

**Is Case Management Rhetoric or Reality?  
A Survey on the Use of Case Management in  
Australian Residential Aged Care Facilities**

Nicole Jane Brooke

Thesis submitted to the  
**Faculty of Nursing, Midwifery and Health**  
**University of Technology, Sydney**

In fulfilment of the requirements for the degree of  
**Doctor of Philosophy**

**2010**

## **Certificate of Authorship / Originality**

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Nicole Brooke

.....

Signature of Candidate

## Acknowledgements

I would never have been able to endure this journey without the love, support and patience of my dear husband, Terry and my precious children, Corey (5) and Melissa (3). Equally as important in maintaining my direction, were my other best friends – my mum and dad. Their friendship and love has helped me through some very difficult challenges over the course of this candidature. Thank you!

I wish to acknowledge friends and colleagues, through both my professional and academic associations who have inspired, supported, and mentored me, namely: Professor Doug Elliott, Professor Lynn Chenoweth, Professor Sharon Moore, Dr. Garry Pearce, and Celine Hill. I would also like to acknowledge Georgina Luscombe for data analysis advice. Thank you to staff at the University of Western Sydney who assisted me through the early stages of my candidature.

Finally, it is with enormous gratitude and praise that I would like to acknowledge the wonderful work of my colleagues and friends throughout the residential aged care sector. These inspiring and talented people, continue to work diligently and professionally, despite enormous pressure. It is their passion, and need for more resources and support that inspired me to do this study.

## **Dedication**

It is with heartfelt gratitude and love that I dedicate this work to the following people:

Terry Brooke (Husband)  
Corey Brooke (Son)  
Melissa Brooke (Daughter)  
Dr. Garry Pearce (Dad)  
Toni Pearce (Mum)  
Andrew Pearce (Brother)  
Matthew Pearce (Brother)

It is these people who have allowed me to vent, reengage and refocus on achieving this milestone. Their patience, friendship, unconditional love and smiles have both, enabled and inspired me.

THANK YOU!

## Table of Contents

Certificate of Authorship / Originality .....	ii
Acknowledgements .....	iii
Dedication .....	iv
Table of Contents .....	v
List of Tables .....	ix
List of Figures .....	xi
Abstract .....	xii
Abbreviations .....	xiv
Glossary .....	xvi
Care Staff Terminology .....	xix
<b>Chapter 1 Introduction and Overview .....</b>	<b>1</b>
1.1 Introduction .....	1
1.2 Background to the Study .....	1
1.3 Justification for the Study .....	3
1.4 Study Aim and Objectives .....	5
1.5 Study Structure .....	6
1.6 Conclusion .....	7
<b>Chapter 2 A Review of Residential Aged Care in Australia .....</b>	<b>8</b>
2.1 Introduction .....	8
2.1.1 Ageing Population .....	8
2.1.2 Residential Aged Care Population .....	9
2.2 Political Factors .....	10
2.2.1 Legislative Reform .....	10
2.2.2 Funding .....	13
2.3 Economic Factors .....	15
2.3.1 'Ageing in Place' .....	15
2.3.2 Client Acuity .....	17

2.4 Cultural Factors .....	22
2.5 Social Factors .....	24
2.5.1 Workforce Issues .....	24
2.5.2 Consumer Expectations .....	27
2.6 Summary: Factors to consider in developing a model of case management for Australian residential aged care .....	28
2.7 Conclusion .....	29
<b>Chapter 3 Case Management: A Review of Literature.....</b>	<b>30</b>
3.1 Introduction .....	30
3.2 Historical Perspective .....	30
3.2.1 Defining Case Management.....	30
3.2.2 Historical Development of Case Management .....	31
3.3 Search Strategy .....	35
3.4 Review of Case Management Outcomes .....	35
3.4.1 Quality Assessment of Selected Studies.....	39
3.4.2 Review of Study Populations .....	45
3.4.3 Review of Design and Implementation .....	46
3.4.4 Review Bias .....	47
3.4.5 Review Instruments .....	48
3.4.6 Review of Case Management Model Interventions .....	54
3.4.7 Review of Outcomes.....	56
3.4.8 Review of RCTs Examining Case Management.....	62
3.4.9 Synthesis of Case Management Outcomes .....	64
3.4.10 Review Summary.....	67
3.5 Critique of Case Management Models.....	68
3.5.1 Assertive Community Treatment.....	73
3.5.2 Brokerage Model .....	73
3.5.3 Case Management Society of America Case Management Model.....	74
3.5.4 Clinical Case Management Model.....	74
3.5.5 EverCare Model.....	75
3.5.6 Intensive Case Management .....	76
3.5.7 Summary of Case Management Models reviewed .....	76
3.6 Investigating the Elements of Case Management.....	79
3.6.1 Collaboration .....	79
3.6.2 Preparation .....	81
3.6.3 Implementation .....	82
3.7 Final Synthesis of Case Management Elements .....	93
3.8 Conclusion .....	94

<b>Chapter 4 Methods .....</b>	<b>95</b>
4.1 Introduction .....	95
4.2 Study Aim and Objectives .....	95
4.3 Study Design.....	95
4.4 Population and Surveying Procedure .....	96
4.5 Survey Instrument .....	97
4.5.1 Survey Development.....	97
4.5.2 Pilot Testing .....	102
4.6 Data Management.....	103
4.7 Data Analysis .....	104
4.8 Ethical Issues .....	109
4.9 Conclusion .....	109
 <b>Chapter 5 Results .....</b>	 <b>110</b>
5.1 Introduction .....	110
5.2 Response Rates and Generalisation .....	110
5.3 Examination of Sector, Facility and Client profiles .....	112
5.3.1 Sector Profile .....	112
5.3.2 Facility Profile .....	121
5.3.3 Client Profile .....	127
5.4 Investigation of Case Management Elements.....	132
5.4.1 Preparation .....	132
5.4.2: Implementation .....	138
5.4.3 Collaboration .....	147
5.5 Case Management Population Comparison .....	149
5.5.1 Study Criteria for Facilities Undertaking Case Management .....	150
5.6 Conclusion .....	157
 <b>Chapter 6 Discussion .....</b>	 <b>158</b>
6.1 Introduction .....	158
6.2 Major Findings.....	158
6.2.1 Examination of the Sector, Facility and Client Profiles (Objective i)...	159

6.2.2 Critique of Case Management Models as Relevant to the Sector (Objective ii).....	170
6.2.3 Investigation into Case Management Used by the Sector (Objective iii) .....	171
6.2.4 Identification of a Potential Model of Case Management (Objective iv) .....	173
6.3 Strengths and Limitations of the Study .....	182
6.4 Recommendations for Future Research .....	184
6.5 Conclusion .....	187
<b>Chapter 7 Conclusion.....</b>	<b>189</b>
7.1 Introduction .....	189
7.2 Summary of Major Findings.....	189
7.3 Implications for Policy and Resourcing in Residential Aged Care .....	192
7.4 Recommendations for Progressing Case Management in Residential Aged Care .....	193
7.5 Conclusion .....	194
<b>Reference List.....</b>	<b>196</b>
<b>Appendices .....</b>	<b>244</b>
Appendix A: Literature Search Mapping .....	245
Appendix B: GRADE .....	247
Appendix C: Survey .....	249
Appendix D: Survey Coding .....	257
Appendix E: Data Analysis Plan .....	260
Appendix F: Survey Data .....	263
Appendix G: Case Manager Position Description .....	282
Appendix H: Candidate Conference Presentations.....	283



## List of Tables

Table 3.1: Case Management Study Summary.....	37
Table 3.2: Classification for Evidence and Interpretation of Research.....	39
Table 3.3: GRADE Approach; Underlying Methodology .....	40
Table 3.4: Case Management Study Quality Review .....	41
Table 3.5: Case Management Study Summary of Instruments .....	49
Table 3.6: Case Management Models: Interventions .....	55
Table 3.7: Case Management Models; Outcomes .....	58
Table 3.8: Synthesis of Case Management RCTs.....	63
Table 3.9: Themes: Case Management Outcomes .....	65
Table 3.10: Case Management Model Characteristics .....	69
Table 3.11: Analysis of Case Management Model Literature .....	71
Table 3.12: Elements of Case Management for Health Services .....	78
Table 3.13: Variances in Orientation for Case Management Programs.....	84
Table 3.14: Variations in Caseload in Case Management Models .....	86
Table 3.15: Caseload Study Review (Adapted from Table 3.6).....	88
Table 4.1: Relationship between Survey Items and Draft Case Management Model.....	100
Table 4.2: Design of Survey Instrument .....	101
Table 4.3: Modifications to Survey following Pilot Testing .....	103
Table 4.4: Explanation of Data Analysis as explained in Methods Chapter .....	105
Table 4.5: Hourly Staffing Rates of Pay .....	107
Table 4.6: Survey Item Links to Research objectives.....	108
Table 5.1: Data Extrapolation .....	111
Table 5.2: Demographic Characteristics by Location .....	113
Table 5.3: Demographic Characteristics by Level of Services Offered.....	115
Table 5.4: Demographic Characteristics by Religious Affiliation.....	116
Table 5.5: Demographic Characteristics by Profit Status .....	117
Table 5.6: Demographic Characteristics by Years of Accreditation .....	120
Table 5.7: Staffing Budget Meeting Needs of Clients .....	122
Table 5.8: Managers Working Hours.....	126
Table 5.9: Client Acuity Based on Study Data (extracted from Table F.1).....	128
Table 5.10: Client Acuity in Australia Based on Study Data Percentages .....	128
Table 5.11: Impact on Facility; More than half of the facility clients with a diagnosis of dementia.....	129

Table 5.12: Case Management Vision within Facilities .....	133
Table 5.13: Interpretation of Vision Statements Related to Case Management.....	134
Table 5.14: Facility Workplace Issues: Workload and Staff Turnover.....	137
Table 5.15: Profile of the Case Manager.....	140
Table 5.16: RN Case Manager Compared to Remaining Facilities .....	142
Table 5.17: Medication Administration Compared with Clinical Care Knowledge .....	144
Table 5.18: Relationship between Palliative Care and Pain Management.....	145
Table 5.19: Reported Case Conferences in Case Managing Facilities.....	148
Table 5.20: Facilities Which Conduct Case Conferences.....	149
Table 5.21: Self Reported Case Managing Facilities.....	150
Table 5.22: Case Management Criteria within Survey .....	151
Table 5.23: Case Management Criteria Population Comparison (1 or 4 pages)	152
Table A.1: Final Comprehensive Review Search .....	245
Table A.2: Mapping of CINAHL Searches to Facilitate Search Strategy.....	245
Table B.1: GRADE; Factors that may Decrease the Quality of Evidence .....	247
Table B.2: GRADE; Factors that may Increase the Quality of Evidence.....	247
Table B.3: GRADE; Risk of Bias to Judgments about Study Limitations from Main Outcomes .....	248
Table D.1: Survey Coding.....	257
Table E.1 Data Analysis Plan.....	260
Table F.1: Demographic Survey Data (Part I) .....	263
Table F.2: Case Management Survey Data (Part II) .....	265
Table F.3: Case Conferencing Survey Data (Part II) .....	268
Table F.4: Facility Manager-reported Staff Skill & Knowledge Survey Data (Part II) .....	269
Table F.5: Facility Manager-reported Health Professionals Survey Data (Part II) .....	270
Table F.6: Case Management Survey Data (Part III) .....	271
Table F.7: Caseload Survey Data (Part III) .....	272
Table F.8: RNs Leadership Capabilities impact on the Facility.....	273
Table F.9: Statistical Significant Data on RN Leadership .....	280

## List of Figures

Figure 1.1: Study Structure .....	6
Figure 3.1: Collaborative Care Case Management Model (CCCMM) .....	94
Figure 4.1: Study Components .....	96
Figure 4.2: Original Draft Case Management Model .....	98
Figure 4.3: Revised Draft Case Management Model.....	98
Figure 5.1: Distribution of Perceived Staffs' Skill and Knowledge.....	143
Figure 5.2: Impact on Facility where Managers Reported RNs had Very Good Leadership.....	146
Figure 6.1 Major Findings .....	159
Figure 6.2 Care Staffing Hours per Day (Mean).....	166
Figure 6.3: Collaborative Care Case Management Model.....	174
Figure A.1: Mapping of CINAHL Searches to Facilitate Search Strategy .....	246

## Abstract

Case management is an integrative and collaborative process of coordinating individual care through assessment, planning, implementation and evaluation. The practice of case management within the residential aged care sector in Australia was explored using a cross-sectional census survey approach. Managers of all Australian residential aged care facilities were invited to participate, with 474 returns (17% response rate) and representativeness between states and territories observed. Using a criteria-based assessment, the survey data identified that 28% of facilities were undertaking case management activities; this population was statistically different from the facilities not meeting the criteria for case management. The survey also highlighted significant pressures for the sector, as reported by Facility Managers.

