were the decision makers and RNs implemented the doctors' decisions. These participants talked about the difficulties they

experienced and the severe pressure they felt under initially, when they were expected to assess residents, analyse the information, and present the 'big picture' to the GP. In New Zealand the RN holds this level of responsibility.

> *When we started it was really hard for us 'cause we never did this sort of nursing before. But we've been here five years so. (Participant 5, p. 19-20)*

> *There's a very huge gap of decision making, in* [home country] *it's always up to the doctor . . . But here it's more like the doctor asks us, "What do you think I should do, or what do you think she should have?" . . . it's very collaborative so we work side by side but back home the difference is that we have to wait for the doctors, so it's quite different, yeah. (Participant 1, p. 22-23)*

Another factor that affects the clinical decision making of some international RNs is the lack of knowledge of the New Zealand acute health sector and what the residential care setting is able to offer, causing some clinical decisions to potentially be not in the best interests of the resident. This is especially so if the context is one in which the resident's health issues can be managed with decision making occurring in the residential care home rather than in the acute care sector.

> *We have got a lot of nurses that trained* [overseas], *they come over and do CAP[19] and they're very good nurses. But they have no context of what happens within our acute setting, and what our aged care facilities can manage. (Participant 9, Int. 1, p. 2)*

In this sector and in some facilities there is minimal support for RNs. Some RNs with experience consider it is not a safe place for a new graduate RN to begin a nursing career due to a lack of supervision (Carryer et al., 2010). Novice RNs do not have a wide range of clinical experiences to draw on and whilst they all meet the generic competencies of the RN they do not have specialist knowledge. The situation is similar for RNs who are new to this country but do not receive

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[19] Competence Assessment Programme (Nursing Council of New Zealand, 2014a)

mentorship to support their developing nursing practice and who are often making clinical decisions alone. Some experienced participants considered some RNs who initially registered overseas to be professionally vulnerable and to require support to protect their registration as well as the residents' safety. They also considered that working as a caregiver when the RN was awaiting registration in New Zealand was effective at exposing the future RN to the residential care environment but not to the level of clinical decision making required by RNs in this sector. The level of mentorship that is considered by experienced RNs to be required to adequately support many overseas RNs who subsequently register in New Zealand is not available in RAC.

> *They can ring, and there's always somebody on call, but it's not the same is it? It's not the same as working alongside somebody and somebody coming in with you and saying, well have you thought of this . . . Absolutely, absolutely on their own, and they've got to make these decisions. (Participant 9, Int. 1, p. 5)*

In New Zealand the evaluation of a pilot gerontology acceleration programme, trialled with 14 RNs, has reinforced the need for support as the results illustrated the key importance of mentorship (New Zealand Institute of Community Health Care, 2015).

Health assessment knowledge and skills

Thorough in-depth physical and cognitive health assessments are foundational to many of the clinical decisions the RNs make in RAC. Several participants referred to the need to gain these important skills and to maintain them through ongoing practice so that they were useful to the RN and the residents.

> *Another nurse and myself are doing a postgrad* [course] *also on health assessment actually, 'cause that's one of the most I think needed areas here. (Participant 1, p. 1)*

> *I'm doing an Adult Health Assessment course . . . so it's just good to refresh, because my goodness me I'm so out of touch, but I'm practising with people I'm looking after, going*

out there and I'm learning, trying to relearn, you forget so much. (Participant 3, p. 14-

15)

In the following excerpt the participant illustrates the importance of applying knowledge and skills to remain competent and confident.

Even though I've done a health assessment course years ago I don't do the full health

assessment, I'm not confident doing the JVPs any more, not confident listening to all the

heart sounds 'cos I don't do it every day. Like I used to be able to do ECGs and started

reading them but I wouldn't know, I would know how to do one but I wouldn't know how

to read it any more. (Participant 11, p. 4-6)

The excerpt above illustrates the importance of ongoing practice of skills and application of knowledge in order to retain confidence and to actualise clinical decisions.

Specialist nursing knowledge and skills underpin the health assessments the RN makes, the interpretation of the health assessment results and the subsequent interventions and clinical decisions. The RN uses health assessment skills to identify the resident's individual need for assistance and combines these assessments with specialist gerontology knowledge to interpret the findings. The RN interprets these findings using relevant knowledge of potential outcomes to make clinical decisions on the appropriate interventions. An example is provided in the excerpt below in which the RN participant describes the potential for a head injury from a fall if the resident has hit their head when falling, and the neurological observations (neuro obs) which the RN uses to assess the resident appropriately.

If anybody falls especially if it's an unwitnessed fall we have to do a thorough head to

toe assessment and then we do neuro obs for twenty four hours and observe the patient

for twenty four hours and record our findings, or if there's any deviations or any

abnormalities we have to report it right away. (Participant 1, p. 4)

The RN also needs to hold knowledge about atypical presentations as many elders show no or atypical symptoms. Three examples relevant to this context are infections, in particular urinary tract infections, and atypical symptoms of both depression and myocardial infarction. The classic symptoms of urinary tract infection (such as urgency, frequency and suprapubic pain) are often not present in residents of residential care facilities, and whilst pyuria may be present this is not indicative of urinary tract infection but is indicative of bacteriuria (Liu, Broden, & Hatch, 2013). The distinction is important as asymptomatic bacteriuria does not require treatment with antibiotics as it is relatively harmless but a urinary tract infection requires careful management and probable treatment with antibiotics (The Best Practice Advocacy Centre New Zealand, 2015).

> *. . . sometimes they do not present, for example UTI, you do not know when the patient has got a UTI but then if you know him well you know there's something different . . . Yeah a change in a behaviour, suddenly he becomes a bit confused and aggressive and he's not normally like that. (Participant 5, p. 8-9)*

In another atypical presentation, depression may present with the absence of major mood symptoms but the presence of somatic complains (such as restlessness, irritability, and motor agitation) (Manepalli, Thaipisuttikul, & Yarnal, 2011). A further health issue for elders and the RNs is that myocardial infarction has an increased incidence of being silent in elders compared to younger adults (Valensi, Lorgis, & Cottin, 2011). These examples illustrate that identifying changes, analysing subsequent health assessment findings, interpreting their results and subsequently taking appropriate actions are complex for the RN. In part these difficulties explain the RNs' desire to 'know the resident' in order to more effectively notice and manage subtle changes that can be compared to previous health or health episodes.

In-depth health assessment data are now available about all residents through the comprehensive InterRAI Long Term Care Facility assessment tool (National Health IT Board, 2015), completed prior to admission to the residential home. The RN must be able to utilise this

data effectively and interpret any deviations in the context of the specific resident. The RNs value knowing the resident in order to interpret assessment data, for example difficulties with mobility from musculo-skeletal changes may previously have been present with subtle deterioration or change occurring.

The RN must also have in-depth health assessment skills in order to effectively manage the acute medical situations that arise in this context, in particular as there is no immediate onsite medical assistance. The RN must decide the appropriate response such as whether to call an ambulance, whether to urgently consult the GP or whether the issue can wait until the GP next visits. These clinical decisions are based on the health assessments the RN completes and the RN is accountable for them. Some RN participants utilise health assessment frameworks, such as a head to toe assessment framework.

> *So we assessed her, on neuro obs and everything and made the decision that it was night time and we couldn't wait for morning because she was like crying and she was in pain. So that's when we decided to call for an ambulance and sent her to the hospital. And then they found out that she had a fracture, so it was a good thing that we did that. . . through assessment from head to toe we found out there's something wrong with her leg or with the hip, so that was what we got from the assessments. (Participant 1, p. 4).*

The RN must also have health assessment knowledge in order to effectively interpret any changes in the resident's condition. Skilled surveillance of the residents is required in order to notice subtle changes. The RN must try to piece together their assessment data in order to interpret the significance of any symptoms as well as what they may be indicating. Many elders show no or atypical symptoms of diseases making it more difficult to identify changes, analyse health assessment findings, interpret results and subsequently taking appropriate actions. The RNs' desire to 'know the resident' provides more effective observation and management of

subtle changes. The following excerpt illustrates the RN's awareness that vital signs may not be a reliable indicator of change and the significance of making further health assessments.

Do recordings [vital signs] *normally, sometimes that is masked anyway, a lot of the times, so you've got to make that call but you sort of know when things aren't quite right, you can tell the person's a bit flat, or a bit flushed, or whatever. So that physical assessment and also the cognitive functioning as well. (Participant 3, p. 16).*

Health assessment skills are also utilised when an action plan for a particular health issue has been documented by the GP and the RN assesses that the relevant criteria have been met. The RN will contact the GP and commence the relevant medication, usually subject to discussion with the GP. This process prevents a delay in initiating treatments as often the GP is not readily available to visit the resident.

We have action plans like for a chest infection and you weigh up whether that should be started, does it meet the criteria. And other times I've started them on infection control 'cos they've met the criteria (Participant 11, p. 14).

. . . short of breath, I look at their ankles, I might just check their obs at that stage, blood pressure, pulse, resps, look at the ankles and do all of that, how are you feeling is this different from before and then I'll decide, right she just needs a nebuliser, so I'll get that done. And then we'll see what she's like after the nebuliser, if the resps come down whatever. So in that case it's in the notes and when the GP does his next visit, I'll say we've had to use a nebuliser a bit more often, but also we've got the plan there from the GP that says, check the weight if the person's weight has gone up, you can give an extra frusemide etc. If, that same person, short of breath, given a nebuliser and not much effect, still resps are up, maybe the weight hasn't shifted because we'll do a weight too, but maybe it's not shifted, but the ankles or the oedema's gone up the legs, then I will ring the GP and say, look this is what I've assessed, can I give her the frusemide anyway

or would you like to come and see her? Or I think I'd like you to come and see her.

(Participant 7, p. 9)

The health assessments and the interpretation of the results are important in the excerpt above as this participant uses them to decide the next course of action. The responsibility to assess the resident lies with the RN. Caregivers are not trained to complete in-depth physical and mental health assessments. The RN must make the health assessment decisions and inform the GP of all relevant data that informs the medical decision the GP makes.

The influence of the RNs' knowledge: Actualised, redirected or blocked

The individual RNs' level of base nursing knowledge, gerontology knowledge and their in-depth health assessment knowledge and skills influences their clinical decisions. The clinical decisions are blocked or redirected if the RN does not hold the relevant specialist gerontology experience or knowledge, and actualised if this knowledge is held. If the RNs do not hold the requisite knowledge they will often self-redirect to confer with other RNs or the GP to gain sufficient knowledge to make the clinical decision. The RN may lack prior gerontology experience, or may not hold the level of clinical decision making skills required for this sector. Novice RNs, and those new to aged care in New Zealand may experience blocked or redirected clinical decisions due to a lack of knowledge and skills as well as a lack of support and mentorship.

A situation of risk is present if an omitted health assessment, incorrect interpretation of assessment findings, or knowledge omission leads to a clinical decision that medical intervention is not required and may result in detrimental outcomes to the resident. There is evidence from the findings presented so far that some detrimental outcomes occurred and also that many were averted, however it is not evident if poor outcomes arose from actualised clinical decisions.