From the perspective of Facility Managers, case management had a positive impact on the facility. Managers identified case management to be associated with improved interprofessional collaboration, undertaking case conferences, increased compliance with care interventions, more accurate funding related to clients' needs, reduced staff workload and improvements in morale and teamwork, as well as a more competent and capable workforce. Undertaking case conferences was not however statistically associated with effective case management processes; collaborative and regular communication with clients and key stakeholders was more beneficial. Compared with previous published findings, residential aged care clients were identified to be more complex and had higher acuity levels. Staff continued to be constrained by high workloads and generally lacked skill and knowledge capabilities, particularly in relation to clinical leadership.

An integrative review of the case management literature, combined with the study data led to the development of a recommended case management model suitable for implementation within residential aged care; a system now distinguished by high staff workload and client acuity. The core elements of case management included: preparation (organisational vision, pathways and outcome measurements); implementation (comprehensive assessment and evaluation, reasonable caseload, skilled Case Managers and competent staff); and ongoing evaluation (client and key stakeholder engagement).

*Key Words:*

Aged care, Australia, Caseload, Care management, Case management, Case Manager, Client, Elderly, Leadership, Model, Resident, Residential

## Abbreviations

ABS	Australian Bureau of Statistics
ACSAA	Aged Care Standards and Accreditation Agency
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
AIN	Assistant in Nursing
CCCMM	Collaborative Care Case Management Model
CM	Case Management
CMSA	Case Management Society of America
COMs	Case Outcomes and Measures
CSE	Care Service Employee
CW	Care Worker
CW (Adv)	Care Worker (Advanced)
DON	Director of Nursing
EN	Enrolled Nurse
EEN	Endorsed Enrolled Nurse
GRADE	Grades of Recommendation, Assessment, Development and Evaluation
NICE	National Institute for Clinical Excellence
NSW	New South Wales
NT	Northern Territory
NUM	Nurse Unit Manager
OT	Occupational Therapist
PCA	Personal Care Assistant
Qld	Queensland
RACF	Residential Aged Care Facility
RAPs	Residential Aged care Pathways
RCS	Residential Classification Scale
RCT	Randomised Controlled Trail
RN	Registered Nurse
SA	South Australia
Tas	Tasmania
VETAB	Vocational Education and Training Accreditation Board
Vic	Victoria
WA	Western Australia



## Glossary

Accreditation – “System where an external, independent authorised body assesses an organisation’s’ compliance with a set of defined standards or criteria” (Commonwealth of Australia, 2007b, p. xxi)

Ageing in Place – An initiative that enables residential aged care facilities with appropriate care and accommodation to support clients with increasing care needs (Hogan, 2004)

Caseload – number of clients per Case Manager.

Case Management – “A collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual’s health needs through communication and available resources to promote quality cost-effective outcomes” (Case Management Society of Australia, 2004, p. 6).

Client – “A person who has been assessed by an Aged Care Assessment Team as requiring residential care” and who resides in a residential aged care facility (Australian Institute of Health and Welfare, 2008e, p. 111).

Critical Pathways – are a time line of events and interventions implemented to streamline a client’s trajectory based on a ‘typical’ and ‘normal’ client presentation in relation to a familiar diagnostic related grouping.

Discharge planning – refers to a formal process of seeking to minimise adverse client outcomes and expedite discharge.

Extra Service Facility – High or low care residential aged care facility, with ‘significantly higher’ standards of accommodation, food and services (Commonwealth of Australia, 2008b).

High Care Facility – A residential aged care facility for clients assessed as needing a high level of care services with 24 hour Registered Nurse support and supervision (also referred to as ‘nursing homes’).



Hostel - A residential aged care facility for clients assessed as initially requiring a low level of care services; commonly referred to within the aged care sector as a low care facility, or residential aged care facility (Australian Institute of Health and Welfare, 2008e, p. 110).

Interprofessional teams – in this study it refers to when accessing more than one health professional to support improved client outcomes.

Low Care Facility – A residential aged care facility for clients assessed as initially requiring a low level of care services. Low care facilities have no requirement to have staff supervision and client support by a Registered Nurse (also referred to as ‘hostels’).

Nursing Home – A residential aged care facility for clients assessed as needing a high level of care services approved under the National Health Act 1963; commonly referred to within the aged care sector as a high care facility, or residential aged care facility (Australian Institute of Health and Welfare, 2008e, p. 110).

Older Person –Persons aged 65 years and over.

Patient – A person who is temporarily receiving care in the acute health system.

Practice – A commonly utilised term in the health system incorporating application of skills, knowledge and attitude within routines and roles. It may signify nursing practice, management practice, knowledge utilisation or other similar concepts within the roles of health professionals.

Resident – A client who resides temporarily or permanently within a residential aged care facility (Australian Institute of Health and Welfare, 2008e). For consistency in this thesis, resident will be referred to as a client.

Residential Care – Personal and / or nursing care which includes: accommodation, provision and assistance with meals, cleaning, furniture and equipment (Australian Institute of Health and Welfare, 2008e).

Residential Aged Care Facility – Accommodation for the frail and disadvantaged in the community, with nursing support and intervention. Typically, these facilities are for older persons, although this is not a defining characteristic. This term refers to both high and low care facilities.

## Care Staff Terminology

Care Worker (CW) – Care staff who undertake ‘hands on’ roles in the facility. They may have obtained a Certificate III qualification through Vocational Education and Training Accreditation Board (VETAB) in aged care work or community services. Care Worker staff may also be referred to as AIN (Assistant in Nursing), CSE (Care Service Employee) or PCA (Personal Care Assistant), and work under direct supervision of a Registered Nurse or Enrolled Nurse.

Care Worker (Advanced) (CW (Adv)) – Care staff who work in a ‘hands on’ leadership capacity. They may have obtained a Certificate IV, Diploma (Enrolled Nurse/ Division 2), Diploma with medication certification (Endorsed Enrolled Nurse) or Advanced Diploma (Endorsed Enrolled Nurse) qualification through Vocational Education and Training Accreditation Board (VETAB) in aged care work or community services. The Australian Nursing and Midwifery Council Guidelines regulate EN and EEN in their scope of practice. Care Worker staff may also be referred to as CS (Care Supervisor), TL (Team Leader) or CC (Care Coordinator), and work under the supervision of a Registered Nurse.

Registered Nurse (RN) - This internationally recognised qualification enables participants to register with the relevant state Nursing and Midwifery Registration Board as RN or Division 1. They are able to perform at appropriate clinician levels utilising critical thinking and decision-making, reflective process analysis and evidenced-based practices. The Australian Nursing and Midwifery Council Guidelines regulate Registered Nurses in their scope of practice.

# Chapter 1

## Introduction and Overview

**To lead, one must first be led,  
To change, one must first want change, and  
In order to achieve one must first reflect.**

### 1.1 Introduction

The residential aged care sector has undergone significant transformation over the past few decades in Australia. Legislative reforms, increased transparency of service delivery and innovative care practices have driven a substantial shift toward improved client focused care and economic viability (Carrigan, 2009). This study explored the opinions of residential aged care Facility Managers on issues related to case management, juxtaposed against a situational analysis of the complexities and challenges within the aged care sector, and their knowledge and use of case management. The aged care facility profile data obtained from the study sample broadly reflected the profile of Australian aged care sector staff and clients, and the issues faced by managers in implementing a case management model for improving client outcomes. Recommendations for an appropriate residential aged care sector case management model are offered based on findings from the survey.

This Chapter positions the study with an exploration of the issues for residential aged care in Australia and with case management in that setting. The research is then introduced with a brief account of the study purpose and design, followed by an outline of the structure of the thesis.

### 1.2 Background to the Study

The study is contextualised by the strategic and political framing of the Australian health care system, including residential aged care. The health and aged care system has undergone many complex and strategic revisions over the past few decades to address coordination and resource inefficiencies, with the aim of delivering high quality health treatment and care services (Garling, 2008b, 2008c). Challenges in the sector have been attributed to high costs, duplication and frequently inefficient services, errors and poor processes occurring (National

Health and Hospital Reform Commission, 2009). Contemporary emphasis on improving the health and aged care system continues to focus on cost minimisation, risk management, improved management of patient and client outcomes and better resource utilisation. Healthcare agendas also continue to be driven by increasing community expectations and needs (Garling, 2008a, 2008c; National Health and Hospital Reform Commission, 2009). These expectations and requirements impact on a residential aged care sector that has experienced economic, political and consumer driven pressures for the past 20 years, in response to demographic changes and social expectations.

The past century has seen a transformation in residential aged care sector governance and structures in order to gain social and political acceptance as an important and valued component of the Australian health care system (Thornton, 2009). This transformation has evolved through stringent accreditation and quality management processes (Angus & Nay, 2003). Notable contemporary challenges for the sector include: an increasing aged workforce and client population (Australian Bureau of Statistics, 2009); staffing shortages and skill mix (Australian Institute of Health and Welfare, 2009a); increasing co-morbidity among older people; increasing consumer demand for better quality services (Carrigan, 2009); and the integration of technology in care delivery (Commonwealth of Australia, 2006; National Health and Hospital Reform Commission, 2009; Productivity Commission, 2008). In response to these challenges, the residential aged care sector has continued to evolve to meet the needs of clients requiring supported care services. Case management, or some of the key elements of case management, has been employed by aged care providers to meet the needs of their client populations.

Case management is a complex, value-added process, enabling improved client and process outcomes. The Case Management Societies of both Australia (2004, p. 6) and the United States of America (USA) (2002, p. 1), define case management as a *“collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual’s health needs through communication and available resources to promote quality cost-effective outcomes”*. Some of these case management elements have been adopted in Australian aged and community care sectors to achieve positive outcomes for aged care clients (Caudrey & Dissinger, 2007; Masters, Halbert, Crotty, &

Cheney, 2008; Moyle & Evans, 2007). There is evidence of emerging international interest in case management in other complex healthcare settings (Luzinski et al., 2008; Smith & Newton, 2007; Terra, 2007; Thomas, 2009b; Throckmorton & Windle, 2009). This interest has been stimulated by a potential association between case management and improved consistency for client-focused and outcome-based care and improvements in quality management processes (Luzinski, et al., 2008; Thomas, 2009a; Vasquez, 2009). Since case management aims to benefit both staff and clients (Daniels, 2009; Thomas, 2009a), it is considered a model of care aimed at continuous improvement of services. The motivation for this study was therefore to investigate the utilisation of case management in the Australian residential aged care sector, for the purpose of developing a draft case management model that might be applicable for the sector.

### **1.3 Justification for the Study**

To explore the utilisation of case management in the Australian residential aged care sector, a survey and cross sectional analysis of Facility Managers' stated use of case management activities was undertaken. While case management use in residential aged care facilities has developed over a number of years, the extent of its use in Australia previously unknown. The underlying interest in conducting this study was the frequently stated intent of many residential aged care Facility Managers to implement case management as a way of improving care outcomes, many of whom appeared to have little understanding of what case management was, or how advantageous it was for aged care facilities to adopt. A recent Cochrane Review of case management literature identified gaps in managers' knowledge of case management and its application in health care, indicating that interventions "have not been studied sufficiently" (Hesse, Vanderplasschen, Rapp, Broekaert, & Fridell, 2009, p. 14). The review found no empirical evidence of successful case management models in the aged care sector, and recommended further research on case management be conducted in a variety of health care settings (Hesse, et al., 2009). Consequently, this study is warranted, given the case management knowledge gap in the aged care sector.

It is noted that case management is only one model aimed at improving outcomes for aged care clients. Other models of care that have elements embedded in case management include person-centred care and magnet principles (Davidson,

Halcomb, Hickman, Phillips, & Graham, 2006). For example, Person-centred care has recently been accepted internationally as the 'gold class' standard of care, especially for persons with cognitive impairment (Chenoweth et al., 2009; Kitwood, 1997; Peek, Higgins, Milson-Hawke, McMillan, & Harper, 2007). Like case management, the person-centred care approach pays attention to the unique characteristics of individual care recipients in supporting their biopsychosocial health care needs. As a strengths-based model, the ultimate outcome of care is to support personhood and wellbeing (Ryan, Bannister, & Anas, 2009). It principally improves care by valuing the client and those who provide the care, by respecting their individuality, identifying their needs from their perspective and providing a positive environment that aims to support what the person can do, rather than what they cannot (Dewing, 2008). Supporting personhood is central to improving high quality interpersonal care and not only increases client well-being and collaboration with care staff, it also engenders staff commitment to positive care outcomes (Ponte et al., 2003). Person-centred care principles closely align with the active client engagement and assessment elements of case management.(Bryant, 2007; Ferguson & Weinberger, 1998; Kerr & Birk, 1988; Naleppa & Reid, 1998; Tahan, 2005; Wulff, Thygesen, Sondergaard, & Vedsted, 2008).

Another model of practice with similar principles and outcomes is that advocated and supported by care services attributed 'magnet' status. Initially, magnet recognition was applied in recognition of hospitals in the USA that produced quality client outcomes, while attracting and retaining staff (Frazier, 2003; Kramer & Schmalenberg, 2003; Upenieks, 2005) . These magnet hospitals compared favourably with other hospitals and were distinguished by elements consistent with case management such as inspiring, supportive leadership, opportunities for staff and managers to engage in professional development and education opportunities, positive interdisciplinary team relationships, and support of staff autonomy (Aiken, Havens, & Sloane, 2000; Jordan, 2009; Scott, Sochalski, & Aiken, 1999). Magnet status in the United States of America has more recently been recognised for their success in providing quality client outcomes through an engaged, educated and stable workforce (Hickey, Gauvreau, Connor, Spring, & Jenkins, 2010; Lake, Shang, Klaus, & Dunton, 2010; Rondeau & Wagar, 2006; Westendorf, 2007). Like person-centred care, magnet organisations also focus on

quality service delivery through strong and visionary leadership, collegial and supportive teamwork and place the client at the core of service planning.

In this regard, there are synergies between these two models and case management. While there is evidence to support the benefits of person-centred care and magnet organisations for health consumers, there is however scant evidence for the benefits of case management in health care, and none in the aged care sector. The study assists in this regard, by addressing the following aim and objectives.

#### **1.4 Study Aim and Objectives**

The primary aim of the study was to examine the presence, application and perceived impact of case management within the Australian residential aged care sector from the perspective of aged care Facility Managers.

The related research objectives were to:

- i. Examine the sector, facility and client profiles, and management and operational practices reported by a sample of Facility Managers from the Australian residential aged care sector, and explore associations between these characteristics
- ii. Critique a range of case management models reported in the literature and relevant to the Australian residential aged care sector
- iii. Investigate the elements of case management currently used by Australian residential aged care facilities, and the impact of the case management elements on service delivery, as reported by Facility Managers
- iv. Identify a potential model of case management based on the existing evidence base, that may be adopted in Australian residential aged care facilities.

A self-administered survey was distributed to Managers of all Australian Government funded residential aged care facilities seeking answers to these objectives. The study findings informed the development of a case management model suitable for the aged care sector.



## 1.5 Study Structure

The structure of the thesis follows a traditional approach with Chapters on the literature review, methods, results and discussion, as depicted in Figure 1.1.

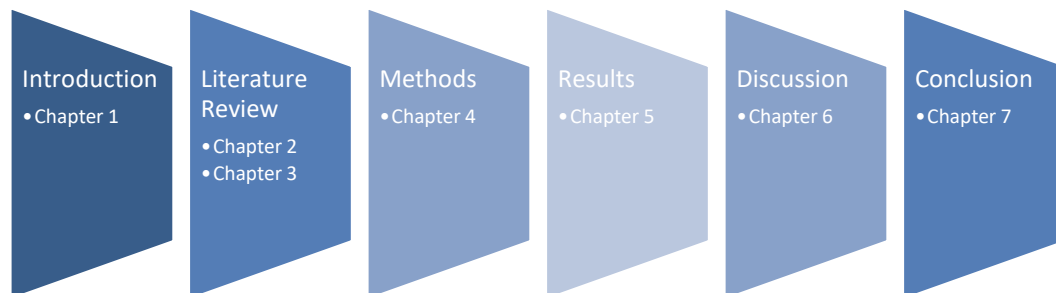


Figure 1.1: Study Structure

This Chapter initially provided a brief insight into the complexities existing in residential aged care in Australia and introduced the opportunities for adopting case management principles and practices in this setting. The study is then presented in four sections; literature review, methods, results and discussion. A review of the literature on the topic area is covered in two chapters. Chapter Two presents an overview of the political, economic, cultural and social factors present in the residential aged sector. This situational perspective provides insight into the challenges and limitations in the sector as a prelude to presenting a range of case management models in the following Chapter. Chapter Three provides an integrative review of case management, exploring the historical context, presenting outcomes of case management and describing common contemporary models employed in health care settings. The final section of Chapter Three presents a *draft* recommended case management model and the key elements of this model which informed the survey administered to aged care Facility Managers to identify the elements of case management they were currently using. Chapter Four describes the study methods: the study design, setting, recruitment procedures, surveying procedure, data collection methods, processes and instrument selected. Data management and analysis, and ethical considerations are also described. Study results and discussion are presented in Chapters Five and Six. Chapter Five, is divided into two parts, each addressing the relevant research objectives (i and iii listed above), and concludes with the outcomes of a criteria-based process to identify facilities employing case management. Chapter Six presents a synthesis and interpretation of the findings in relation to the

research objectives and compares these with the literature. The major findings and avenues for further research conclude the thesis in Chapter Seven.

## **1.6 Conclusion**

As an approach and a framework for client care, case management remains in its infancy in Australia, particularly within the residential aged care sector. As the research base continues to develop for case management, this study provides some insight into the opportunities for case management in a sector which is characterised by increasing client acuity, poor staff skill mix, high client to staff ratio and funding limitations, while also being highly regulated regarding the structures, systems and outputs required to support continuous quality improvement in care services.

## **Chapter 2**

### **A Review of Residential Aged Care in Australia**

#### **2.1 Introduction**

The residential care sector is an integral component of the Australian health and aged care system, and remains “dynamic and changing” (Cheek, Ballantyne, Jones, Roder-Allen, & Kitto, 2003, p. 104). The major sections of this Chapter explore the political, economic, cultural and social issues that have shaped and continue to impact on the aged care sector. These contextual issues include: Government legislation, funding arrangements and the ‘Ageing in Place’ policy. Our rapidly ageing and frail aged care population places increasing demands on available resources and services within the sector, as does the increasing multicultural Australian population, the shortage of qualified nurses, changes in staff skill mix and care giving roles, and increasing community expectations. Each of these key features of the sector are discussed below.

##### 2.1.1 Ageing Population

The rapid ageing of the Australian population is unprecedented, and continues to drive political, economic, cultural and social agendas. In 2006, life expectancy in Australia at birth was 79 and 83 years for males and females respectively (Australian Bureau of Statistics, 2009). This is expected to increase to 85 and 88 years (Australian Bureau of Statistics, 2008, p. 9) respectively, by 2056. In the years from 2007 to 2056, the median age is expected to rise from 37 years to 45 years, when the population will have increased from 21.0 to an estimated 42.5 million (Australian Bureau of Statistics, 2008). While the impact of such a population increase has been heavily debated for the past decade, questions remain on how prepared Australia is to meet required health and aged care services.

In 2006, 2.7 million Australians were aged over 65 years (Australian Institute of Health and Welfare, 2007a); of these 52% were aged between 65-74 years, 36% were 75-84, and 12% were over 85 years (Australian Bureau of Statistics, 2008, p. 47; 2009; Australian Institute of Health and Welfare, 2007b). The Australian Bureau of Statistics (ABS) estimates that by 2101, 17.1 million will be aged 65 and over, and of these 5.8 million will be 85 years or older (Australian Bureau of

Statistics, 2008, pp. 46, 48). An initial increase in this figure is expected to occur as the peak of the baby boom generation reaches retirement age (Australian Bureau of Statistics, 2008; Australian Institute of Health and Welfare, 2000). Growth follows the increased health and longevity of the population after World War II, attributed to the development of technologically advanced medical and pharmacological innovations, a decrease in deaths from infectious diseases, and increased levels of health among Australians generally (Australian Bureau of Statistics, 2006; Williamson, 2008). Increasing immigration rates are also expected to further impact on the ageing population (Australian Institute of Health and Welfare, 2007b). Given current and projected population growth, the Australian health and aged care systems continue to seek solutions to meet the growing health needs of this rapidly ageing population.

#### 2.1.2 Residential Aged Care Population

While the demand for services by older Australians continues to grow, this has been predominantly experienced in the primary care sector as very few older people currently require residential aged care services. Less than one percent of the total population (152,178 clients) (Australian Institute of Health and Welfare, 2008b, p. 21; 2008e, p. 45), and only six percent of the 65 years and over age group (Australian Institute of Health and Welfare, 2008b; Royal College of General Practitioners, 2006) reside in a residential aged care facility. This number is however projected to increase to an estimated 30% for those aged 85 years and over in the coming years (Royal College of General Practitioners, 2006). In 2008, there were approximately 88 residential aged care places per 1,000 persons aged over 70 (Australian Institute of Health and Welfare, 2009a, p. 2), with 70 high and 30 low care clients per 100 beds (Australian Institute of Health and Welfare, 2008c; Thornton, 2008b). The Australian Institute of Health and Welfare (2009c, pp. 1, 9, 10) reported that 175,472 residential aged care beds were dispersed among 2,830 facilities, with 61% having 60 or less beds. The current trend however is towards operating larger facilities of 90-120 beds (Thornton, 2009). This trend for larger sized facilities has implications for the management models being employed, which are potentially very different to those models employed in smaller, stand-alone facilities.

## **2.2 Political Factors**

The variable standards of care operating in the Australian residential aged care sector was recognised as far back as the mid 20<sup>th</sup> century, possibly associated with an unregulated and largely private ownership of services in the sector. Subsequent introduction of strict government controls occurred as a direct result of community concern over service quality. Legislative and funding issues have therefore dominated the political agendas that influence residential aged care agendas.

### 2.2.1 Legislative Reform

Changes to Australian aged care services were introduced through legislative reform and political agendas in the post-World War II era. The National Health Act (1953) saw the initiation of legislated support for the growing aged population, which introduced compliance assessments across the sector through Standards Monitoring Teams (Commonwealth of Australia, 1953). Subsequent limitations in the Act included a lack of guidance for these teams, and a more refined and comprehensive Aged Persons Homes Act (1954) enabled progressive state-specific legislation, including structural requirements, a Charter of Residents Rights and Responsibilities, and identification of 'approved' facilities and subsequent funding (Mannix, 1999). Two decades later, the Coleman Report (1975) recommended linking the 'nursing home sector' with local health services, but this did not eventuate. Despite these legislative initiatives, until 1984 the quality of service within nursing homes was rarely examined because of private ownership and the financial, legal and political separation of aged care and public healthcare (Coleman, 1975).

In the 1980's the sector was feeling the continued effects of negative publicity relating to escalating costs, inappropriate client admissions, stories of client abuse and in some cases, very poor standards of care (McLeay, 1982; Ronalds, 1989; Senate Select Committee on Private Hospitals and Nursing Homes, 1985). These issues were partly a factor of an unregulated workforce, inconsistent care standards and mushrooming private aged care organisations (Kendig, 1989; Venturato, Kellett, & Windsor, 2007). Many advocates therefore argued for a radical change to aged care policy and services to address these inconsistencies in standards of care, funding allocations and care outcomes for clients (Kendig & McCallum, 1990; Kendig, 1989; McLeay, 1982; Pearson, 1992; Senate Select

Committee on Private Hospitals and Nursing Homes, 1985). While legislative reform was advocated and partly achieved, some barriers remained (for example streamlining transitions and funding), however lobbying for further reform continued in the sector. These reform strategies aimed to achieve a number of outcomes: increased community care resources; address the anomalies in residential aged care admission criteria; implement consistent outcome standards; facilitate comprehensive client assessments through Aged Care Assessment Teams (ACAT); and streamline admission and discharge processes (McLeay, 1982; Rhys Hearn, 1986). Despite these reforms, the sector continued to evoke considerable public scrutiny and criticism (Pearson, Hocking, Mott, & Riggs, 1992a). Holmes (1997), for example, identified links between unsatisfactory client admission assessments and poor service coordination, low quality of care, and unmet client needs. Reforms in response to these criticisms ultimately led to a refined regulatory framework that required the largely private aged care sector to comply with standards set by the Department of Health and Ageing in order to receive Government subsidies (Commonwealth of Australia, 2005a; Venturato, et al., 2007).

Strategic and decisive reform strategies were instigated over the subsequent decade, in parallel with implementation of the Aged Care Act (1997). The Act supported a series of strong initiatives to improve credibility and accountability within the residential care sector, including a revised funding measure, the 'Ageing in Place' policy, addition of 'extra service' places, and establishment of the Aged Care Standards and Accreditation Agency (ACSAA). The Agency's role was to ensure consistency in implementing the Standards set out in the Act (1997) (Braithwaite, 2001; Braithwaite, 1998; O'Reilly, Courtney, & Edwards, 2007). The accreditation process was largely driven by the ACSAA, which saw increased compliance and quality of care across the sector (Commonwealth of Australia, 2006, 2007b; Goddard-Jones & Gevers, 2002; Gray, 2001; Grenade & Boldy, 2002). The Aged Care Act (1997), mostly welcomed by aged care consumers, providers and staff, remains a core piece of legislation driving necessary changes, including funding and accountability within the sector.