Component two: Ethico-legal and professional deliberations

The second component of generative mechanism three is comprised of the ethico-legal and professional aspects of nursing practice. Registered nurses' clinical decisions are informed by

ethico-legal aspects of nursing in the RAC context as elders in residential homes are vulnerable, may have impaired cognitive abilities, and are ultimately at the end of their lives. The RN must synthesise knowledge from New Zealand laws and ethics as principles on which to base their clinical decisions, however each decision will be individual.

The NCNZ is responsible for ensuring each RN is competent and fit to practice nursing as a registered nurse as stipulated in the Competencies for registered nurses (Nursing Council of New Zealand, 2007). In RAC the RN must be competent to ensure a therapeutic relationship with the resident, to nurse in a negotiated partnership with the resident including acknowledging the family's view point and their participation, and to communicate effectively with the resident and other team members (Nursing Council of New Zealand, 2007). The professional conduct of the RN is also stipulated by the NCNZ through the Code of Conduct and is based on the values of respect, trust, partnership and integrity (Nursing Council of New Zealand, 2012a).

Further key legal frameworks, discussed in chapter one, comprise the Code of Health and Disability Services Consumers' Rights (Health and Disability Commissioner, 1996) and the Health Information Privacy Code 1994, 2008 (Privacy Commissioner, 2008). The RN has a duty of care to residents due to their dependence on the RN for clinical decisions regarding their physical and mental care and their wellbeing (Johnson & O'Brien, 2010). Registered nurses are very aware of the right of the resident or family member to complain about their care, as indicated in the excerpt below.

> *Sometimes we get, you can see staff very scared of what the families will say because they don't want to be hauled in front of a committee of some sort, "Well I'm going to complain to such-and-such," . . . now you're worried about, "Oh will this have some consequence?" (Participant 3, p. 11)*

The rights that consumers hold must be met by the RN (as well as other health professionals and the residential care provider). As evident in the excerpt above RNs are very aware they may be

the subject of a complaint made against them to the Health and Disability Commissioner. Examples of complaints that have been made include 'inadequate care plan', 'inadequate assessment and/or monitoring and/or response', 'inadequate and/or incorrect treatment', as recorded on the Health Practitioners Disciplinary Tribunal website (www.hpdt.org.nz).

Generic laws related to homicide are also important. One aspect of law that RNs in this sector must adhere to are situations in which medical actions aimed at relieving pain or distress may hasten death, such as the administration of narcotic pain relief medication. In most situations, even if death is considered to have been hastened, if the primary aim is to relieve pain or distress, this would not be considered homicide as the death is considered to have been caused by the underlying disease or illness, hastened by the medication (Skegg, 2015c). It is clearly illegal for a RN or any other person including GP and family members to actively end a resident's life.

Registered nurses must also consider 'omissions to prolong life' in which life prolonging treatment is withheld or withdrawn. The RN must still provide for the 'necessities of life' and has a duty to provide this care (Skegg, 2015d). 'Necessities of life' include the provision of food, warmth, basic medical treatments, and in recent years have included treatments such as dialysis, artificial ventilation and artificial feeding (Skegg, 2015d). In the aged care context this is an important issue, and especially so if there is any disagreement between health professionals and family members about interventions that are considered 'appropriate'. Dialysis and artificial feeding are not considered necessities of life if they "would be ineffective in prolonging the patient's life" (Skegg, 2015d, p. 665). The provision of PEG feeding may therefore fall into both the category of being a necessity of life (if it is effective) and of not being a necessity of life (if it is ineffective in prolonging life). Antibiotics may also fall into both of these categories. The RNs' personal thinking and professional actions may differ as indicated in the excerpt below.

> *What quality of life and for goodness sake some of these are in their nineties, why are*
>
> *we doing this? . . . We could go sticking PEGs in a lot of our elderly who are frail and*

underweight. Why? you know, but that's my personal, it's not a clinical. And my clinical

practice certainly doesn't alter because of my personal. (Participant 12, p. 5-6)

In actual clinical practice it is a regular occurrence that a person is allowed to die without every treatment possible being provided. There is a general acceptance in New Zealand society of limitations to life.

A useful set of ethical principles for New Zealand nurses is provided by the New Zealand Nurses Organisation in the Code of Ethics (2010). The concepts included are autonomy, beneficence, non-maleficence, justice, confidentiality, veracity and fidelity in relation to the client-nurse relationship. Through 'autonomy' the person is assumed to be self-determining. Through beneficence the RN aims to 'do good' and through non-maleficence aims to 'do no harm'. Justice has the underpinning value of treating others fairly. Confidentiality ensures privacy. Veracity provides for honest and truthful behaviours by the nurse and fidelity requires the nurse to be faithful through their commitment to recipients of care. These values are well recognised amongst RNs.

The concept 'autonomy' is one basis for the RNs' ethico-legal positioning. Bland (2007) found that individual autonomy was compromised in residential care settings in New Zealand through inflexible routines that prevent choice by the residents. A contemporary approach to address residents' lack of control has been implemented in some care facilities in New Zealand where a more home like atmosphere has been created to promote self-determination (Manchester, 2011). Agich (2009) has proposed an extended framework for residents living with dependencies in residential aged care whereby autonomy is considered to be beyond self-determination and is inclusive of "dignity and self-expression" (p. 184). The promotion of autonomy is present through the RNs' support of the resident's decision.

The laws, professional standards, and ethical principles provide theoretical frameworks for nursing practice but their application in clinical practice may be challenging. Legal and ethical

decisions may become complex and contested when many parties (RN, caregivers, resident, family members, managers) hold different sets of values that generate their perspectives, in particular regarding treatments and care to be provided. The RN in RAC has multiple legal and ethical responsibilities, and is accountable to many interest groups who may hold different views. The application of the 'four-box method' (New Zealand Nurses Organisation, 2010) provides a process for clinical decision making, but does not provide the decision. The 'four boxes' comprise the clinical issue that is provoking the decision, the resident's preferences, the quality of life and the contextual features present. The four aspects are weighed up in order for inform a decision. The RN participants considered a communally agreed process and outcome for decision making between family, GP and RNs was the most suitable.

> *You just make sure you've got all your ducks in a row really, that you've got all your people informed and everybody knows, and if you have a squeak of indecision or somebody not happy or comfortable, then you re-look at what you're doing. (Participant 9, Int. 1, p. 2)*

There are specific ethico-legal issues that RNs must manage in RAC. They must have a working knowledge of restraints and enablers, levels of competence for resident's autonomous decisions, advance directives and also EPOA requirements and processes.

Restraints and enablers

Resident safety may be promoted through the use of restraints and enablers to prevent the resident from falling from a bed or chair, but they may also pose a risk to the resident as well as restricting their autonomy. Restraints or enablers may be initiated by the resident, family or the RN and are used only to promote safety. Standards for the use of restraints or enablers are set by Standards New Zealand in the Health and Disability Services (Restraint Minimisation and Safe Practice) Standards (NZS8134.2.2008) (Ministry of Health, 2008b). The risk associated with their use must be identified. The same equipment could be a restraint or an enabler depending on

whether the resident is able to remove or get out of the restraint. A bed side rail could be a restraint if the resident is unable to lower it or an enabler if the resident wishes to have it up and is able to lower it. The decision to apply restraint is not taken lightly, and is usually a communal one that involves the resident, designated RN, GP, and family members. The process requires documentation that RNs find very time consuming as described in the excerpts below.

> *Oh I hate the paperwork with restraint . . . And then there's just various monitoring forms that we have to fill out, we have to identify risks and have them on the care plans and the restraint form and what we're doing to minimise those risks. It's a lot of paperwork. (Participant 12, p. 12)*

> *To put a bed rail up on someone because they're falling out of bed takes about 5 pages of documentation and ongoing monitoring forever and a day . . . Someone might say "I want mum to have a lap belt" and it might be someone for example with Parkinson's whose a wriggler, and you'd say "no we can't put a belt on that chair because the danger is strangulation" and that sort of thing. (Participant 8, p. 10-11)*

The management of risk and promotion of safety is paramount. The family member and the RN may have different interpretations, as is evident in the second excerpt above. These differences reflect discrepancies between lay and professional knowledge and the RN must provide information to the family members to explain the risks.

Competence

As discussed in generative mechanism one, if the resident is competent then the resident retains the right to consent or not consent. Autonomous decision-making is dependent on the resident having the ability to comprehend the information, the nature of their unique situation, to analyse alternative options and consequences and to communicate their decision to others (Astell et al., 2013). Some people are assessed to be partly competent. The power balance and responsibility shifts if the resident lacks competence. The NCNZ (2012a) reiterates the Health

and Disability Commissioner Code of Health and Disability Services Consumers Rights stating that if the resident is not competent to give consent then the RN must provide care that "is in the best interest of the health consumer" (p. 17). The RN must make clinical decisions about the care provided to a resident with reduced competence applying the ethical principles of beneficence and non-maleficence. In the following excerpt the RN cared for an elderly woman who had a cerebro-vascular accident (CVA) with subsequent neurological compromise and depression. This woman experienced seizures following the CVA and had medication prescribed to prevent further seizures. She had been refusing to take the medication thereby increasing the risk of seizures. The RN changed her position over time regarding how much emphasis to place on the administration of this medication.

> But she's been making the decisions a bit lately and has decided not to take them. My stance now with all of this, because it's been going on for quite a while, about not taking meds, needing to have medication to avoid seizures . . . They have the choice of whether they take this or not, even if they've got dementia, they still have a choice. But I've now recognised that choice more if you like, because the Dr's probably convinced me that this little lady does know a fair bit of what's going on, and maybe she's telling me, she tells us "go away leave me alone", so now I think ok this is your choice, I'm going to inform the family that there's a chance she may have a seizure, because we may not get the medication in. So the decision making in this case with the help of the GP, was by gosh, I think I have been trying too hard, for her sake . . . now I've backed off, and it's actually more pleasant. Because maybe if we back off a bit, this little lady will then think oh it's alright I can take my medication, they're not going to hassle me. So it was always as I say with the best of intentions for her care, but the decision was that, and because there's a lot, even though she seems to know what she's saying, there's a lot of psychiatric elements there. And she's unhappy, she's miserable. So she's got a depression,

probably as a result of her neurological, side of things, you know but whatever the cause,

that's where she's at. (Participant 6, p. 16-17)

In the above excerpt the GP and RN discussed the situation. The RN had been keeping the resident's best interest to the fore, however she changed her position on how best to achieve this. Instead of focusing on the prevention of seizures thereby placing the emphasis on administering the medication her position altered to one where the increased risk of seizures was accepted by an understanding that the resident had some awareness of her actions. This type of situation is common in RAC.

The resident's level of competence is highly significant when the RN gathers information in order to offer interventions, such as medication, to the resident. Participants of this research talked about the particular challenges associated with residents without competence who were unable to provide the RN with relevant assessment data or consent or decline the medication. In these situations the RNs' observations became particularly important and especially so with residents who were unable to communicate. One participant described these challenges in the residential hospital area where "nobody can verbalise whether their pain is one or five, very few can" (Participant 9, Int 1, p. 6). In this situation a process must be followed to promote good clinical decision making about medication administration.

I don't think it's ever an easy decision because again you don't want to medicate

something that's not pain, like you don't want to be making a decision to be giving a

prescribed medication if it's not needed and I think dementia is, that is one of the

challenges in dementia that behaviours can often be related to pain that can't be

expressed or when it is expressed it is expressed quite differently. So it's learning that,

and it's learning to know that resident so well, that when you pick up the slightest change,

like that lady who was licking the table, that may absolutely indicate pain, but, so we

have a process when something's changed or when we think something, a behaviour

might be pain based, because there's nobody here who could say 'I'm in pain and this is where it is' . . . there's 2 problems, they can't necessarily express that they're in pain and they can't necessarily say where it is, even if they could express it. So we would immediately, we would put them on a pain chart, we have a process in place that we all do if we think there's pain involved, we will trial them on some pain relief and see if it makes a difference and we monitor that on a behaviour chart. So there's a whole series, having made the decision, there's then a whole series of things that happen to make sure we've made the best decision. (Participant 4, p. 9-10)

In the situation above the resident was not able to provide information that was easily interpreted and was not competent to consent to taking medication, such as analgesia for pain. A process of observation and documentation was triggered including the RNs' assessment practices, discussion with family members and the GP. If the outcome was that pain was considered to be present the administration of a trial dose of analgesic medication was usually commenced. There was also a subsequent and ongoing monitoring of the resident's behaviours to evaluate the effectiveness of the analgesia.

Advance care planning

Advance care planning and advance directives are currently being promoted in aged care facilities. An advance care plan or directive could be useful if the resident is subsequently unable to express their wishes due to cognitive or physical impairment.

With a hospital level person and they have said, one of the things I ask them on the advance directive when I do them, is "if you become very unwell for example if you get a pneumonia", always use the old pneumonia, "do you want to be treated here, we can't give you intravenous antibiotics but we can certainly give you oral, would you want to go to public hospital?" And that makes it pretty clear for them and the majority say no, they want to stay here. And if the worst comes to the worst they don't want to be

resuscitated. So that's my, the sort of people I deal with. There are some who are up and mobile and everything and they will say "yes, if it's not working with oral antibiotics and I'm really sick send me off". And so it's pretty clear. And the Dr does rely on what that advance directive says too. (Participant 6, p. 7)

In the excerpt above the RN would inform the GP of the resident's wishes. As has been explained under generative mechanism one, if the resident is competent the resident is able to change their mind as they retain the right to autonomy and they may change their mind if the health event occurs. The resident's concurrent wish would be the wish taken into consideration when the clinical decision was made and often this decision may be a medical decision.

Enduring power of attorney (EPOA)

The residential care facilities have a requirement or at least a strong preference for an EPOA to be completed for each resident on admission. The EPOA provides a legal context for surrogate decision making by the named relative. Concerns are raised through international research findings that have shown the surrogate decision maker may not make the decisions that most closely aligns with the patient's decision. Givens, Kiely, Carey and Mitchell (2009) have provided evidence that whilst a surrogate decision maker is confident they know the resident's wishes, in particular related to pain, infections and nutrition, this may not be the case. Further concerns are raised by Shalowitz, Garrett-Mayer and Wendler (2007) who reviewed sixteen research studies that analysed over nineteen thousand paired responses for patients and their surrogate decision makers. They identified that the surrogate decision maker was accurate 68% of the time and inaccurate 32% of the time. Similarly Moorman, Hauser and Carr (2009) identified a 13% to 26% inaccuracy rate by surrogate decision makers who were shown to project their personal preferences and wishes on to the recipient. The RN must therefore remain engaged with the resident's wishes and act in their best interest.

The influence of ethico-legal and professional deliberations: Actualised, redirected or blocked

The ethico-legal aspects of nursing inform the policies on restraints and enablers, and those relevant to the resident's and family's decision making processes. The RN applies policy and gerontology knowledge of risk to the resident regarding implementing restraint or enablement and may redirect the decision to the team of GP, resident, family and the designated RN for a communally agreed decision, which is actualised by the RN. The clinical decisions regarding the change from the treatment of disease to the treatment of symptoms at the end of life are also informed by ethical and legal knowledge and the RNs' clinical decisions are redirected to the GP, resident and family for a communal decision which is actualised by the RNs.

Component three: Registered nurses' moral agency

The third component of the generative mechanism is the moral agency of the RN which at an individual RN level affects the clinical decisions made. Moral agency is defined as the responsibility to recognise and respond to the needs of another person (Peter & Liaschenko, 2004) and extends the notion of agency in which the person has choice and acts voluntarily (Barnes, 2000). The RN may make appropriate observations of the resident, recognise and act on the needs contained within these assessments and make decisions as part of the RN role. The significance of the moral agency of the RN is evident when the RN extends their commitment to the resident by not just accepting the situation as it appears but by going beyond what is generally accepted and acting in a way the RN considers is in the residents' best interests. This level of moral agency may involve convincing the GP of the RN's assessments, analysis and clinical decisions, as in the excerpt below by one participant.

> *I'd just seen this deterioration, she's agreed to be here* [secure dementia unit], *she'd agreed, she'd said, "Yes I do need to be secure because I do forget things and I might go out on the busy road outside," but no she didn't . . . But see no, everybody else thought I was mad, they said, "No she needs to be in here," 'cause she was agreeing with*

everything they were doing. And I said, "No there's something different about this lady,

she doesn't look happy and this is not the person we admitted." But the caregivers didn't

see that . . . The GP didn't either, he thought, "You're mad", but actually when they came

and talked to her she was, absolutely, didn't need to be in that unit, yeah. . . The GP

talked to her, he did, he listened to me and he took her aside and talked to her and he

said, "Oh she's not bad is she?" . . . she was definitely going across to the Rest Home.

(Participant 2, Int. 2, p. 26-27)

In the excerpt above the RN followed up on the assessments and observations she had made

and rather than accepting the status quo showed a high level of moral agency by advocating

beyond the generally accepted situation. The outcome for the resident was highly significant

and impacted on the resident's quality of life regarding place of residence. Without the RN's

intervention this change would not have happened with ongoing detrimental effects to the

resident's health and wellbeing.

At times the RNs' position differs to the resident's or family members. Some RNs agreed to a

family's request whilst others did not agree when they held nursing knowledge that did not

support the request. Nurses' confidence in their clinical decisions and the ability to explain and

educate family members, rather than acquiesce to families preferences, was required for the

expression of moral agency. The RNs' position needed to be carefully explained to the family

members in order for them to understand the different priorities and why the RN considered

some aspects of care to be more important than their priorities. This communication enhanced

trust from the family members.

The family at times their priorities are a bit skewed and I had to work on that – lots of

explanation about what and why we were doing things. . . they would say, "It's really

important that she has this and this and this." And in fact it wasn't that important, it was

more important that she had that and that and that. Because the two RNs . . . probably

their judgement, their communication with them they would jump, they would do what

the family asked for. Whereas I would then say, "Oh I think perhaps we needed to do this

and this and this." (Participant 2, Int. 1, p. 11)

Some RN participants prioritised the family's request for a treatment, such as antibiotics, to appease the family rather than to treat the resident. Other RN participants declined this request providing education to the family. These positions are illustrated in the two excerpts below.

Sometimes you want him [GP] to prescribe a patient antibiotics for the sake of the

relatives, because the relatives when they see their father or their mum having a

cough, . . . when they see the patient they will get upset. So it's for them more than for

the patients. (Participant 5, p. 3)

Even when there's no symptoms of a urine infection. But the daughter thinks the mother

has one. . . . "I want my mother on an antibiotic". And then it's the sitting down and

explaining, what happens for people who are on antibiotics that actually don't need

them and that it's OK if there's no pain, no set of symptoms are involved. So that, I always

get the doctor involved as well and we have a meeting and we talk about it, hopefully

everybody's happy with the end decision. But I know always in the back of her mind, I

think she would really really want the mum to be on antibiotics. (Participant 4, p. 8)

The moral agency of RNs also influences their ability to take a holistic view of the resident's situation and to consider the best course of action. In the excerpt below a RN with a high level of moral agency described the need to use a process based on sound health assessments and to follow the process in order to make a clinical decision, rather than taking a risk averse approach. The process included consulting the resident, family members and the GP about a situation in which a resident at the end of life experienced an acute event. The clinical decision revolved around whether to transfer the resident to an acute hospital or keep the resident at the residential care home.

So, I was able to guide what their decision making had led to, and their decision-making, you can't fault it because they believed what they were doing was correct, but they're so often risk averse. They cannot see that there is a process we can go through to make it OK, because I think they've been confronted so often with the result of a decision that might have gone the wrong way, and they've had no support in this arena to say "you made a clinical decision on the best advice available on your best you know, on your observations and whatever clinical decision making you do is correct. Because you've made it and you've thought through a process". (Participant 9, Int. 1, p. 1-2)

In the situation above the moral agency of the RNs differed with different potential outcomes for the resident. The RN could avoid risk if their clinical decisions were made based solely on the current health episode rather than considering the total pattern of the resident's health over time. The moral agency of the participant above addressed the concerns about the best outcome using a decision making process that was holistic and therefore more robust. In the excerpt below the RN used her personal thinking to ask questions of her professional decisions and used this process to ensure she questioned her clinical decisions. She considered that this internal mechanism promoted her professional practice.

But having said that I mean I think having a personal opinion that maybe differs from a clinical judgement that's been made, may be a good thing, because it's making you question about that clinical decision. I mean if we all just came along and went along the path without challenging it, then that's not really professional practice is it. (Participant 12, p. 6)

The moral agency of the RN influences the approach to the clinical decisions. A well-developed level of moral agency promotes the ability to be involved in asking 'hard' questions and in making 'hard' decisions in order to promote the resident's wishes or to promote the 'right thing to do'. A less developed level of moral agency involves the RN passing the 'hard' questions and 'hard'

decisions to others. Making clinical decisions that are difficult and involved moral agency enable RNs to nurse towards the top end of the RN scope of practice.

To summarise generative mechanism three, the specialist nature of gerontology nursing, the RNs' previous experience, knowledge and skill and their moral agency influences 'thinking like a gerontology nurse' which impacts on their clinical decisions. Clinical decisions are actualised if the RN holds and is able to apply speciality knowledge and skills including health assessments, alongside ethico-legal and professional aspects and moral agency to the clinical decision and blocked or redirected if the RNs holds less ability to 'think like a gerontology nurse'. The development of moral agency promotes thinking and acting towards the higher levels of the RN scope of practice.