Significant changes and strategic reviews of the sector have been undertaken over the past few decades, however few well-conducted studies have shown any significant improvements in care delivery and outcomes, despite tighter controls

over accreditation procedures (Gaboury, Bujold, Boon, & Moher, 2009; Martin, Ummenhofer, Manser, & Spirig, 2010; Tuckett et al., 2009; Wood, Flavell, Vanstolk, Bainbridge, & Nasmith, 2009) One notable change in the sector in recent years has been the reduction in qualified nurses (Cheek, et al., 2003; Duffield et al., 2005; Hegney, Plank, & Parker, 2003; Hogan, 2004). There is now substantially less Registered Nurse involvement in care practices, since their major role is now to manage the day to day operation of the facility (Hunter & Levett-Jones, 2010; Productivity Commission, 2005). While large-scale studies in the acute care sector have identified a link between reduced numbers of qualified nurses working in clinical roles and poorer outcomes for health care consumers, this has yet to be demonstrated in the aged care sector (Duffield, et al., 2005). Anecdotally, aged care managers and qualified nurses consider that the heavy administrative workload of Registered Nurses is detrimental to safe and effective 'hands-on' care.

This concern was heightened by a recent Government initiative to allow aged care clients to 'age in place', usually in low care facilities. This initiative was aimed at encouraging aged care services to allow an increasingly dependent client to remain in their same familiar care facility as they aged (Richardson & Bartlett, 2009). While this is an ideal way of helping older people to retain close relationships and life patterns, critics have pointed to the failings of the initiative since the staff working in low care facilities do not have nursing qualifications and there are inadequate numbers of care staff to manage a deteriorating client in those facilities (Kvarnstrom, 2008; O'Connor & Pearson, 2004) (see also Section 2.3). 'Ageing in Place', while attractive to families and some clients, has therefore been far from effective in addressing the complex and changing needs of many clients (Bigby, 2008). Facilities are however engaging in more flexible arrangements and boundary setting principles to ensure adequate staffing and funding arrangements are in place for the benefit of ageing clients (Richardson & Bartlett, 2009). Overall the residential aged care sector has improved from being a self-monitored and largely independent sector to a more effective, accountable and consumer driven system of supported care (Andrews-Hall, Howe, & Robinson, 2007). Nevertheless, debate continues among sector leaders about Government initiatives to improve systems, processes and outputs, including the utility of the Aged Care Act (Commonwealth of Australia, 2010c; Productivity

Commission, 2009, 2010), which had greatly shaped the aged care service landscape to this point.

### 2.2.2 Funding

Concurrent with legislative reforms, a considerable number of funding revisions were instituted over the past four decades to support the growing needs of the ageing population requiring supported care services. Following the implementation of the National Health Act (1953), the Government initiated funding to approved nursing homes, to the sum of twenty shillings per day per client (Commonwealth of Australia, 2005a, p. 20). The Aged Care Reform (1987) subsequently led to a revision of funding based on client acuity and needs, as recommended by the McLeay (1982) and Rhys-Hearn (1986) reports. Within the concept of funding based on client acuity came a series of measures to evaluate a client's level of independence in activities of daily living, in order to plan the type and level of nursing care required.

An early review of funding and care allocation by Gregory (1994) considered that funds allocated by the Government to the sector at that time were inadequate to meet the complex needs of clients living in low care and high care facilities. Rhys Hearn (1986) recommended that the mean care staff hours per client should be 16 hours per week; this was accepted by the Government through the introduction of the Care Aggregated Model (CAM) and Standard Aggregated Model (SAM). These two models enabled a mechanism for funding across the entire Australian residential aged care sector, thereby ensuring a consistent level of funding per client per day (Commonwealth of Australia, 2005a; Pearson, 1992). Clients were allocated a range of funding according to need, from ten hours of staffing per week for clients with low care needs, to 27 hours per week for clients with high levels of care needs (Pearson, Hocking, Mott, & Riggs, 1992b). Despite the sector's acceptance of the CAM and SAM assessment procedures, direct care staff complained of excessive documentation, increased workload, less one-to-one contact with clients, and insufficient hours allocated to attend to the complex needs of clients (Macri, 1994; Pearson, et al., 1992b). Jackson (1997, p.36) highlighted the challenges within the sector by quoting a Registered Nurse (RN) stating that she was routinely the only RN on duty on any one shift and the majority of that shift was spent "flat out...writing reports...and trying to replace staff". Despite active attempts to minimise workforce and care delivery issues, the



CAM and SAM instruments were disbanded and revised into one care and funding instrument. This was introduced in 1994 as the Residential Classification Index (RCI) (Health and Community Services, 1994).

Further refinements occurred to the RCI instrument throughout the mid-1990's so that actual care hours and the costs required for a variety of clients' needs were both realistic and representative. The RCI therefore became a vehicle to minimise inconsistencies evident in past funding instruments (Holmes, 1997). Nevertheless, implementation was fraught with complications, predominantly around funding levels, considered to be insufficient to support the time required for care staff to provide for individual client's needs (Gregory, 1993; Holmes, 1997; Macri, 1993). It was also evident that the RCI did not take account of the time required to coordinate services and improve care delivery by qualified nurses (Holmes, 1997). It took until 1997 to restructure the RCI in a way that more realistically reflected care and funding requirements. Nevertheless, ongoing reviews of the RCI occurred following concerns by staff that it was still not an entirely satisfactory tool for funding allocation.

The inception of the Residential Classification Scale (RCS) emerged after a widely consultative process with the sector. The RCS focused more precisely on funding allocation according to assessed needs, gained through consistent assessment approaches and measurements (Gray, 2001; Stein, Pretty, & McMillan, 2001; Stepien et al., 2006). However, as with other attempts to measure the precise levels of funding required to meet total client needs, the RCS still required qualified nurses to allocate a high proportion of their work time to assess and document client needs to allocate a funding score (Wylie, 2001). The process of developing and evaluating an effective funding tool for the sector continued for the next six years, with the input of many aged care advocates, academics, policy makers, qualified nurses and care managers, resulting in the development of the Aged Care Funding Instrument (ACFI) in 2008 (Commonwealth of Australia, 2008b).

Like its predecessors the RCI and RCS, the ACFI arose out of ongoing public scrutiny and review of the sector. The Aged Care Amendment Bill (2004) sought to simplify the Aged Care Assessment Team (ACAT) processes and modify accommodation charges, leading to the development of the ACFI. The instrument

includes a number of validated client measures that assist service providers to more accurately evaluate a client's acuity and complex care needs (Hogan, 2004; Thomas, 2008a). The ACFI aims to produce more consistent and reliable funding information, reduce documentation and minimise discrepancies in assessment (Andrews-Hall, et al., 2007; De Bellis & Williams, 2008; Thomas, 2008a). Nevertheless, the increased client assessment procedures required within the ACFI continue to place significant demands on both the ACAT staff and residential aged care staff who are primarily responsible for ACFI assessments and documentation.

### **2.3 Economic Factors**

While the ACFI attempts to more clearly identify client care requirements, the Australian health and aged care system is facing significant challenges in meeting clients' needs, due to the rapid growth in the older population and the reduced number of qualified nurses working in the aged care sector as noted earlier. (Access Economics, 2008; Australian Bureau of Statistics, 2009; Australian Institute of Health and Welfare, 2007b; National Health and Hospital Reform Commission, 2009) The Aged Care Reform agenda developed amid a substantial growth in the sector (Australian Institute of Health and Welfare, 2008c; Thornton, 2009). Hogan (2004, p. 1) reported that "on any given night about one in every 100 Australians received care in a residential aged care service or through a community care package". Trends in the needs of a rapidly ageing population, severity of client co-morbidities and their increasing levels of acuity have all had a significant impact on available economic resources. These pressures continue to demand high levels of investment in the residential aged care sector by federal, state and territory governments. One of the features of residential aged care is the high acuity of clients as they 'Age in Place'.

#### **2.3.1 'Ageing in Place'**

As noted earlier, 'Ageing in Place' is one Government initiative that assists older people to remain in their local community by accessing increased home-based services designed to meet their changing care needs (Andrews-Hall, et al., 2007; Cheek, et al., 2003; Commonwealth of Australia, 1997; Horner & Boldy, 2008; Jeong & Keatinge, 2004). This policy is particularly relevant in supporting the needs of the ageing rural community (Hegney, 2007; Lea & Cruickshank, 2005; Smith & Hays, 2004), and is considered a useful strategy to encourage better

utilisation of community services and resources. While much of the policy focuses on services and support strategies to assist clients to remain in their own homes and existing communities, the policy has also enabled mechanisms to provide more flexible and relevant provision of services to clients within aged care facilities (Productivity Commission, 2010), although the initiative has some limitations.

As residential aged care clients become more dependent and the facility has assessed its capabilities to manage these, clients may be offered a bed within the same facility despite their increasing high care needs (Carr, 2000; Cheek, et al., 2003; Crombie, Ham, Masman, & Mills, 2008; Dow & McDonald, 2007; Jeong & Stein, 2003; Jeong & Keatinge, 2004; Masters, et al., 2008). As discussed in 2.2.1 a number of high care clients are now able to continue living in traditionally low care facilities (Andrews-Hall, et al., 2007; Chandler, 2007; Richardson & Bartlett, 2009), and this has led to increased pressure on sector resources (Horner & Boldy, 2008; Jeong & Stein, 2003; Thornton, 2009). Despite this impact the initiative continues to be supported by the community at large (Hegney, 2007). However, until research has explored the financial, social and health outcomes for the client and family, and the effect on service providers, the benefits of this initiative for key stakeholders remain relatively unknown.

Nevertheless, some of the positive outcomes claimed from the 'Ageing in Place' policy include resource minimisation, increased utilisation of community services and improvements in acute care sector discharge policies. If proven, these are important outcomes for older clients, since a high proportion of older people are at risk of experiencing negative outcomes during a hospital stay (Crilly, Chaboyer, Wallis, Thalib, & Green, 2008). Frequently, older clients experience a health decline secondary to the initial diagnosis upon hospitalisation (Creditor, 1993), with Boockvar et al., (2005) reporting that older hospital clients being treated for an infection, had worse outcomes than those who remained at the residential aged care facility. Supported by 'Ageing in Place' policy, early discharge of older clients to the residential aged care sector is therefore a viable option for those without access to suitable and sufficient community-based support (Australian Institute of Health and Welfare, 2008c). In 2008, one third of residential aged care admissions were from clients discharged from acute care hospitals as a result of an early discharge policy; many with high acuity levels on discharge (Australian Institute of Health and Welfare, 2008c). While 'Ageing in Place' has reported

positive outcomes, there remain some issues that need to be considered, including residential aged care staff's access to medical support and treatment aids, and having insufficient knowledge to manage the needs of very unwell individuals (Australian Institute of Health and Welfare, 2008c). The residential aged care population has complex needs, which the 'Ageing in Place' policy acknowledges, but it is currently unknown whether existing services are sufficiently resourced to meet these needs.

### 2.3.2 Client Acuity

The increasing complexity and acuity of residential aged care clients is well known, with many having dementia, depression, and incontinence (Andrews-Hall, et al., 2007). Importantly, a majority require palliative care towards the end of their life (Australian Institute of Health and Welfare, 2008c). Exacerbation of functional disability and the presence of cognitive impairment and chronic illness, have resulted in more acute and chronic illness present within the population (Andrews-Hall, et al., 2007; Conway, 2007; Thornton, 2008b). In 2007, 233 per 1000 persons, over the age of 65 residing in a residential aged care facility, had a profound or severe disability (Australian Institute of Health and Welfare, 2008a). In 2003, 50% of older Australians with a profound or severe disability had arthritis, 43% had a hearing disorder, 38% hypertension, 30% heart disease, and 23% a stroke (Australian Institute of Health and Welfare, 2007b, p. 61).