The influence of the RN's moral agency: Actualised, blocked or redirected

A high level of moral agency of the RN actualises optimum clinical decisions that have a major effect on the resident. The decisions related to the end of life are usually irreversible and are actualised as well as redirected to the GP, resident and family in order that a communally agreed decision will be reached.

The next section will explain the interactions of the three generative mechanisms to provide detail about the interweaving of each generative mechanism as causative factors in the formation of the RNs' clinical decisions.

Interactions of three generative mechanisms: Actualising, blocking or redirecting.

The interactions of the three generative mechanisms that generate the clinical decisions of the RN are explained through their relationships in Table seven. The relationships between the first and second generative mechanisms, first and third and then the second and third will be described.

Table 7

Interactions Between Generative Mechanisms

Relationship between Generative Mechanism One: *Significant relationships with resident, family and GP* and Generative Mechanism Two: *Nursing in the RAC setting*	- Resident is autonomous if competent. If not competent a trusting relationship with family is important, family may advocate for resident or make complaint, significance and power of family increases as resident's autonomy decreases. - Intra-family conflict, or conflict between family and RN, from contested understandings of what is 'in the resident's best interest'. - RN prioritises access to GP as this is limited, or refers to after hour's services. If RN makes after hours referral the decision is subsequently scrutinised by manager due to extra cost. Strong evidence of need for medical services supports RNs decision to refer, weak evidence increases scrutiny and possible censure of RNs decision but RN is professionally accountable. - Increased availability of equipment if high risk to resident or if high risk of family making complaint or RN is manager. - High resident to low RN and caregiver ratios are the norm, staffing is based on ratios not resident dependencies. - RN delegates cares verbally to caregivers who are often present for 4-5 hours per shift and have variable start and finish times, but RN remains responsible and accountable. - Family perceive blurred roles of 'care staff' comprising RN EN and caregivers.
Relationship between Generative Mechanism One: *Significant relationships with the resident, family and GP* and Generative Mechanism Three: *The specialist nature of gerontology nursing*	- RN uses ethico-legal knowledge, advocates for resident and must act in the 'best interest of the resident' including when decision is contested. RN provides education for family, may enlist GP support, applies conflict resolutions skills and works to align family, GP and RN decisions. - RN is professionally accountable and responsible for clinical decisions re access to medical services and applies gerontology and health assessment knowledge and skill to assess resident's health issues. Decision to refer is difficult if symptoms are absent or those present are not classic or are atypical and 'knowing the resident' assists RN interpret subtle changes. Issues include transition from treatment of diseases to management of symptoms at palliative end stage of life. - Relationship with GP is collaborative and trusting, based on accuracy of clinical decisions and referral including health assessments and broad knowledge. RN may defer to GPs medical knowledge, agree or disagree with medical decision, or may 'go around' the GP to acute services if does not agree. - Level of RN agency influences RN decisions as RN may act to please the family or may act to influence the family in order to provide best practice, and may advocate for resident/family against generally accepted practices.

Relationship between Generative Mechanism Two: *Nursing in the RAC setting* and Generative Mechanism Three: *The specialist nature of gerontology nursing*	• Priorities for equipment are aligned if manager is RN, however high turnover of clinical managers results in lack of continuity and support. • Mental simulation by RN to predict ahead which residents may need out of hours' medical access and plan to reduce this risk. As sole practitioner RN relies on gerontology and health assessment knowledge and skills for decisions re management of resident's health and need for medical input, and to initiate a pre-arranged plan of action. RN is professionally accountable for decisions and risk lies with RN if clinical decision is incorrect. • Direction and delegation to caregivers who are not skilled in health assessments therefore may not notice changes in resident. RN remains accountable. • Policies useful if clinical decision is based on knowledge but not useful if based on application of that knowledge • Support by employer for professional development and access to resources varies. • Moral concerns regarding transferring resident to acute hospital and regarding administration of anxiolytic medication for 'sundowning' resident – responsible for individual resident and for management of all residents. • Level of agency including ability to reflect and self-question influences ability to take concerns further and act against the generally accepted practices showing an ability to lead others using a process.

The interactions between generative mechanisms have been shown to influence the clinical decisions by the RN. If the resident retains competence the resident's decisions are upheld. If the resident loses competence the family have a higher level of involvement and decision making. The actions to take in the resident's best interest may be contested and alignment of the family, GP and RN are preferable for a successful resolution. The RNs retains accountability and responsibility for their clinical decisions regarding accessing medical services and these decisions may be subsequently scrutinised by their manager. The RN may use mental simulation to project possible resident outcomes and ensure a plan is in place to address specific potential health issues. The availability of equipment influences the clinical decisions as the RN may have to use a less preferred or less expensive product unless the resident is at high risk or family are likely to make a complaint.

The high resident-low RN ratio means the RN may make clinical decisions each shift for up to 20 to 37 residents, many with high dependencies. The RN delegates to caregivers who are not skilled observers but the RN is reliant on the caregiver noticing changes in residents and reporting them as the RN is accountable. The RN uses gerontology knowledge and health assessment knowledge and skills to make clinical decisions, many based on subtle changes in which 'knowing the resident' assists the RN to make the decision.

A collaborative and trusting relationship with the GP assists the RNs clinical decisions and if the RN disagrees with the GP's clinical decision the RN must decide how to act. The RNs' level of agency also influences how the RN acts. Policies may assist the RN to make the clinical decision however they do not replace the clinical decision and are useful in certain situations but not others. Registered nurses have variable access to professional development and to knowledge resources which inform their clinical decisions. They must consider beneficence and non-maleficence by balancing the 'good of the individual resident' against the 'good of the other residents' when managing 'sundowning' behaviours and must make a clinical decision about the administration of antipsychotic medication.

Summary of chapter eight

The third generative mechanism, specialist nursing knowledge and skill, has been shown to influence the RNs' clinical decisions, actualising, redirecting or blocking them. This generative mechanism, along with the two other generative mechanisms, has explained the influences that lead to the clinical decisions in RAC by RNs. They have been shown to comprise components which when combined in different configurations create the clinical decisions.

The generative mechanisms influence the clinical decisions both individually and through their interactions. These three generative mechanisms explain how the clinical decisions vary. The relationships the RN has with the resident, family and GP all contribute to the clinical decisions. The context of RAC also influences the RNs' clinical decisions, as resources in the form of

equipment and staff affect what can be provided. Many of the RNs' clinical decisions are delegated to the caregivers who provide many of the cares. Access to knowledge resources is variable for the RNs and contributes to their specialist gerontology knowledge and skills.

Residential gerontological nursing: Certainty and uncertainty in clinical decisions

Introduction

This chapter discusses the findings of the research within the context of informative literature, focusing on the clinical decisions and the factors that generate these decisions. The interpretation of the findings provides and extends knowledge of clinical decision making by RNs within RAC in New Zealand through the conceptualisation of zones of certainty and uncertainty. Explanations of the three generative mechanisms have been productive in considering the complexity of factors that inform the decisions as well as extending knowledge of the clinical decisions that RNs are certain about and those that create indecision. Recommendations for clinical practice, recommendations for further research and project limitations are also discussed in order to enhance support for RNs in their provision of care for vulnerable and frail elders. Finally a brief summary will conclude the thesis to encapsulate the scope and substance of this research endeavour.

Discussion of the findings

Previous researchers have extensively studied clinical decision making. Despite a lack of conclusive research findings, models have been developed such as those by Tanner (2006) and Wolf (2013) focused on acute health settings and acute health situations. Aspects of these models are relevant for RAC when acute situations arise, however they do not represent all aspects of RNs' clinical decision making in this sector in New Zealand, in particular regarding the management of daily life activities. Despite some similarities between health care contexts, there are also context specific features.

Decisions tasks, thinking processes, and depth of assessments

It is evident from this study's findings that a wide range of decision tasks are present, covering the elder's entry to the rest home, management of daily life, management of health events including acute events, and the dying process. The RNs in RAC therefore face decision tasks that are broader than those in the acute care context where Cioffi (2000), O'Neill et al. (2005), and Thompson et al. (2002) have described the identification, management and treatment of the patients' problems to be the major focus for RNs' practice. The descriptions from this research in RAC have revealed the RNs focus on identifying, managing and treating problems but they are also involved in managing all aspects of daily life and death for frail residents. The comprehensive nature of clinical decisions in gerontology has also been revealed, incorporating holistic aspects of the residents' life. The RNs make a wide range of clinical decisions stemming from the decision tasks and the holistic nature of gerontological nursing.

It is also evident from the findings that the RNs' decision tasks promote all forms of information processing (analytic, intuitive and quasi-rational thinking) as identified by Hammond (1996, 2007) on the task inducing and cognitive continua. This finding is congruent with the study by Lauri and Salanterä (2002) who identified all modes of thinking were utilised by RNs across international clinical settings. Hammond (2010) has suggested that intuition is inferior to quasi-rational thinking as it is not able to provide justification or an explanation of thinking. As the RNs in RAC are often asked to justify and explain their decisions to other RNs, managers and to family members (such as rationale for referral to an after-hours medical service, treatment decisions, and requests for material purchases) the inclusion of quasi-rational information processing appears conducive to the provision of explanations.

The surface-depth continuum described by Hammond (2007) is evident as the RNs gains increasingly comprehensive knowledge of the resident over their time in the home, and partially explains the RNs' desire to 'know the resident'. This finding is similar to that of Hedberg and

Larsson (2003) and Tanner (2006) who also identified that 'knowing the patient' contributes to the RNs' clinical decisions. The RNs utilise this knowledge to assess the resident in an ongoing manner and to respond to needs and to changes. The RNs also apply their understanding of the story of the resident's life over the time the resident lives in the home and the clinical decisions the RNs make reflect the resident's health patterns within their wider life context. This finding corresponds to Tanner's (2006) description of RNs applying a narrative reasoning pattern in which the story surrounding the patient influences the clinical decisions.

The RN participants have shown strength in their clinical decision making, as suggested by Klein (1998) as they use their experiences to recognise and match patterns, apply rational analysis, and mentally simulate how health issues could evolve for residents. Mental simulation is particularly important to reduce risk when the resident is unable to provide verbal assessment information, due to dementia or communication barriers, meaning data are missing. The RNs must notice and understand significant but often small differences in order to interpret changes in residents' behaviours. The ability to imagine the potential causes, their effects and to mentally project and compare these thoughts to the resident's actual presentation is required. The level of frailty and complexity of residents also means the RNs, as identified above, must know the resident to determine changes that are additional to previous health deviations. The ability to notice small changes is present in expert RNs' practice (Klein, 1998) as is the ability to cluster cues effectively (Hoffman et al., 2009). In the RAC context the RNs rely heavily on non-verbal cues and therefore noticing and interpreting change is a significant component of the RNs' clinical decision making processes.

The RN participants also showed strength in decision making when the decisions were contested by family members, as they attempted to align the decisions and reach a mutually acceptable solution that promoted the 'best interests of the resident'. Family were also able to strengthen the RNs' decision making processes by contributing information about the resident. If the

previous health care provider, resident or family did not contribute this information, the omitted data has been shown to create risk to the resident with potentially detrimental outcomes, a finding similar in essence to that described by Klein (1998) in which missing data could lead to inaccurate decisions.

Decision errors as discussed by Reason (2008) commonly occur, however many are also avoided or the error is corrected. The RN participants in this research avoided or recovered from errors in many situations and at times this was through consultation with the GP or with family members. The need to avoid or recover from errors explains in part why the RNs aim to develop strong relationships with the family members and the GPs. Family input to the assessment of the resident and documented care plan assists the RNs to provide an effective process that influences the care the resident receives. Family input may contribute to these nursing processes although the RNs retains responsibility for the clinical decisions. The relationship between RNs and family is important and the RN participants prefer to make collaborative clinical decisions with the resident and family members.

Certainty and uncertainty

The clinical decisions, formed through the interactions of three generative mechanisms, include decisions the RNs are certain of and decisions that are surrounded by uncertainty. This section will explain the zones of certainty of clinical decisions and the zone of uncertainty for clinical decisions that are encompassed by the interactions of these generative mechanisms. Commensurate with Bhaskar's (1979) position the generative mechanisms explain the clinical decisions but do not predict them, similarly the zones of certainty and uncertainty are not predictive but explanatory. Randell et al. (2009) consider identification of the clinical decisions that lead to uncertainty to be an important contribution to clinical practice. This research has uncovered two zones of certainty and one zone of uncertainty in the RNs' clinical decisions. There may also be a zone in which omitted clinical decisions reside, referring to clinical decisions

that are not made, such as if the RNs are not alerted to a change in the resident's condition. As the focus of this research has been on the clinical decisions that have been made, and the possibility of omitted clinical decisions has been raised during the research process, further research is required on omitted clinical decisions. Within the zones of certainty the RNs make the decision to either act or to not act and within the zone of uncertainty the RNs experience indecision. The zones are illustrated in Figure 5.
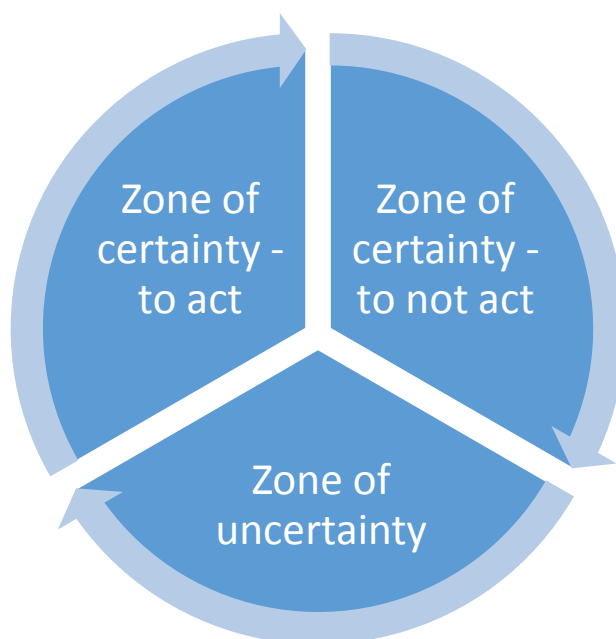
Figure 5. Zones of certainty and uncertainty in clinical decision making in residential aged care

Generative mechanism one. Professional imperatives: Significant relationships with the resident, family and GP

A major factor in the certainty or uncertainty of RNs' clinical decisions is the level of autonomy the resident retains. When the resident is deemed competent to make decisions about treatment and care, the subsequent clinical decision by the RNs are certain rather than uncertain. Conversely, if the resident is partially or not competent, certainty of clinical decisions is only obtained through the resident (if partially competent for the decision), family members, GP and RNs holding a similar perspective on what constitutes the resident's best interest. Indecision in

RNs' clinical decision making occurs if these perspectives differ. The RNs have a duty to provide care that "is in the best interest of the health consumer" (Nursing Council of New Zealand, 2012a, p. 17), but as illustrated through this research, the clinical decisions that are considered to constitute the 'best interest of the resident' may be contentious. There are times when both the promotion of life through active treatment and the management of symptoms through palliative care could be perceived to be in the resident's best interest. A zone of uncertainty may therefore be present and the RNs work to align the family member's perspectives with the RNs' perspective through education or enlisting the assistance of the GP.

When the resident is deemed not competent, vigilance and careful consideration of the resident's previously stated preference in an advance directive is required, and may again be contentious. Ditto, Jacobson, Smucker, Danks and Fagerlin (2006) support a cautious approach as they illustrate that people may express different preferences for life sustaining treatments when they are well and when they are ill. As a person's health declines, physically or cognitively, their interest in life-sustaining treatments also declines (Ditto et al., 2003; Fried, O'Leary, Van Ness, & Fraenkel, 2007). The RNs may experience a zone of indecision and need to take a cautious approach, working to align the perspectives of family, GP and RNs in the best interest of the resident.

The research findings have shown that the RNs' relationships with family members is important and that 'getting it right' at the beginning of the resident's life in the home is a valuable investment by the RNs. This research extends the concept of a triad coalition between the recipient of care, family caregiver and the RN from the person's own home (Carr, 2004; J. Dalton, 2005) to the residential care home environment with the resident, family, RNs and other staff involved in ongoing care. 'Building trust', 'keeping the family happy' and 'family involvement' are noted to be important aspects of an effective relationship between staff and family, a result that reflects international concern (Bauer, Fetherstonhaugh, Tarzia, & Chenco, 2014). Effective

communication to keep the family informed promotes trust, which is similar to the findings of Sussman and Dupuis (2012) who identified honest and open communication along with the provision of person centred care impacted positively on a resident's transition process. The RNs promote agreement amongst the resident, family and RNs which reflects findings by Weman, Kihlgren, and Fagerberg (2004) who described co-operation as central to an effective relationship between family members and staff. If agreement is present there is a level of certainty in clinical decisions. Uncertainty may also be present in clinical decision if there is disagreement amongst the family members.

The RNs' relationships with the GPs may inform the RNs' clinical decisions. Effective teamwork amongst health professionals is necessary for safe care for residents and in this context the professional health care team comprises the RNs and the GPs. In this research trust and a collaborative relationship is often present between the RNs and the GPs. An effective relationship is reliant on effective clinical decision making by both parties. The information the RNs provide to the GP has been shown to be significant for a trusting relationship, a finding that is additional to those of Weinberg, Miner and Rivlin (2009) who identified that medical staff are selective in giving RNs information based on their perception of the individual RN's level of cooperativeness and competence. This research project has also shown that as the GP is not always readily available the RNs act as surrogate decision makers and may commence an action plan for treatment, based on their assessments of the resident. The action plan creates a situation of certainty for RNs' clinical decisions about the appropriate course of action to take and the RNs are accountable for these decisions. If the GP is present and the RNs' and GPs' assessments differ the RNs may experience clinical decision making in the zone of uncertainty. The RNs may defer to the GP or may over-rule the medical decision, moving from a zone of uncertainty to one of certainty to act or to not act.

Generative mechanism two. Quality and fiscal constraints: Nursing in RAC

The social structures of RAC have been shown to have a profound influence on the RNs' clinical decisions. Each organisation has a service delivery model that enables or constrains the RNs' clinical decisions according to the facility's resource management and allocation, through the provision of equipment and personnel. A tension exists between cost containment, provision of required care to residents and quality requirements and the RNs may not be able to implement their preferred clinical decision. However, they are still held responsible for their decision. The contractual requirements of this sector include those directly related to the RN scope of practice, such as residential assessment requirements and documentation, as well as stipulation of minimum staffing levels. The RNs do not control the service delivery model but are responsible for the residents' outcomes.

As the resident is admitted to the residential care home, the RN participants experience uncertainty in their clinical decision making through 'not knowing' the resident. As the depth of assessment data builds the uncertainty reduces and certainty increases. As the data collection for this research was completed prior to the implementation of interRAI, which is currently the mandatory assessment tool required for all RAC residents, the effect of interRAI is not included in these findings. The risk assessment tools provide information relevant to the zones of certainty as a numerical finale to the assessment states the level of risk to the resident. The RNs then identify the interventions to be taken to avoid risk. The full plan of care evolves as the resident settles in to the home, and is developed by the RNs. Therefore, not knowing the resident places the RNs' clinical decision making into the zone of uncertainty and knowing the resident assists in the clinical decision being situated within the zones of certainty, either to act and implement specific actions that are required, or to not act and not implement actions that are not required.

Documentation of full care plans, up to 17 pages, meets organisational and contractual requirements but limited time resources are provided by some organisations. Some RN participants return unpaid to complete these on their days off which illustrates a lack of organisational support. Participants appreciated the legal need for documentation, but concern was raised that their main purpose was to meet audit requirements as there are a limited number of people who actually read the care plans. Bland (2007) recognised the considerable amount of time RNs spent on documentation of care plans and that documentation took priority over implementing the care or supervising the caregivers. The verbal nature of the handovers from RNs to caregivers reduces the usefulness of the documentation.

Further clinical decisions that may occur within the zones of certainty and uncertainty relate to the RNs' access to medical services. In this sector the GP is not constantly present or available and access to medical services after hours is constrained as it is expensive. Some clinical decisions are within the zones of certainty, to act and call for assistance or to not act through a 'watch and wait' approach. However, other clinical decisions are within the zone of uncertainty, in particular if the RNs do not 'know the resident', atypical symptoms are present or symptoms are not present but subtle behavioural signs are. The clinical decisions will be scrutinised after the event by other RNs, managers and GPs.

The RNs are reliant on the caregivers noticing any changes in the resident and providing appropriate information to them in order that the RNs may recognise the need to assess the resident. Clinical decisions may be omitted if this recognition does not occur. At times family vigilance may balance this omitted data as a family member raises a concern. As ENs have education in assessment skills the RN participants appreciated this level of education as it provides some support to the RNs. Omitted clinical decisions are separate to the zones of certainty and uncertainty in RNs' clinical decision making.

The RNs in this environment are self-reliant as they work in relative isolation. Many RNs are the sole RN on their shift, working with and being responsible for all caregivers. The RNs may also direct and delegate to ENs. Whilst contact with another 'on-call RN' provides some assistance, it is also a limited problem solving mechanism as the assistant RN is only able to ask questions and reinterpret the RN's assessment data but does not have the ability to notice and interpret changes which is important in this sector. The RN participants in this research did comment on appreciating support from other RNs and also ENs when it was available. They appeared to accept this employment situation as a feature of working in RAC, which differs to other research findings where some RNs have expressed that working alone is one of the most concerning issues they experience (Ritchie, 2013). Sole practice reduces opportunities for peer review and consultation with peers which is often used in RN's practice as a support system for clinical decision making (Bucknall, 2003; Offredy et al., 2008). The RNs therefore need to have a broad knowledge base from which to formulate their clinical decisions in an independent way.