#### *2.3.2.1 Dementia*

One of the client acuity features of the sector is the prevalence of dementia. The growing numbers of people with dementia in all societies is considered as an "epidemic" (Nepal, Ranmuthugala, Brown, & Budge, 2008, p. 484). Estimates suggest 24.3 million people worldwide have dementia, with one new case of dementia diagnosed every seven seconds (Ferri et al., 2005). Ferri et al., (2005) predicted that by 2040, 81.1 million people will have a diagnosis of dementia. The majority of clients living in residential care have dementia (Australian Institute of Health and Welfare, 2007b; Brodaty, Low, Gibson, & Burns, 2006); of the 175,000 people diagnosed with dementia in Australia, approximately 68,000 are living in residential aged care facilities, utilising 24.7 million bed days collectively (Australian Institute of Health and Welfare, 2007b). The Australian Institute of Health and Welfare (2007b) also reported that a person with dementia was 83% more likely to require placement in a high care facility, costing \$1.4 billion

annually, the majority of which is spent within the residential aged care sector. Innovative approaches to better assessment and management of clients with dementia continues to attract national attention as the needs and costs associated with this growing population increase (Chenoweth, et al., 2009; Sloss et al., 2000).

There is also growing evidence that residential aged care staff face increasing challenges in caring for persons with dementia, generally because of behaviours of aggression, agitation and resistance to care (Brodaty & Low, 2003; Brodaty, et al., 2006; Chenoweth, et al., 2009). Reports of the extent to which care staff are exposed to client aggression associated with dementia range from 11% (Astrom et al., 2004; Draper et al., 2002) to 51% (Mullan & Badger, 2007). One third of short-term residential respite clients are admitted for permanent placement for management of behaviour(s) related to dementia, mainly because family carers are unable to cope. Four out of five persons with dementia demonstrated behaviours which impacted negatively on staff (Neville & Byrne, 2002), such as resistance to care, and almost one in every five clients displayed direct harmful behaviours (e.g. hitting staff) at least weekly (Draper, Brodaty, Low, et al., 2002, p. 357). On a daily basis, many clients with dementia refuse to participate in activities (10%), are resistive to care (8%) or medication administration (2%), refuse to cooperate with care staff (5%), or are verbally abusive to them (4%) (Draper, Brodaty, Low, et al., 2002). Additionally, the prevalence of client to client aggression in the sector is increasing (Evers, Tomic, & Brouwers, 2002), with clients in dementia-specific units being three times more likely to be injured by other clients, than those residing in non-dementia-specific settings (Shinoda-Tagawa et al., 2004).

These client behaviours can also lead to poor health in care staff. Evers et al. (2002) identified a strong link between carers' exposure to physical aggression from clients and subsequent increases in emotional exhaustion ( $p < 0.01$ ) and a sense of depersonalisation ( $p < 0.01$ ). However, the frequency of client aggression towards residential care staff has lead them to "accept violence as part of their job" (Sandvide, Astrom, Norberg, & Saveman, 2004, p. 356). Two out of five residential care staff are injured through client interaction, although 40% were unlikely to report such incidents (Grealy, 2005). These 'usual' experiences in care practices increase stress for aged care staff (Cubit, Farrell, Robinson, & Myhill,

2007; Hegney, 2007) and impact significantly on service delivery (Access Economics, 2008), which in turn, effects outcomes for clients with dementia.

#### *2.3.2.2 Depression*

Although not a causal factor, depression is also commonly present in clients with dementia. As early as 1991, 82% of Australian high care clients were assessed as having at least one depressive symptom while ten percent met the criteria for major depression (Phillips & Henderson, 1998). A number of studies have identified up to one quarter of the residential aged care population have a diagnosis of depression (Bagley et al., 2000; Davidson, Koritsas, Clarke, O'Connor, & Liddell, 2005; Rovner et al., 1991). Despite this identified presence of depression in clients, care staff often lack knowledge about this debilitating condition (Bagley, et al., 2000; McCabe, Davison, Mellor, & George, 2008; Mellor, Davison, McCabe, & George, 2008a, 2008b; Mellor, Russo, McCabe, Davison, & George, 2008). Depression is also generally undiagnosed in this client group and poorly managed in the sector (Bagley, et al., 2000; De Bellis & Williams, 2008; Hassall & Gill, 2008; Mellor, Davison, et al., 2008b; Wu & Kelley, 2007). With the inclusion of the Cornell Scale for Depression in the ACFI (Commonwealth of Australia, 2008b), currently being employed to assess all aged care clients in Australia, staff knowledge of depressive symptoms and its detection in this client population is likely to improve (De Bellis & Williams, 2008). However, detection of the illness does not necessarily lead to improved management and better outcomes for the client, especially since there is a paucity of specialist medical services available to aged care clients with depression (Draper & Low, 2004; Moyle & Evans, 2007; Simmons et al., 2004).

#### *2.3.2.3 Incontinence*

Another common co-morbidity present in the residential aged care population is incontinence. A longitudinal study of community care clients demonstrated a strong correlation between the incidence of incontinence and admission to a high care facility (Wells, Swerissen, & Kendig, 1999), with up to a 66% risk factor for admission into residential care (McCallum, Simons, Simons, & Friedlander, 2007). Sloss et al., (2000) identified that 56% of all older Australians had this condition, and this is present in more than 70% of aged care clients (Australian Institute of Health and Welfare, 2008c). The presence of incontinence significantly impacts on care practices (Tanaka et al., 2009) and can lead to reduced quality of life

(Aslan, Beji, Erkan, Yalcin, & Gungor, 2009; Dingwall, 2008; Patterson, 1995), as it renders the client more vulnerable, since there is greater reliance on staff to assist them manage their toileting. There are many negative outcomes of having incontinence; an Australian study (Teo, Briffa, Devine, Dhaliwai, & Prince, 2006) reported a correlation between incontinence, sleep problems, and falls in elderly women. As well, people with incontinence frequently feel that nothing can be done and consequently, become socially isolated, depressed and can be subjected to hostility from carers (De Laine, Scammell, & Heaslip, 2003; Garcia, Crocker, Wyman, & Krissovich, 2005; Rigby, 2005). It is one of the conditions co-existing in persons with dementia that can precipitate their admission to a residential aged care facility (Australian Institute of Health and Welfare, 2008b).

Incontinence also has implications for residential aged care staff. Yu and Kaltreider (1987) examined the cost effectiveness of treating urinary incontinence and the attitudes of nurses towards the condition in four aged care facilities. Only one third of care nurses had positive feelings about clients with incontinence, and more than two out of five staff expressed dislike in caring for these clients (Yu and Kaltreider, 1987). This may be related to poor staff knowledge of continence and management approaches (De Laine, et al., 2003).

Having clients with incontinence is also costly for the aged care organisation: in service and product utilisation (Du Moulin, Hamers, Paulus, Berendsen, & Halfens, 2005; Lawhorne, Ouslander, Parmelee, Resnick, & Calabrese, 2008) and staff workload. A study by Yu, Johnson, Kaltreider, Hu, Brannon and Ory (1991) employing the Incontinence Stress Index (Yu, 1987) to measure staff reaction to urinary incontinence in 291 nursing home staff from six nursing homes. The authors found that incontinence impacted on nursing staff recruitment and retention (Yu, et al., 1991). Good management of incontinence is fundamental to quality nursing care and to a client's quality of life, yet staff knowledge and skill appears limited (Thomas, 2008c).

#### *2.3.2.4 Terminal Illness and Palliative Care*

Complex care needs in aged care clients are further complicated by terminal illness. In 2008, 70% of clients were assessed as requiring high care services (Australian Institute of Health and Welfare, 2008c; Thornton, 2008b), with almost nine out of ten permanent residential care clients dying from a terminal illness

(Australian Institute of Health and Welfare, 2007b, p. 139). The increasingly high acuity and complexity of clients is coupled with an increasing average length of stay for those in permanent care; average length of stay has increased from 131 weeks in 1998-9 to 146 weeks in 2006-7 and more recently to 148 weeks in 2007-8 (Australian Institute of Health and Welfare, 2007c, 2009c). In addition, at any one time new admissions account for one-third of all permanent residential aged care clients, reflecting the high turnover of clients due to death and respite care services (Australian Institute of Health and Welfare, 2007b). As well, 86% of separations from aged care facilities were from high care services, predominantly due to death (Australian Institute of Health and Welfare, 2007c). It is also reported that unwell, older acute care hospital clients discharged to high care respite services are 30% more likely to die, compared to those discharged to low care respite services (21%) (Australian Institute of Health and Welfare, 2008c, p. 48). In addition, 20% of clients over the age of 65 discharged from hospital to a permanent residential aged care bed died within three months of admission (Australian Institute of Health and Welfare, 2008e) and a further 20% died within a year of admission (Australian Institute of Health and Welfare, 2007b). These figures attest to the complex care requirements of aged care clients, many of whom have a terminal or life threatening illness.

Given the staffing and funding limitations previously identified in the sector, it is difficult for staff to achieve the level and type of care required for these terminally ill clients (Allen, Chapman, O'Connor, & Francis, 2008; Katz, 2005; National Health and Hospital Reform Commission, 2009). Clare and De Bellis (1997) reported that only half of the 151 Australian aged care facilities who participated in their 'Palliative Care Approach' project were providing palliative care interventions to at least 10% of their clients. Four out of five low care facilities surveyed indicated they were unable to accommodate clients requiring palliative care (Rohr, Schneider, Good, & Sattler, 2003). One identified need arising from this and other research is to improve palliative care knowledge and intervention skills in staff, particularly in symptom control and pain management (Allen, Chapman, et al., 2008; Bowler, 2008; Bowler, Mayne, & Gamlin, 2009; Clare & De Bellis, 1997; Ersek, Kraybill, & Hansberry, 2000; Gibbs, 1995; Katz, Komaromy, & Sidell, 1999; Katz, 2005; Phillips, Davidson, Jackson, & Kristjanson, 2008; Rohr, et al., 2003; Zehetmayr, 2000). This evidence of growing client acuity and increasingly complex health needs reveals an aged care sector under continued strain.



## 2.4 Cultural Factors

Australia is a multicultural society with one of the most diverse populations in the world (Rao, Warburton, & Bartlett, 2006; Ward, Anderson, & Sheldon, 2005). This context adds complexity to the aged care system, with subsequent impact on the health and well-being of vulnerable and frail clients, and the staff caring for them (Adams, 2009; Anderson, 2002; Chenoweth, Jeon, Goff, & Burke, 2006; Chussil, 1998; Rao, et al., 2006).

A growing number of residential aged care clients are from diverse cultural backgrounds (Australian Institute of Health and Welfare, 2007a); in 2006-7 more than one quarter of clients were born overseas (Australian Institute of Health and Welfare, 2008e), and approximately 15% do not speak English (Australian Institute of Health and Welfare, 2007a). In 2005, 20% of aged care clients preferred, or could only speak, a language other than English (Runci, Redman, & O'Connor, 2005). By 2011, it is estimated that one in five people over the age of 80 will be from a culturally and linguistically diverse (CALD) background (Australian Institute of Health and Welfare, 2008e) and this is the group most likely to require residential aged care services. The majority of clients from CALD backgrounds are not well supported in the sector with cultural specific services, where staff are able to communicate with the client in their native language (Adams, 2009). It has also been difficult to develop an appreciation and acknowledgement of different cultures among nursing staff (Chui, Donoghue, & Chenoweth, 2005; Walker, Weeks, McAvoy, & Demetriou, 2005).

While a growing number of staff are from CALD backgrounds, nursing in Australia remains “socially framed and clearly socially specific” (Chenoweth, et al., 2006, p. 35). To ensure aged care services are culturally sensitive, managers need to actively employ staff with the same language skills and cultural values as clients, so that client’s needs and preferences can be met (Adams, 2009). People from CALD backgrounds, like other aged care clients and families, expect quality care and for services to be culturally sensitive (Chenoweth, et al., 2006). Nevertheless, Runci et al., (2005) found that one quarter of Australian residential aged care facilities did not provide any language relevant services, one of the fundamental cornerstones of a culturally competent health service. Providing translated text

and literature (Daly et al., 2002), as well as offering audio-taped material for non-readers, is necessary to improving cultural competence (Walker, et al., 2005).

The aged care sector also has a multicultural workforce. To cater for the growing needs of a CALD aged care population, facilities also need to embrace cultural sensitivity towards their multicultural staff (Roberts, Dalton, Evans and Wilson, 2007), particularly within dementia specific facilities (Australian Institute of Health and Welfare, 2007a; Chenoweth, et al., 2006; Yoder, 2001). Many residential aged care staff have “very poor English language and communication skills” (Jackson & Raftos, 1997, p. 36). The 2006 Census, revealed that of persons 15 years and over who were born overseas, 12% worked in the healthcare and social assistance sectors (Australian Bureau of Statistics, 2007), which has seemingly increased dramatically with a more recent report indicating it is two thirds of the residential aged care workforce (National Institute of Labour Studies, 2008). In recent years the number of CALD staff has increased with the uptake of non-English speaking background overseas-qualified health professionals (Jeon & Chenoweth, 2007). The growth of a culturally diverse residential aged care staff population, along with a growing number of clients unable to communicate in English places increasing pressure on the sector already stressed by increasing client acuity and complexity.