Individual employers enable or constrain access to knowledge resources, such as professional development or online resources, which may contribute to the certainty and uncertainty in RNs' clinical decisions. Some of the RNs in this research actively utilised the available specialist nursing supports and, similar to other research findings, the availability of this expertise influences the clinical decisions of the RNs (O'Neill et al., 2005; O'leary & Mhaolrúnaigh, 2012; Offredy et al., 2008; Thompson et al., 2004; Thompson et al., 2001a). To address the need for support some DHBs have provided RNs in RAC with access to specialist RNs in gerontology or to nurse practitioners (Ministry of Health, 2013b). Additionally in New Zealand, Sankaran et al. (2010) reported on the effectiveness of advanced support offered to rest home staff through a geriatrician and an advanced nurse specialist. As the clinical decisions required are broad and comprehensive this access and support is particularly important.

Generative mechanism three. The specialist nature of gerontology nursing

A dichotomy is suggested through the findings of this research as the social structures of RAC have been shown to influence the RNs' clinical decisions and the agency of the individual RN has also been shown to influence the clinical decisions made. The structures within the RAC sector enable, block or redirect the RNs' clinical decisions. Conversely the RN's agency may override these structures to enable a subsequent or preferred clinical decision. The explanation provided through this research is that in particular situations, some RN participants have prioritised the safety or comfort of the resident over the medical and structural generative mechanisms that are present to actualise their clinical decision when they have been certain of the need to act. The zone of certainty of the RNs clinical decisions is present in this situation, although this may develop from the zone of indecision.

It is evident through these findings that the clinical decisions made may vary amongst RNs who work at different levels within the RN scope of practice. The RNs must understand the health issues present in order to be able to find a viable solution for the resident. The level of knowledge and skill, including interpretation of health assessment findings, required for clinical decision making in this environment has been shown in this research to be vested in the RN scope of practice, in particular as there is limited access to medical services. The RNs' level of knowledge affects their clinical decisions (Bakalis, 2006). The RN participants in this research identified the need to build their knowledge base in this area of specialty nursing practice. They articulated knowledge and skills they were confident in and the areas they considered were challenging, where they had less experience or knowledge deficits. As RNs in the RAC sector require a broad knowledge base focused around frail elders this knowledge base will take time to develop and also needs ongoing professional development to keep up to date with newer practices. It is imperative that support is provided for the RNs to both develop and renew their knowledge and skills in order that their clinical decisions are based on sound and current knowledge and practice. Investment in the RN workforce is foundational.

The need for ongoing support to gain further knowledge and skill is a finding similar to the findings by Carryer et al. (2010) who conducted a survey and focus group meetings with RNs in RAC in New Zealand. Most of the RNs who completed the survey (N=28) identified their need to gain more knowledge to support their nursing practice for people with diabetes, cardiac and respiratory conditions. Further support regarding knowledge deficits of RNs is also provided by Gill, Corwin, Mangin, and Sutherland (2006) who showed a lack of assessment and appropriate interventions by RNs and also caregivers in rest homes when managing acutely unwell residents with diabetes. These medical conditions are consistently present in RAC and therefore RNs must have sufficient current knowledge for effective clinical decision making.

The RN participants with depth of time and experience articulated the ethical compromises they felt when financial constraints prevented them from providing evidence based best practice. In a similar manner Woods, Rodgers, Towers, and La Grow (2015) identified that one cause of moral distress amongst New Zealand RNs is the provision of less than optimal care due to fiscal restraints from management pressures. Woods et al. (2015) also identified that working with other staff whose level of competence did not meet patients' needs generated moral distress amongst RNs. Their finding has been reflected in this study and may be reflected in high turnover of staff.

Participants in this research who were newer to the clinical area of RAC were more vulnerable in their practice as their clinical decision making was based on less experience and feelings of a greater imperative to meet employer and family needs compared to more experienced staff. The RNs with international backgrounds who had not previously been exposed to aged care found their early years in this sector very difficult and their experienced RN colleagues considered they were very vulnerable. Expertise develops with exposure to clinical situations that occurs over time and repeated experiences inform future clinical decisions. The individual nature of the resident's health related requirements means that there are multiple variations

present informing clinical decision making. This variety necessitates a range of clinical decisions by the RNs in order to respond effectively and this range requires the development of a repertoire of experiences to draw upon.

The explanations provided above assist in the development of nursing knowledge about clinical decision making by RNs in RAC in New Zealand. The generative mechanisms have been explained as they interact to form the clinical decisions within zones of certainty and uncertainty.

Recommendations for clinical practice

There are five recommendations for clinical practice. These recommendations promote a supportive and vigorous system within the RAC sector to enable RNs to consistently develop, maintain and extend relevant knowledge and skills to promote effective clinical decision making. As RNs need to make clinical decisions at the top end of their scope of practice in this sector a robust milieu is required.

The first recommendation is that education is ongoing for RNs. Responsibility is placed on to the employing organisations and the RNs to ensure regular annual professional development opportunities are utilised that focus on the individual RN's practice. The zone of uncertainty in clinical decision making is particularly important as this is the zone in which RNs find clinical decision making difficult. Education should be targeted at the specific areas the RN wishes to increase knowledge or skill in. The RAC facilities need to ensure that paid professional development leave is taken, that back filling of the RN's shifts occurs, and that the RN has financial support to undertake ongoing education. High knowledge and skill levels, including health assessment skills, are required to promote effective clinical decisions and both knowledge and skill development must be supported.

The second recommendation is that clinical leadership from a nurse leader is made available to assist individual RNs to develop their practice. Through ongoing mentorship from a clinical nurse leader RNs may enhance their clinical decision making skills through the advancement of their

nursing practice. It is possible for individual RAC facilities to support a group of RNs through the joint provision of this assistance. The support may be from a nurse practitioner, or a nurse with advanced knowledge however the role of mentoring the RN should be a component of this RN's work load.

The third recommendation is that RNs have access to personnel with advanced specialist knowledge and skill to support contemporary evidence based practice in the specialty areas of health care. Direct support from nurse practitioners is particularly important however there are currently few in aged care in New Zealand. Access to advanced nurse specialists is also important as they collectively have a wide variety of clinical expertise. Access to medical personnel including gerontologists is also recommended for all RNs irrespective of their geographical location to support timely resident care decisions.

The fourth recommendation is that RAC facilities increase their employment of enrolled nurses. Enrolled nurses as regulated health care workers have a scope of practice with prescribed knowledge and skills that support RNs in their clinical decision making. Enrolled nurses are educated in initial health assessment skills and so are more likely to notice medically related changes in the resident. As enrolled nurses are accountable for their practice, the level of support for the RN's clinical decision making is increased through informed observations and assessments.

The fifth recommendation relates to internationally registered nurses who are new to both the aged care sector and to the advanced level of clinical decision making required of RNs in New Zealand. Some of these RNs may not have the requisite clinical background in RAC to safely and effectively manage the range of clinical decisions in this sector. These nurses are vulnerable in their practice and the residents are vulnerable in their health outcomes. It is recommended that one on one preceptorship is initially provided to support the transition to the RAC sector and then a plan for ongoing mentorship is implemented. An evaluative programme to review and

benchmark their clinical decisions should be implemented to ensure effective clinical decision making.

These five recommendations will provide an environment in which RNs can develop and extend their clinical decision making abilities and enhance outcomes for residents.

Recommendations for further research

The critical realist methodology applied in this research has enabled the researcher to identify the clinical decisions the RNs make as well as put forward three generative mechanisms that actualise, redirect or block the clinical decisions and this is valuable for future research. These generative mechanisms should be further researched for verification and to identify if there are other generative mechanisms that contribute to the clinical decisions. Subsequently a model for practice in RAC could be created that enhances and supports RNs' clinical decision making.

Further research focused on the zone of uncertainty is also warranted, as the decisions that lie within this zone create indecision for the RNs. The clinical decisions that lie within the zones of certainty, either to act or to not act, are not difficult for the RNs and therefore it would be more productive to focus on the zone of uncertainty. Further knowledge through decision aids, such as flow charts, would potentially reduce some of the uncertainty and provide relevant triggers and cues for the RNs.

Once the generative mechanisms are verified, subsequent research could link specific combinations of the generative mechanisms, along with the actualisation, redirection or blocking of the RNs' clinical decisions, to the residents' outcomes. This knowledge could provide RNs, clinical managers and employers with tools to improve the outcomes to residents through altering aspects of the generative mechanisms to enhance the outcomes. The knowledge could also be used to identify the support the RNs require through identifying areas to be targeted for improvement, such as improved access to learning opportunities.

Also, once verified, knowledge surrounding the generative mechanisms could also be usefully pursued, to enhance outcomes to residents through improved clinical decision making by RNs. For example, the significance of family has been raised and in this health sector forms a variation of 'family nursing' which could usefully be studied to support the RNs effectively manage this relationship. Also, further studies on the relationships between the RNs and GPs would enhance alignment of effective communication and effective clinical decision making. Therefore a research focus which enhances inter-professional communication for safe resident care would be beneficial.

The clinical decisions the RNs make may alter over time if the role of the RN or the social structures change in this sector, and so changes should be researched in order to inform RNs and employers about the ongoing supports that are required. Professional development may then be targeted appropriately in order to enhance clinical decision making. It is not known what professional development RNs in RAC undertake and what factors affect and influence their ongoing learning in order to target future learning. Further research would also consider how to address the professional development needs of RNs and how these needs may be most effectively met.

There is also currently no research knowledge about omitted clinical decisions or missed episodes of care in RAC in New Zealand which, if present, could have significant impact on the older person as there may be no other person to identify the issue. The result could potentially be catastrophic for the elder. As death is an expected outcome for most residents missed health care opportunities could potentially reflect a chain of events that culminates in an early resident death.

Finally, studies on the interface between the RN, EN and caregiving staff in RAC could provide information useful for identification of the level of support required. The mandatory implementation of interRAI as a comprehensive assessment tool will create research

opportunities related to the implementation and effectiveness of the tool. This evaluation research is likely to give ongoing direction for further research.

One further area for research surrounds residents who do not have family members who are actively engaged in their care. It is not known in the New Zealand context if their outcomes differ to those of residents with supportive families. Further research could be undertaken to identify who, if anyone, actively promotes their best interests.

Limitations of the research

Five limitations are identified in relation to this project.

Firstly, the research methodology has shaped the way in which the study was conducted and the relative newness of a critical realist approach to the discipline of nursing indicates this methodology has not been fully explored within nursing. The critical realist case study applied in this thesis was an amalgamation of Easton's six principles of critical realist case study, the retroductive reasoning processes described by Crinson (2007) and Maxwell's (2012) categorising and coding of data. The amalgamation of these frameworks and research processes is a potential limitation as the subsequent application, drawn together for the purpose of this research project, has not been utilised previously. While the inclusion of the three aspects of research processes is a potential limitation, each aspect has provided increased direction where a weakness became evident thereby strengthening the overall process. Crinson's reasoning processes provided clarity where Easton's principles lacked specificity regarding abduction and retroduction processes. Maxwell's categorisation and coding of data provided a clear process regarding the abductive processes where Crinson's did not. The amalgamation of the three frameworks and processes has therefore supported this research process strengthening the critical realist case study approach.

A second limitation is the lack of transferability from this context. The research findings represent beginning knowledge about the clinical decisions made by RNs in RAC in New Zealand

which are contextually and historically located. The findings provide insight into the clinical decisions and their causative factors in RAC and are not transferable as generative mechanisms may differ in other nursing contexts. The clinical environment is one where residents live their lives, rather than experience brief episodes of care, and as the sector evolves to cater for an anticipated increase in resident numbers commensurate with the aging population, the generative mechanisms for RN's clinical decisions may alter. Whilst a limitation, the design of the research project aimed to focus on the clinical decisions within a specific nursing context and this aim has been met.

A third limitation is that this research has focused broadly on the range of clinical decisions made and their context and has not investigated in detail the content of specific clinical decisions. The critical realist quest for the layer of 'the real', which goes beyond layer of 'the empirical' where the experiences of the participants reside, and the layer of 'the actual' where the enactment of the clinical decisions reside, aims to identify generative mechanisms. These generative mechanisms are therefore those that form the broad range of clinical decisions, and not an individual clinical decision. Other researchers have studied focused clinical decision making on individual topics such as pressure ulcers (Samuriwo & Dowding, 2014) and the use of physical restraints (Lane & Harrington, 2011), though they have not aimed to identify the generative mechanisms. That was not the purpose of this research.

A fourth limitation is the lack of inclusion of residents in dementia units due to ethical considerations to ensure resident vulnerability was not exploited. While residents were not participants, they were present during participant observations. Registered nurses described their clinical decision making including residents with dementia across the three RAC settings (rest home, hospital and dementia units). Future research could ensure that residents living in dementia units are included in the research processes, subject to rigorous ethical criteria.

A fifth limitation is that the RN participants were those who volunteered to be interviewed and to be observed and so the rich descriptions provided have been elicited from RNs who were willing to engage in discussions about their practice and/or to be observed. This may have limited the applicability of findings, as data were collected from those who were open to scrutiny. The RNs' practice experiences range from three years in the sector to over thirty years and so none were novice in this area. The clinical decisions described therefore represent those of RNs with mid-range to extensive experience in this sector. The earthquakes in Canterbury may also have influenced who volunteered to participate as so many people have been affected in ongoing ways by the aftereffects of the quakes affecting their ability to engage in this research.

Summary of the research

The purpose of this study was to identify the clinical decisions made by RNs in RAC and to explain how and why they were made. A critical realist case study approach has been applied through which reality is considered to comprise three layers. The aim of the study was to explain the underlying structures and relationships that generate the RNs' clinical decisions. These underpinning generative mechanisms are considered to reside within the layer of 'the real' within a stratified reality. The clinical decisions, documented in case notes and enacted through actions, comprise the middle layer of reality, 'the actual', where the clinical decisions occur. The experiences of the RN participants described during interview, and the participant observations by the researcher, comprised the layer of 'the empirical'.

The empirical layer was explored through eighteen hours of participant observations which were completed over seven observation periods with four RNs who agreed to be observed. The researcher took more of an observational role than a participant role due to the nature of the interactions between the RNs and residents and family members however the researcher also attempted to 'fit in' to the environment. Field notes of the observation periods were written and the participant observations formed part of the empirical experiences of the researcher.

Twelve RNs agreed to a semi-structured open ended interview which provided thirteen hours of interview data. All interviews were transcribed. The interview data articulated the experiences of the RNs and also lay within the empirical layer of a stratified reality. Data from the empirical layer was triangulated with data from the layer of the actual in the form of document analysis as the resident's case notes and the policy and procedure manuals were analysed. The data that was triangulated provided rich descriptions of the clinical decisions by RNs which showed complexity and depth.

The two research questions were:

- What clinical decisions do RNs in the RAC sector make?
- How and why are these decisions made?

The first research question has been answered through the triangulated data obtained using participant observation, document analysis and participant interviews and which reside within the empirical and actual layers of reality. The second research question has been answered through the explanation of the generative mechanisms which comprise the third layer of reality, 'the real'. The data were retroduced and three generative mechanisms were identified and explained that illustrate the relationships and structures that influence the RNs' clinical decisions.

The study has identified three interacting generative mechanisms, each comprising of three components. The first generative mechanism is the nursing imperative of effective relationships, and the three components are the RNs' professional relationships with the resident, family members, and the GP. These relationships are specific to RAC. The second generative mechanism influencing the clinical decisions the RNs make is the balance between quality and fiscal constraints in RAC. The three components are the availability of equipment and staff, the direction and delegation responsibilities of the RNs and the RNs' access to knowledge resources. The third generative mechanism, the specialist nature of gerontology nursing, incorporates the specialist nursing knowledge and skill, the ethico-legal and professional deliberations of the RNs

and the RN's moral agency. These factors may enable, block or redirect the clinical decisions. There are clinical decisions that are certain and uncertain and are conceptualised within the three zones of certainty to act, certainty to not act and uncertainty. The interactions of the generative mechanisms have been explained, and they are not predictive.

Conclusions

This thesis has utilised a critical realist case study methodology which is relatively recent in nursing research, therefore the application of this approach within this research project is in the preliminary phases. The critical realist approach has effectively identified factors that generate the clinical decisions of RNs in RAC. The factors are temporally situated early in the second decade of the 21st century and they will alter over time as nursing practice evolves. They are currently relevant to RNs in RAC.

The thesis has shown that RNs in this sector engage in comprehensive nursing practice providing clinical decisions about the nursing care for residents inclusive of physical, mental and behavioural health and health issues that are situated within the specialist area of gerontology. Registered nurses require and rely on sound health assessment skills and a broad range of nursing knowledge that overlaps with medical knowledge. They also require and rely on effective communication skills in order to provide family care, manage the care team comprising mainly caregivers and to interact effectively with their managers and employers. In order to provide highly effective and safe nursing care to residents the RNs must work at the top end of their scope of RN practice and in order to provide the level of care required they require a package of support that is currently not available in this sector.

Clinical leadership is required to provide mentorship, with the overall aim of increasing the safety and effectiveness surrounding their clinical decisions. Effective and targeted professional development with financial support and release time is essential to ensure the RNs are able to remain current in their practice and to provide best practice. Registered nurses new to New

Zealand require supernumerary time as well as mentorship and support to develop their clinical decisions in the local context.

The structures present in RAC are currently not sufficiently supportive of the ways in which RNs provide effective safe care as the constraints of resources (equipment and staff) limit the RNs' choices. A further challenge for this sector is the provision of support for the development of nurses' agency as increasing agency within an unsupportive environment also limits RNs' choices decreasing their ability for ethical decision making. Exemplary ethical practice must be evident for the public to have confidence in this sector.

The clinical decisions that cause concern to the RNs are those in the zones of uncertainty, situated between the zones of certainty of the clear decision to act and the clear decision to not act. These clinical decisions could be supported by the development of flow charts to assist with the difficult decision making processes and organisations could provide guidelines about their expectations. The discussions currently occurring within sections of society to promote advance care plans, in which the residents' preferences for potential treatments are articulated, should continue in order to provide clarity and assist the RNs to pursue the 'best outcome' for the resident. However, the advance preferences should also be approached with caution as the resident may change their mind.

The level of risk to the RNs, the resident, the family and the organisation is high if the clinical decision by the RNs lead to an unwelcome or adverse outcome. The ability to access support through advanced gerontology specialists and nurse practitioners will enhance but not replace the need to effectively support the RNs in RAC. In a practice culture in which sole RN practice is the norm, or in which the RNs have limited support, the risk will be reduced if the RNs are effectively supported to confidently within the scope of registered nurse practice to the full extent of the role.

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_____

13 September 201O

Ms Kaye Milligan

Christchurch Polytechnic Institute of Technology

P O Box 2893

Christchurch 8140

Dear Kaye Milligan

Ethics Ref: **URA/10/08/059** **(please quote in all correspondence)**

Study title: **A case study of clinical decision making by**

registered nurses employed in the Age Related Residential Care Sector in

New Zealand

Investigators: **Ms Kaye Milligan**

This study was given ethical approval by the Upper South A Regional Ethics Committee on 13 September 2010. A list of members of the Committee is attached.

Approved Documents

  Information sheet and consent form for registered nurses, version 2 dated 24 August 201O

  Information sheet and consent form for residents, version 2 dated 24 August 201O

  Semi-structured interview questions for registered nurses

This approval is valid until 31 December 2014, provided that Annual Progress Reports are submitted (see below).

Amendments and Protocol Deviations

All significant amendments to this proposal must receive prior approval from the Committee. Significant amendments include (but are not limited to) changes to:

— the researcher responsible for the conduct of the study at a study site

— the addition of an extra study site

— the design or duration of the study

— the method of recruitment

— information sheets and informed consent procedures.

Significant deviations from the approved protocol must be reported to the Committee as soon as possible.

Annual Progress Reports and Final Reports

The first Annual Progress Report for this study is due to the Committee by 30 September 2011. The Annual Report Form that should be used is available at www.ethicscommittees.health.govt.nz. Please note that if you do not provide a progress report by this date, ethical approval may be withdrawn. A Final Report is also required at the conclusion of the study. The Final Report Form is also available at www.ethicscommittees.health.govt.nz.

Requirements for the Reporting of Serious Adverse Events (SAEs)

For the purposes of the individual reporting of SAEs occurring in this study, the Committee is satisfied that the study's monitoring arrangements are appropriate.

SAEs occurring in this study must be individually reported to the Committee within 7-15 days only where they:
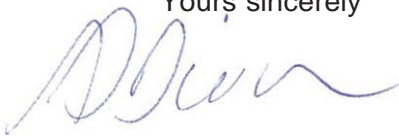
are *unexpected* because they are not outlined in the investigator's brochure, and are not defined study end-points (e.g. death or hospitalisation), and

occur in patients located in New Zealand, and

if the study involves blinding, result in a decision to break the study code.

There is no requirement for the individual reporting to ethics committees of SAEs that do not meet all of these criteria. However, if your study is overseen by a data monitoring committee, copies of its letters of recommendation to the Principal Investigator should be forwarded to the Committee as soon as possible.

Please see www .ethicscommittees.health.govt.nz for more information on the reporting of SAEs, and to download the SAE Report Form.

We wish you all the best with your

study.

Yours sincerely

Alieke Dierckx

Administrator

Upper South A Regional Ethics Committee

Email: aliekedierckx@Ministry of Health.govt.nz

Appendix B: Information sheet for registered nurses

MASSEY UNIVERSITY

COLLEGE OF HUMANITIES

AND SOCIAL SCIENCES

TE KURA PUKENGA TANGATA

<u>INFORMATION SHEET for registered nurses</u>

<u>Registered nurses' clinical decision making in Aged Care</u>

<u>Principal Researcher</u>
Kaye Milligan
P O Box 2983
Christchurch
Phone (03) 940 8288 or 021 128 3200
Email: milligank@cpit.ac.nz

Introduction: You are invited to take part in a study that explores clinical decisions and the context of these decisions for registered nurses employed in aged care. This is a case study which, if you agree, involves talking with me about the 'what' 'how' and 'why' of clinical decisions that you make in your everyday work – and also allowing me to observe you working with residents to study factors that affect clinical decision making. Your manager has agreed to this study in this facility. Please feel free to contact me if you have any questions about this study.