The identified lack of CALD client autonomy, combined with the disempowerment of CALD staff requires policies and strategies to ensure that clients are able to effectively communicate their needs and expectations and staff are enabled to assist in this process (Goold, 2001; Gray, 2003; Omeri & Malcolm, 2004; Walker, et al., 2005). Aged care staff therefore need both education and support to gain self-awareness of the impact their attitudes, values and beliefs have on client well-being (Omeri & Ahern, 1999; Polaschek, 1998). This requirement places pressure on an already stressed aged care sector, since provision and access to services must be provided “regardless of race, culture or language” (Commonwealth of Australia, 1997, p. 3). The domain of cultural sensitivity therefore needs to be considered in articulating the Australian residential aged care accreditation standards (Aged Care Standards and Accreditation Agency, 2007) and Aged Care Act (1997), as there is currently little or no reference to cultural issues in these documents. Addressing this issue requires a culture shift in the sector, to reduce the social isolation existing in this population (Fahey, 2003; Ward, et al., 2005).

This changing client and staffing profile in the sector will continue to impact on community and system expectations.

## **2.5 Social Factors**

Many issues occurring in residential aged care draw attention to societal pressures. Workforce and community expectations impacting on the residential aged care sector include staffing shortages, the ageing of this workforce, poorly articulated role development, poor job satisfaction and low-levels of consumer engagement in decision-making.

### 2.5.1 Workforce Issues

An estimated two in every hundred employees work in the Australian aged care sector (Hogan, 2004, p. 1). The capability of the sector to supply a skilled workforce that is self-sustaining in the near future remains problematic. International and national health workforce shortages, combined with an ageing population and changing care role delineation within the sector are the most pressing challenges at the present time.

#### *2.5.1.1 Staff Shortages*

Staffing shortages are critical and a dominating issue in the health system, both nationally and internationally (Cheek, et al., 2003; Doull & Campbell, 2008; Ford, Wynne, Rice, & Grogan, 2008; Fritzen, 2007; Lynn & Redman, 2006; Thomas, 2008b; Yoder, 2001). The root cause of workforce issues is the “inability to develop, attract and retain the workforce necessary ... to meet the current and projected staff shortages” (Isgur, 2008, p. 18). Health staff shortage is a global phenomenon (Coile & Matthews, 1999; Haesler, Nay, O'Donnell, & McAuliffe, 2007; Isgur, 2008; Lynn & Redman, 2006; Productivity Commission, 2005), and is a serious impediment to the sustainability of the Australian health system (Productivity Commission, 2005). According to Australian researchers, a discernable and concise effort is required to address this national staffing crisis (Coile & Matthews, 1999; Jackson, Mannix, & Daly, 2003) with numerous panels, reports and forums convened to seek strategies to address the issue (Cowin & Jacobson, 2003; Drenkard & Cohen, 2004; Ford, et al., 2008; Unruh, 2005).

High profile nursing specialities such as emergency, intensive care and paediatrics, have tended to have more success at attracting and retaining staff

than has the aged care sector (Australian Institute of Health and Welfare, 2003, 2008d; Productivity Commission, 2005; Venturato, et al., 2007; Zurn, Dal Poz, Stilwell, & Adams, 2004). The staffing shortage in residential aged care represents the workforce crisis even though the sector was estimated to employ close to 30% of the Australian health workforce (Australian Institute of Health and Welfare, 2008d, p. 19). Data on the sector also reveals a shift in work patterns with increasing staff casualisation. Registered and Enrolled Nurses worked on average 33 and 31 hours per week, respectively (Australian Institute of Health and Welfare, 2008d, p. 14) with more than two thirds of the workforce employed in part-time positions (Jackson, et al., 2003; Richardson & Martin, 2004).

Increasing casualisation in the sector creates a number of difficulties for Managers. For example, the major concern in the sector is the paucity of experienced nurses, as previously raised in Section 2.2.1 (Australian Institute of Health and Welfare, 2008d; Cowin & Jacobson, 2003; Doull & Campbell, 2008; Drenkard & Cohen, 2004; Jackson, et al., 2003; Productivity Commission, 2005; Unruh, 2005); this is predicted to worsen (Duffield, et al., 2005). To overcome this issue, many organisations have consequently sought strategies to up-skill 'unregulated' staff to fill 'qualified' staff positions. Between 1995-96 to 1999-2000 employment of RNs and ENs decreased while the number of care service employees increased from 6-18% (Hogan, 2004). In this same period, the total number of employees in the sector fell by 12%, which coincided with a dramatic fall of 63% in the number of employees not providing direct care (Hogan, 2004, p. 17; Richardson & Martin, 2004).

Given the increasing proportion of unregulated aged care staff being employed, RNs seldom work with staff who are adequately skilled to meet the needs of vulnerable clients (Barry & Stein, 2005; Cooper & Mitchell, 2006; Hegney, et al., 2003; Jackson, et al., 2003; Pearson, et al., 1992b). Duffield et al., (2005) cautioned that replacing qualified nurses with unregulated (and cheaper staff) might not improve the situation; replacing qualified nurses with unregulated staff has poorer outcomes for clients, since supervision is extremely difficult given the excessively high ratio of unregulated to qualified staff (Cohen-Mansfield, 1997; Conway, 2007; Hogan, Moxham, & Dwyer, 2007; Jackson & Raftos, 1997; Lynn & Redman, 2006; Productivity Commission, 2005).

### *2.5.1.2 Ageing Workforce*

Along with staffing shortages and reduced numbers of qualified nurses in the sector is the ageing of the skilled members of the workforce, a factor which directly impacts on staff recruitment, development and staff profile (Conway, 2007; Isgur, 2008; Richardson & Martin, 2004). Registered Nurses working in the sector continue to be the oldest in the health system (Australian Institute of Health and Welfare, 2003, 2008d). The Australian Institute of Health and Welfare (2008d, p. 25) reported the profile of a nurse working in aged care as predominantly female (94%) with an average age of 49 years; approximately six years older than the average healthcare worker (Access Economics, 2009). It was estimated that 41% of qualified nurses over 45 in 2001 (Productivity Commission, 2005) will consider retirement by 2014. This prediction has led aged care services to consider implementing supportive measures to facilitate lifestyle choices suitable for an ageing workforce (Watson, 2008), such as enhanced job flexibility and part-time work opportunities. The impact of these strategies however remains unknown.

### *2.5.1.3 Changing Role Expectations*

Given the workforce issues identified, the role of the aged care nurse continues to be scrutinised (Productivity Commission, 2005). Residential aged care Registered Nurses (RNs) are taking more management and leadership roles (Productivity Commission, 2005), and performing less direct care and supervisory roles (Hassall & Gill, 2008; Toivianen, 2002) in order to support funding and regulatory requirements (Hunter & Levett-Jones, 2010; Venturato, et al., 2007). While the RN role has undergone a series of transformations in the sector these staff are now more than ever, held accountable for the carers they supervise (Cooper & Mitchell, 2006; Jackson & Raftos, 1997). An exploratory qualitative study of RN work roles in four United Kingdom aged care facilities found that knowledge, training and expertise were a defining element to delineate roles (Perry, Carpenter, Challis, & Hope, 2003). Less than half of the non-qualified (RN) and Enrolled Nurse (EN) workforce in the sector had completed secondary schooling to Year 12 (Richardson & Martin, 2004), while RN and ENs were found to have the least number of post-registration qualifications (10%) of all nurses. In contrast, in the acute care sector more than one third of RNs had specialist qualifications (34%) (Australian Institute of Health and Welfare, 2008d). Low staff qualifications and skill levels in the RN and EN aged care workforce are therefore important considerations for sector outputs.

#### *2.5.1.4 Staff Satisfaction*

The Productivity Commission (2005) identified that in NSW alone there were 30,000 RNs not working as nurses due to poor job satisfaction, pay and working conditions. Poor job satisfaction is evident in all healthcare but particularly within the aged care sector (Barry & Stein, 2005; Cheek, et al., 2003). In a cross sectional study by Brodaty, Draper and Low (2003, p. 588), one quarter of Australian residential aged care staff reported that clients “provided no job satisfaction”. Staff turnover rates in high care facilities were 40-75% per year, with some escalating over 500%, giving a less than positive outlook into the sector (Cohen-Mansfield, 1997).

The Productivity Commission (2005) reported a number of key factors adversely affecting nurses’ job satisfaction: lack of career pathways, poor skill recognition, inadequate pay (Lynn & Redman, 2006), limited scope of practice, inadequate training opportunities, lack of support mechanisms, inflexible working conditions, poor professional status, high stress, and heavy workload, both physical and psychological (Hegney, et al., 2003; Pearson, et al., 1992a; Raikkonen, Perala, & Kahanpaa, 2007; Wagner, 2007). Further to this, Venturato, Kellett and Windsor (2007) identified links between excessive regulatory requirements and poor job satisfaction, evidenced by residential aged care staff’s sense of being devalued and powerless to meet clients’ holistic care needs. Job satisfaction is therefore critical when considering employee sustainability in the sector.

#### 2.5.2 Consumer Expectations

While the residential aged care setting plays an important role in meeting the health needs of older Australians who do not have sufficient community-based support to live in their own homes, as noted earlier the sector has been plagued by reports of poor quality services for this vulnerable population. This issue is of concern to both the Government and wider community (McLeay, 1982; Ronalds, 1989; Senate Select Committee on Private Hospitals and Nursing Homes, 1985; Venturato, et al., 2007). Consumers, both older people and their family members/carers, expect excellence in residential aged care services (Edwards, Courtney, & Spencer, 2003a, 2003b; Marquis, Freegard, & Hoogland, 2004), with quality, outcome-based care, transparent and rigorous processes, and skilled nursing services (Braithwaite, 2001; Healy & Braithwaite, 2006; National Health

and Hospital Reform Commission, 2009; Quine, Bernard, & Kendig, 2006). These expectations continue to drive changes in the sector, including the provision of more 'extra service' facilities and more skilled high care services (Bruen, 2005, p. 130). 'Extra services' facilities are often more aesthetically appealing and can include: private sitting areas, choice of meals, services such as a hairdresser, beautician, chef and access to alcohol beverages and other products that improve quality of life (Commonwealth of Australia, 1997, 2005a, 2006; Marquis, et al., 2004). While only consumers with the financial means can pay for these 'extra services', the growing expectation of quality in usual residential aged care facilities places even greater pressure on a system marked by staff shortages and reduced staff skill-mix.

## **2.6 Summary: Factors to consider in developing a model of case management for Australian residential aged care**

Residential aged care is a complex milieu, marked by competing political, economic, cultural and social factors all focused on unique ways of delivering a quality service within a safe and evidence-based environment. A case management model considered relevant to the sector must align with the related legislative and funding requirements. This speaks directly to the drive for economic viability across the sector.

Any model of case management requires flexibility to enable improved care for all clients, including both those 'ageing in place' and with increasing acuity of pre-existing or new conditions that impact on their quality of life. Achieving positive health and quality of life outcomes are influenced by staffing, not just the staff numbers and skill sets, but also the increasing presence of multicultural staff and clients in a sector shaped by western health service standards. This last factor needs more critical debate at local, state and national levels, to inform policy that reflects the contributions and the difficulties associated with cultural diversity in Australian health and aged care services. Workforce planning speaks again to the complexity of the workforce required to provide care to clients in residential aged care. Case management approaches enable targeting of the professional development and leadership capabilities of staff and supports flexible arrangements where possible. Improving care outcomes must remain central to goals within any model of care, and this may lead to a revision of staffing skill mix and role distribution to meet this need.

## **2.7 Conclusion**

Lessons have been learnt and opportunities heeded to plan for and address the future needs of the residential aged care sector in Australia. Commentators have been complimentary of the legislative framework that has directed sector requirements, but at the same time have criticised still evident shortfalls in aged care service provision for the community. Challenges continue in relation to inadequate skill mix and staffing capabilities, increased client acuity, cultural insensitivities, and mounting consumer expectations. It is clear from an historical perspective, that each new challenge has been conceptualised and translated into practice to support a sector accountable to a critical wider community. This backdrop has provided the context for now discussing case management in the residential aged care sector. Chapter Three explores the opportunities that case management may bring to the Australian residential aged care sector.



## **Chapter 3**

### **Case Management: A Review of Literature**

#### **3.1 Introduction**

Chapter Two provided an overview of the Australian residential aged care sector and identified some key issues that confront a sector whose chief aim is to improve access to extended care services for older Australians unable to continue living in their own homes. The Chapter identified ways in which legislation and government policy have progressively supported the sector to benefit older Australians requiring long-term care. Case management has evolved to be an integrative and collaborative process of coordinating health care for a variety of care groups, including older persons with complex needs through assessment, planning, implementation and evaluation. Case management is currently employed in some aged care facilities in Australia, but the approach has not been systematically evaluated.

This Chapter discusses the historical development and implementation of case management in health services. Definitions and the historical development of case management are initially described. Search strategies are then outlined, followed by a description of some different case management models, and an analysis of the advantages and disadvantages of specific models. Finally, key elements of a case management model suitable for implementation in the residential aged care sector are identified.

#### **3.2 Historical Perspective**

Case management is an integrative and collaborative process of coordinating individual care through assessment, planning, implementation and evaluation. Differences in the interpretation and implementation of case management are however illustrated by the diverse definitions of case management found in the literature.

##### 3.2.1 Defining Case Management

Case management has been reviewed and redefined for many decades, owing to the variety of applications and operational environments in which it occurs (Aliotta, 1996; Drennan & Goodman, 2004; Intagliata, 1982). Variations in definitions

depend on the discipline in which evolved, the setting in which it was implemented and the intended application by different staff who engage with the framework. In general, the aims of case management are to coordinate care, minimise costs, improve access to services and resources, sustain a cost effective service delivery model (Aliotta, 1996; Fraser & Strang, 2004; Huber, Hall, & Vaughn, 2001; Ramey & Daniels, 2001; Rosen & Teesson, 2001), and ensure inter-professional collaboration to achieve intended outcomes (Tyrer, 2000; White & Hall, 2006). Key attributes of case management include a collaborative approach and integration of services and resources, aimed at improving an individual's planned health outcomes (Cohen & Cesta, 2005; Salazar, Graham, & Lantz, 1999; Tahan, 1999; Thornicroft, 1991; Vann, 2006; Young & Sowell, 1997). Core functions of many case management models include needs assessment, service planning, implementation, and evaluation of the outcomes for clients (Huber, Sarrazin, Vaughn, & Hall, 2003). In essence, case management is a value-added, action-orientated series of processes, whose purpose is to contribute to quality of care services. This hybridisation of case management over time, has led to frequent misunderstanding and misinterpretation of the model, exemplified by Moreo (1998) as "...the glue of managed care .... The trouble is we're not quite sure how the glue works, how much to use, or even when to use it" (p. 67).

### 3.2.2 Historical Development of Case Management

Case management has experienced a stilted inception and remains in a state of flux. The concepts that defined case management were identified as early as the 1900s in psychiatric and social work sectors (Huber, 2000; Zink, 2005). Case management was introduced initially in the USA as a mechanism for coordinating a fragmented community care sector (Intagliata, 1982). A strong resurgence of case management occurred in North America following World War II (Zink, 2005) to meet the care needs of psychiatric clients being discharged to the community, and to assist injured returned service personnel with complex rehabilitation needs (Zink, 2005). By the 1960s, case management gained momentum and emerged as a variation of the original model to assist with a fragmented, costly and disjointed USA health system (Lee, Mackenzie, Dudley-Brown, & Chin, 1998). It was subsequently introduced into mental health services to meet the needs of people with intellectual impairment being de-institutionalised (Marshall, 1996; Muir-Cochrane, 2001; White & Hall, 2006). Case management models were also developed within the health and risk insurance industries (Huber, 2000), leading in

the 1970s to the construction of Case Manager positions in the USA as 'system agents'.

The case management trend soon penetrated the acute health care environment first in North America in 1985, where RNs utilised their skills in resource allocation and client care to perform a variety of roles, including clinical coordination and facilitation, resource management and discharge planning (Cesta & Falter, 1999). Carondelet St. Marys Hospital in Tucson, Arizona and New England Medical Centre, Massachusetts, were reported to be the first to employ case management, based on a nursing model of care, to address nursing staff shortages, health funding cuts and resource depletion (Cesta & Tahan, 2003; Johnson & Proffitt, 1995). Implementation of case management into the acute health care sector saw positive outcomes, such as shortened length of patient stay and acceleration of acute care procedures, along with increased job and client satisfaction and decreased occupational stress (Cesta & Tahan, 2003).

United States of America Government legislation supported the development of Clinical Case Management (Burns, 1997). Services providing care for clients with severe mental illness were required by legislation to "demonstrate substantial progress towards providing case management services" (Burns, 1997, p. 395). Clinical Case Management subsequently became the model of choice for mental health services during the early 1990's (Burns, 1997). This model was considered a possible solution to the "haphazard delivery of services", and a way of assisting individuals to "coordinate services and manage the complexities of psychiatric care" (Rosen & Teesson, 2001, p. 732).

Older health populations have benefited from the development of case management in the mental health and acute care sectors. The first reported program for the older person was 'On Lok', a USA-based approach assisting community-dwelling frail older people to stay in their own homes for as long as possible (Bailey, 1998). The USA Healthcare Financing Agency adopted the On Lok approach to client management in the 1980s, primarily to reduce healthcare costs (Bailey, 1998), through the Kaiser Permanente case management model. This model's main thrust was to provide continuity of care by improving client access to resources, improving client/family health education, initiating health screening, and undertaking comprehensive client assessment and care

coordination. There was an evolution from the Kaiser Permanente model to the 'Extended Care' model in 1984, becoming a fundamental component of the USA's health system. Community support for the extended Care model grew as research identified that the model minimised hospital admissions for older persons (Bailey, 1998). Since 40% of hospitalised older persons experienced adverse complications, one-third experienced reduced function and fewer than half fully recovered from illness and disability during a hospital stay at the time, the model was found to be a critical factor in supporting the health of older people (Bailey, 1998, p. 174).

Case management in the United Kingdom developed in the late 1980s, and in 1993 was legislated as a component of the National Health Service (Evans, Drennan, & Roberts, 2005; Lee, et al., 1998; Marshall, 1996; Simpson, Miller, & Bowers, 2003). In the United Kingdom the term used to denote case management was 'care management' as the term 'case' was "considered offensive to users" (Burns, 1997, p. 396). Case (care) management was implemented as a hybrid of the American EverCare Model. The EverCare Model provoked much controversy in its implementation and has been reported to have not achieved its intended outcomes (Fraser et al., 2005; Gravelle et al., 2007; National Primary Care Research and Development Centre, 2005, 2006; Oliver, 2007). Even after a decade of continued refinement and review, case management remained unpopular, and was criticised as being overly bureaucratic, poorly distributed and operating with insufficient resources (Murphy, 2004; Simpson, et al., 2003). While the United Kingdom has had a strong case management vision, without the necessary implementation processes and cultural transformation required, it has failed to achieve positive outcomes (Oliver, 2007). This mixed reception to case management led to an operational review of the health system to meet population and health demands (Abdallah, Fawcett, Kane, Dick, & Chen, 2005; Abdallah, 2005; Fraser, et al., 2005; Gravelle, et al., 2007; National Primary Care Research and Development Centre, 2005, 2006; Sheaff et al., 2009).

Japan, South Korea and Hong Kong have more recently implemented case management in response to rapidly ageing populations, financial difficulties in the health system and fragmented health care resourcing (Leung, Liu, Chow, & Chi, 2004; Yau, Leung, Yeoh, & Chow, 2005). In these countries case management

has been generally well accepted as a positive intervention (Petrelli, 2003). The Japanese Government has provided significant commitment to the implementation of the Japan Case Management Guidelines (JCM-CL) which are used to guide most mental health institutions across the country (Oshima, Cho, & Takahashi, 2004). However, Case Managers have experienced significant difficulties because of their largely administrative roles (Lee et al., 1998). Operationally, Case Managers have been criticised for lacking cultural sensitivity and poor communication (Devine, 2004; Petrelli, 2003). In response to this criticism South Korea has implemented case management education processes to minimise these limitations (Powell, 2005).

In Australia, case management has experienced a fragmented approach in its application. Initially, it began with a direct focus on cost savings through the de-institutionalisation of clients within the mental health sector (Rosen & Teesson, 2001). In the mid 1990s, the Australian acute care and mental health sectors set about to increase service coordination, vertical integration and undertake cost containment due to the growing aged population and subsequent increased incidence of chronic disease burden on the health system (Esterman & Ben-Tovim, 2002). Case management, however, became associated with poor client follow-up, inappropriate service provision and insufficient numbers of skilled staff to operationalise planned care (Rosen & Teesson, 2001). Subsequent trials of case management were ineffective, and as a result, the approach was abandoned in many organisations and jurisdictions (Esterman & Ben-Tovim, 2002). Within the mental health sector, the Assertive Community Management brand of case management continued, as it demonstrated positive outcomes such as reduced length of stay, improved functional outcomes for clients and improved medication compliance (Rosen & Teesson, 2001).

At present, case management is experiencing a state of growth in Australia; it remains in the renewal phase and is evident across a wide variety of health sectors (Andrews & Sunderland, 2009; Backus, Weinkove, Lucas, & Jespersen, 2008; Case Management Society of Australia, 2004, 2006; Cooper & Yarmo Roberts, 2006; Hangan, 2006; Harvey, Gursansky, & Kennedy, 2001; King, 2009; Klineberg, 2008; Nobili, Manco, Raponi, & Marcellini, 2007; Passey, Sheldrake, Leitch, & Gilmore, 2007; Roberts, Dalton, Evans, & Wilson, 2007; Rosen, Bond, & Teesson, 2008; Rosen, Mueser, & Teesson, 2007; Udechuku et al., 2005). While

there are mixed reports of the advantages of implementing case management in health services, a more extensive search for evidence supporting these claims was undertaken to identify the key elements of a number of successful operational case management models.

### **3.3 Search Strategy**

The databases accessed included CINAHL, Cochrane Library, Medline and PsycINFO. Websites for the Joanna Briggs Institute for Best Practice, Australian Department of Health and Ageing, and Australian Bureau of Statistics were also searched to access published reports and guidelines. Searches were undertaken both singularly and combined by title, subject and key words, including: aged care, resident, Australia\$ and healthcare (or health care), case manage\$, case management model, care manage\$, outcomes manage\$, organisation\$ vision (and organization\$ vision), case ratio\$, and critical pathway\$ (\$ symbol was used to truncate words in order to search a variety of endings within the one term). Specific search filters for publication year (2000-2009) and English language only were used to refine the search outputs. Ancestry searching or primary source searching, hand-searching journals, and networking were conducted to increase the selection of quality studies. Search results are presented in Appendix A.

The selection and review process included reviewing each article for quality and credibility by identifying the research objective or hypothesis, surveying technique, analysis of data, and the interpretation of results using Gangon (1987), National Institute for Clinical Excellence (NICE) (2006) and Grades of Recommendations, Assessment, Development and Evaluation (GRADE) approach (Higgins & Green, 2009) criteria. Data abstraction was managed using an electronic spreadsheet as a variation of a data abstraction form. Components such as study design, validity of instruments employed and sample size and selection were evaluated for each study. Publications selected for review represent those most applicable to the study and which illuminate the salient features of case management in relation to the residential aged care sector.

### **3.4 Review of Case Management Outcomes**

As outlined in Section 3.2, case management has endured a stilted inception, and continues to be fraught with challenges related to quantifying the benefits and / or weaknesses, due to the diversity of implementation with different health

populations. The following narrative explores the published research on case management. The search strategy outlined above resulted in 44 publications being assessed as having medium to high quality research methods and study outcomes (see Table 3.1; studies listed in category groupings and sub grouped chronologically). Empty cells in the Table indicate that no information / data was evident in the study. A synthesis of publications listed in Table 3.1 is intended as a platform to which a critical review of themes, study rigor and trends for indentifying outcomes across these studies is presented. The review is limited by the paucity of literature specifically related to this study's aim and the scant, or missing, information reported in the studies reviewed, particularly information about data collection procedures, study interventions and study outcomes. Despite limitations in the studies reported, this synthesis was intended to list the reported strengths and weaknesses of case management. An assessment of the scientific quality of each case management study is presented in Table 3.1.