Who is the researcher?: My name is Kaye Milligan. I am a graduate student enrolled in a PhD (nursing) at Massey University. I am a registered nurse and have been working as a nursing lecturer at Christchurch Polytechnic Institute of Technology for most of the past 18 years. Prior to that, and twice during this time, I have worked in various nursing positions in clinical practice. This study has grown out of my interest in the complexities that face registered nurses in this sector. My supervisors are Dr Stephen Neville and Dr Jean Gilmour and their contact details are at the bottom of this form.

Participation: Your participation is entirely voluntary. You are under no obligation to accept this invitation. If you do decide to participate you have the right to:

- ask any questions about the study at any time (of me or my supervisors)
- decline to participate and to withdraw from the study without giving reason at any time
- refuse to answer any particular question and to stop the digital recording
- refuse to allow me to observe any of your activities
- be given a summary of main findings of the study when it is concluded if you wish, either through your work place or mailed directly to you (there will be a time delay for this due to the research time)
- contact your professional organisation if you have any queries or concerns regarding your rights as a participant in this study

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If you decide to participate, what would you need to do?: If you do decide to accept my invitation to be part of this research it will involve you:

- talking with me about the types of clinical decisions you make and what you take into account when making them
- allowing me to work alongside you for periods of time that we agree to in order that I can observe all aspects of clinical decision making. Before I had any interaction with residents I would ask you to briefly explain my study and ask the resident if I might talk with them in order to provide them with more information about the study. I would also ask the resident to sign an agreement to me being present with you during your cares and looking at their case notes. I would rely on you to ensure the resident is not too vulnerable and that you consider it appropriate.
- agreeing to one or more interviews. If you agree - this would be digitally recorded for accuracy. Interviews will be transcribed and you are entitled to a copy of this if you wish and to correct or add any further details. The time frame for the interviews would vary depending on what you would like to tell me about the clinical decisions but as a guide they may take approximately an hour

What will happen to the information you provide?

- The specific information you provide will be kept confidential and will be discussed only with my two supervisors. Information will be kept in the form of field notes, digital recordings and transcript of interviews
- The digital recording may be typed up into a transcript by a typist. The typist will not know your real name and will be bound by a confidentiality agreement not to discuss any details about the material
- Your real name will not be used. Instead you will be asked to choose a pseudonym or code name which will be used on the digital recording, the transcripts and the final written thesis. If you agree I will share some of the insights you give me with other participants, but this will be done in an anonymous way with the purpose of generating further ideas and discussion
- All research materials will be kept securely locked. The digital recording and interview data will be kept by Massey University for 10 years as required by the Health (Retention of Health Information) Regulation 1996 and will then be destroyed
- The findings will be written in my thesis and in publications in nursing journals

Benefits and risks: There may be no direct benefits to you from participating. However you will have the opportunity to talk about your work and the complexities that are present. Little is written in nursing literature about the work of registered nurses employed in Aged Care and you would be contributing to this beginning knowledge. I anticipate that there will be no risks associated with being involved. If you do agree to take part then change your mind, you are free to withdraw without giving a reason. If any adverse events occurred you would be able to contact your professional organisation or appropriate personnel in your organisation for support. If I was to observe any instances of unsafe practice I would discuss this with the aim of being supportive.

What do you do to take part?: If you agree to participate I will arrange a consent form for you to sign and we will arrange suitable times for me to work alongside you and to talk with you. If you have any questions you are welcome to contact the researcher.

This study has received ethical approval from the Upper South A Regional Ethics Committee, ethics reference number URA/10/08/059 and is noted by the Massey University Human Ethics Committee and the Christchurch Polytechnic Institute of Technology Academic Research Committee.

<u>Supervisors contact names and phone numbers</u>

Dr Stephen Neville

Massey University Albany
Phone: (09) 414 0800 ext 9065
Email: S.J.Neville@massey.ac.nz

Dr Jean Gilmour
Massey University Wellington
Phone: (04) 8012794 ext 6325
Email: J.A.Gilmour@massey.ac.nz

Appendix C: Consent form for registered nurses

MASSEY UNIVERSITY

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TE KURA PUKENGA TANGATA

Participant Consent Form for RNs

Project title: Registered nurses' clinical decision-making in Aged Care

Principal Investigator: Kaye Milligan

This study has received ethical approval from the Upper South A Regional Ethics Committee, and noted by the Massey University Human Ethics Committee, and the Christchurch Polytechnic Institute of Technology Academic Research Committee.

- I have read and understand the Information Sheet dated _____. I have had the opportunity to discuss this study and I am satisfied with the answers I have been given

- I have a copy of the information sheet and I know who I can contact if I want further information or if I wish to make a complaint

- I understand that taking part in this study is voluntary and that I may withdraw from the study at any time, and this will in no way affect my employment

- I understand that I may ask further questions at any time

- I understand that I have the right to decline to have the researcher work alongside me and to decline to answer any questions

- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study

- I have had time to consider whether to take part

- I understand that this research has been agreed to by the facility at which I am employed and that my employer/s will not have access to any raw data or information that might identify me

- I wish to receive a copy of the main findings (there will be a time delay for this)
  YES NO

- I agree to my interview/s being digitally or audio recorded.   YES   NO

I, _____(full name), consent to take part in this study

Participant Signature: _____

Date: _____

Name of Researcher: Kaye Milligan

Contact phone number: Phone (03) 940 8288 or 021 128 3200

Researcher signature: _____

Date: _____

Registered nurses' clinical decision making in Aged Care

TRANSCRIBER'S CONFIDENTIALITY AGREEMENT

I .... (Full Name - printed) agree

to transcribe the recordings provided to me.

I agree to keep confidential all the information provided to me.

I will not make any copies of the transcripts or keep any record of them, other than those

required for the project.

Signature: **Date:**

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MASSEY UNIVERSITY

COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PUKENGA TANGATA

Resident Consent Form

Project title: Registered nurses' clinical decision making in Aged Care

Principal Investigator: Kaye Milligan

This study has received ethical approval from the Upper South A Regional Ethics Committee, and is noted by the Massey University Human Ethics Committee, and the Christchurch Polytechnic Institute of Technology Academic Research Committee.

- I have read and understand the Information Sheet dated_____. I have had the project explained to me by_____ and had the opportunity to discuss this study. I am satisfied with the answers I have been given

- I· have a copy of the information sheet and I know who I can contact **if I** want further information or if I wish to make a complaint

- I have had the opportunity to have support, such as from family or friends, to help me ask questions and to understand the study

- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time, and this will in no way affect my care

- I understand that I may ask further questions at any time

- I understand that I have the right to decline to have the researcher be present with the registered nurse and to decline to answer any questions

- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study

- I have had time to consider whether to take part

- I understand that this research has been agreed to by the facility I live in

- I agree to the researcher reading my case notes to obtain information about

the decisions the registered nurse makes. I understand that I will not be identified in any way in any written work

- I wish to receive a copy of the main findings (there will be a time delay   for this)
  YES
  NO

I, _____(full name), consent to take part in this study

Participant Signature: _____

Date: _____

Name of Researcher: Kaye Milligan

Contact phone number: Phone (03} 940 8288 or 021 128 3200

Researcher signature: _____

Date:_____

MASSEY UNIVERSITY

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AND SOCIAL SCIENCES
TE KURA PUKENGA TANGATA

To residents and their families

A study about Registered Nurses' clinical decision making in Aged Care

I would like to introduce myself and the research I would like to undertake in your rest home/ hospital.

My name is Kaye Milligan. I am a registered nurse and am undertaking a PhD at Massey University. I am interested in studying how registered nurses who work in rest homes make decisions about your care. I would like to be present with the registered nurse while she provides care to you so that later on I can ask her about her decision making processes and also see what she writes in your notes about these decisions.

Your home has agreed to this study. However any involvement of any resident is entirely voluntary and subject to your explicit agreement. The registered nurse who usually cares for you will ask if you are likely to wish to be involved. If you do not wish me to be present for any reason at all just tell the registered nurse you don't want me to. This will not affect your care in any way at all. I am not part of the rest home staff. If you do agree I will then talk with you (and your family if you wish) about what it entails. If you continue to agree I will ask you to sign an agreement form which states that I can be present with the registered nurse looking after you and also look at the way the decisions are recorded in your case notes. The notes I take will be kept by Massey University for 10 years as required by the

Health (Retention of Health Information) Regulation 1996 and will then be destroyed.

Please feel free to contact me to discuss any aspects of this study. You may wish to have support eg from family or friends to understand the study.

My contact details are:
Phone (03) 940 8288 or 021 128 3200 Email: milligank@cpit.ac.nz

This study has received ethical approval from the Upper South A Regional Ethics Committee, ethics reference number URA/10/08/059.

My supervisors are Dr Stephen Neville and Dr Jean Gilmour, both registered nurses and senior lecturers at Massey University and their contact details are:

Dr Stephen Neville
Massey University Albany
Phone: (09) 414 0800 ext 9065

Dr Jean Gilmour
Massey University Wellington
Phone: (04) 801 2794 ext 6325

Appendix G: Semi-structured interview questions for registered nurses

PROJECT: Registered nurses' clinical decision making in Aged Care

Primary researcher: Kaye Milligan

Semi-structured interview questions for RNs

Research questions:

- What are the types of clinical decisions made by RNs in this sector?
- How and why are these decisions made?

Interview questions:

- Can you tell me about the types of decisions that you make as a RN that affect the care of residents?
  - ➢ Can you tell me about the decisions you make during a typical shift?
  - ➢ Are there any decisions that you seem to make a lot? Can you tell me about them?
  - ➢ Are there any types of decisions that you find easy to make? Can you give me any examples?
  - ➢ Are there any types of decisions that you find stressful or difficult to make? Can you give me any examples?
  - ➢ What types of nursing assessment decisions do you make?
  - ➢ What types of nursing intervention decisions do you make?

- How and why do you make these decisions?
  - ➢ What influences these decisions?
  - ➢ What do you take account of when making these decisions?
  - ➢ What would make an easy decision?
  - ➢ Are there any things that make them difficult?
  - ➢ Are there any things that make them complex? What would you take into account?
  - ➢ What do you do if you are undecided or find a decision difficult?
  - ➢ What sorts of support do you use to make these decisions?
  - ➢ What resources do you use?
  - ➢ How do you know you have made the best decision? Eg what sort of evidence do you use?
  - ➢ Who do you discuss them with?
  - ➢ What time frames do you use?

There are many different ethnicities and cultures of workers and residents. How do you go about catering for different needs?