Table 3.1: Case Management Study Summary

Sector	First Author / Country	Target Population	Target Age Group	Sample (n)	Drop out (%)	Design	Prospective / Retrospective	Pre & Post Tests (Y/N)	Follow-up Period (months)	Study Period
Mental Health	Cutler (1987) U.S.A	Schizophrenia		30		Non Randomised Comparative	P	Y		1982
	Franklin (1987) U.S.A	Mental Illness	18-64	417	18	R.C.T.	P	Y	12	1981-1984
	Borland (1989) U.S.A			72		Time Series Design	P	Y	84	
	Dincin (1990) U.S.A	Homeless		57		Non Randomised Comparative	P	Y	36	
	Rubin (1992)			8		Integrative Review	R			
	Marshall (1995) U.K.			80	14	R.C.T.	P	Y	14	
	Holloway (1998) U.K.	'Hard to treat'	18-64	70	14	R.C.T.	P	Y	18	
	Marshall (1998)	Mental Illness	18-64			Systematic Review	R			1966-1995
	Chan (2000) Hong Kong	Schizophrenia	18-64	62		R.C.T.	P	Y	11	
	Ziguras (2000)			44		Meta-Analysis	R			1980-1998
	Huber (2003) U.S.A			598		Repeated Measure	P	Y	12	1996-1997
	Oshima (2004) Japan	Mental Illness	18-64	295		Exploratory	P	Y	8	1997
	Bjorkman (2007) Sweden	Mental Illness		176	48	Time Series Design	P	Y	72	
	Smith (2007)			60		Systematic Review	R			1995-2005
	Community	Lichtenberg (2008) Israel	Discharged	18-64	217		Semi Randomised Trial	P	Y	12
Zimmer (1990) U.S.A		Chronic Illness	65+	94		R.C.T.	P	Y	24	1983-1985
Fitzgerald (1994) U.S.A		Discharged	45+	668		R.C.T.	P	N	12	
Bernabei (1998) Italy				200	13	R.C.T.	P	Y	12	1995-1996
Ferguson (1998)				9		Systematic Review	R			
Gagnon (1999) Canada		Discharged	70+	427		R.C.T.	P	Y	10	1996
Browne (2001) U.S.A			65+	205	42	Mixed Method	R	Y	6	1995-1996
Elkan (2001)			65+	15		Systematic Review and Meta-Analysis	R			1966-1997
Howgego (2003)				86		Meta-Analysis	R			1986-2001
Lim (2003) Aust.		Chronic Illness	65+	598		R.C.T.	P	Y	6	1988-1989

Note: \* R.C.T.; Randomised controlled trial  
Where information was not reported in the publication, a blank was left



Table 3.1: Case Management Study Summary (2 of 2 pages)

Sector	First Author / Country	Target Population	Target Age Group	Sample (n)	Drop out (%)	Design	Prospective / Retrospective	Pre & Post Tests (Y/N)	Follow-up Period (months)	Study Period
Community cont.	Leung (2004) Hong Kong	Chronic Illness	65+	260	9	R.C.T.	P	Y	6	2000
	Singh (2005)	Chronic Illness		560		Meta-Analysis	R			2004-2005
	Yau (2005) U.S.A	Chronic Illness	65+	45		Mixed Method	P	Y	12	2001-2002
	Schraeder (2008) U.S.A	Chronic Illness	65+	677		Non Randomised Comparative	P	Y	36	
	Sadowski (2009) U.S.A	Chronic Illness	18-64	405	0	R.C.T.	P	Y	48	2003-2007
	Rosa (2009)	Prenatal		109		Pre and Post Test	P	Y		2001-2003
Acute Care	Aliotta (1995) U.S.A	Chronic Illness	65+	240		Multi-Method Evaluation	R	Y	3	
	Spooner (1997) U.S.A	Chronic Illness		37		Multi-Method Evaluation	R	N	3	1995-1996
	Kim (2005)			12		Meta-Analysis	R			1966-2003
	White (2005) U.S.A			2674		Non Randomised Comparative	R	Y		1994-2000
	Terra (2007)					Systematic Review	R			
	Tosun (2006) Turkey	Chronic Illness		73		Mixed Method	P	Y		2001-2002
Unspecified or Other	Blegen (1995) U.S.A	C-Section (Midwifery)		381	6	Mixed Method	P	Y	1	1992-1993
	Bond (1988) U.S.A			167		R.C.T.	P	N		
	Bush (1990) U.S.A					R.C.T.	P	Y		
	Rife (1991) U.S.A					Pre and Post Test	P	Y		
	Fisher (1988) U.S.A					Cross Sectional	P	N		
	Goering (1988) U.S.A			82		Quasi-Experiment	P	N		
	Hutt (2004)		65+	19		Systematic Review	R	Y		1996-2004

Note: \* R.C.T.; Randomised controlled trial  
Where information was not reported in the publication, a blank was left

### 3.4.1 Quality Assessment of Selected Studies

Selected studies were sourced and assessed against the National Institute for Health and Clinical Excellence (NICE) (2006) guidelines and Grades of Recommendations, Assessment, Development and Evaluation (GRADE) (Higgins & Green, 2009), to establish strength of the outcomes reported (see Table 3.2; 3.3; B.1-B.3). The NICE guidelines are widely used to assess the quality of study methodology and evidence reported, including in a number of recent systematic reviews in credible peer-reviewed journals (Brettell, Hill, & Jenkins, 2008; Chenoweth, Jeon, Merlyn, & Brodaty, 2010b). For instance, RCTs can be categorised according to three levels of rating: 1++ for RCT with very low levels of bias; 1+ for RCT with low level of bias and 1- for RCT with high risk of bias. The NICE also provides guidelines for assessing the quality of non-empirical studies as noted in the selection criteria in Table 3.2.

*Table 3.2: Classification for Evidence and Interpretation of Research*

<b>Level of Evidence</b>	<b>Type of Evidence</b> <i>(National Institute for Health and Clinical Excellence, 2006)</i>
1++	High-quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1+	Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1-	Meta-analyses, systematic reviews of RCTs, or RCTs with high risk of bias
2++	High-quality systematic reviews of case-control or cohort studies. High-quality case-control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2+	Well-conducted case-control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2-	Case-control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal
3	Non-analytic studies (for example, case reports, case series)
4	Expert opinion, formal consensus

The Grades of Recommendations, Assessment, Development and Evaluation (GRADE) Working Group identified a system for grading the quality of evidence for each individual study outcome (Higgins & Green, 2009) (see Table 3.3 and Appendix B).

*Table 3.3: GRADE Approach; Underlying Methodology*

Quality Rating	Underlying Methodology
High	Randomised trials; or double-upgraded observational studies
Moderate	Downgraded randomised trials; or upgraded observational studies
Low	Double downgraded randomised trials; or observational studies
Very Low	Triple downgraded randomised trials; or downgraded observational studies; or case studies

Of the 44 studies presented, the 13 review papers of previous studies (integrative reviews, meta-analysis and systematic reviews) were excluded from a GRADE assessment as per guidelines (Higgins & Green, 2009).

Table 3.4 uses the GRADE approach criteria as identified in Table 3.3 and Appendix B, to provide a clear understanding of the grading and how the quality of evidence criteria was established for each. Table 3.4 has been ordered against the NICE grading and the GRADE Quality of body of evidence outcome.

Table 3.4: Case Management Study Quality Review

First Author	Design	NICE (2006)	Factors that may decrease the quality level of body of evidence					Factors that may increase quality			Risk of Bias			Quality of body of evidence	Comment
			Implementation limitation	Indirectness of evidence	Inconsistency of results	Unexplained heterogeneity or inconsistency of results	Imprecision of results	High probability of publication bias	Large magnitude of effect	Plausible confounding effects	Dose response gradient	Across study	Interpretation		
Franklin (1987)	R.C.T.	1++								L	U	U	Nil	High	
Bush (1990)	R.C.T.	1++								L	L	U	Nil	High	
Zimmer (1990)	R.C.T.	1++								L	U	U	Nil	High	
Holloway (1998)	R.C.T.	1++								U	U	U	Nil	High	
Gagnon (1999)	R.C.T.	1++								U	L	U	Nil	High	
Huber (2003)	Clinical Trial	1++								L	L	U	Nil	High	
Lim (2003)	R.C.T.	1++								L	U	L	Nil	High	
Leung (2004)	R.C.T.	1++	↓							U	L	L	Nil	High	
Sadowski (2009)	R.C.T.	1++								U	L	L	Nil	High	
Bond (1988)	R.C.T.	1++	↓				↓			H	U	U	↓(1)	Moderate	Weakness in data
Fitzgerald (1994)	R.C.T.	1++	↓							U	L	U	↓(1)	Moderate	
Bernabei (1998)	R.C.T.	1++								H	U	U	↓(1)	Moderate	
Chan (2000)	R.C.T.	1++	↓							U	U	U	↓(1)	Moderate	

Note: \* R.C.T.; Randomised controlled trial  
 ↓ indicates a downgrading issue  
 ↑ indicates an upgrading issue

H in relation to high bias categorisation  
 U in relation to unclear bias categorisation  
 L in relation to low bias categorisation  
 Example: ↓ (2) Downgrade by 2 according to assessed bias (Higgins & Green, 2009)

Table 3.4: Case Management Study Quality Review (2 of 4 pages)

First Author	Design	NICE (2006)	Factors that may decrease the quality level of body of evidence				Factors that may increase quality			Risk of Bias			Quality of body of evidence	Comment	
			Implementation limitation	Indirectness of evidence	Inconsistency of results	Unexplained heterogeneity or inconsistency of results	Imprecision of results	High probability of publication bias	Large magnitude of effect	Plausible confounding effects	Dose response gradient	Across study			Interpretation
Bjorkman (2007)	Time Series Design	1++	↓							U	U	U	Nil	Low	6 year study
Schraeder (2008)	Non Random. Comp.	1++	↓							U	U	U	Nil	Low	
Marshall (1998)	Systematic Review	1++													GRADE is N/A
Marshall (1995)	R.C.T.	1+	↓							U	U	U	↓(1)	Moderate	Lacks detail
Lichtenberg (2008)	Semi Randomised Trial	2++								H	U	U	↓(1)	Low	
Ferguson (1998)	Systematic Review	2++													GRADE is N/A
Ziguras (2000)	Meta-Analysis	2++													GRADE is N/A
Elkan (2001)	SR & Meta-Analysis	2++													GRADE is N/A
Howgego (2003)	Meta-Analysis	2++													GRADE is N/A
Hutt (2004)	Systematic Review	2++													GRADE is N/A
Kim (2005)	Meta-Analysis	2++													GRADE is N/A
Singh (2005)	Meta-Analysis	2++													GRADE is N/A

Note: \* R.C.T.; Randomised controlled trial  
 ↓ indicates a downgrading issue  
 † indicates an upgrading issue

H in relation to high bias categorisation  
 U in relation to unclear bias categorisation  
 L in relation to low bias categorisation  
 Example: ↓ (2) Downgrade by 2 according to assessed bias (Higgins & Green, 2009)

Table 3.4: Case Management Study Quality Review (3 of 4 pages)

First Author	Design	NICE (2006)	Factors that may decrease the quality level of body of evidence				Factors that may increase quality			Risk of Bias			Quality of body of evidence	Comment
			Implementation limitation	Indirectness of evidence Design & results	Unexplained heterogeneity or inconsistency of results	Imprecision of results	High probability of publication bias	Large magnitude of effect	Plausible confounding effects	Dose response gradient	Across study	Interpretation		
Smith (2007)	Systematic Review	2++												GRADE is N/A
Terra (2007)	Systematic Review	2++												GRADE is N/A
Oeseburg (2009)	Systematic Review	2++												GRADE is N/A
Blegen (1995)	Mixed Method	2+								U	U	U	↑(2)	Moderate Good design
Fisher (1988)	Cross Sectional	2+								U	L	U	Nil	Moderate Great sample data
Rife (1991)	Pre and Post Test	2+			↓					U	U	U	Nil	Low Well reported data
Aliotta (1995)	Multi-Method Evaluation	2+	↓	↓		↓				H	H	H	↓(2)	Very Low Case evaluative study
Browne (2001)	Mixed Method	2+	↓	↓						U	U	H	↓(1)	Very low
Oshima (2004)	Exploratory	2+	↓	↓	↓					H	H	U	↓(2)	Very low
Yau (2005)	Mixed Method	2+	↓							H	H	U	↓(1)	Very low Good thematic synthesis

Note: \* R.C.T; Randomised controlled trial  
 ↓ indicates a downgrading issue  
 ↑ indicates an upgrading issue

H in relation to high bias categorisation  
 U in relation to unclear bias categorisation  
 L in relation to low bias categorisation  
 Example: ↓(2) Downgrade by 2 according to assessed bias (Higgins & Green, 2009)

Table 3.4: Case Management Study Quality Review (4 of 4 pages)

First Author	Design	NICE (2006)	Factors that may decrease the quality level of body of evidence					Factors that may increase quality			Risk of Bias			Quality of body of evidence	Comment
			Implementation limitation	Indirectness of evidence Design & results	Unexplained heterogeneity or inconsistency of results	Imprecision of results	High probability of publication bias	Large magnitude of effect	Plausible confounding effects	Dose response gradient	Across study	Interpretation	Considerations		
Tosun (2006)	Mixed Method	2+	↓							H	H	H	↓(2)	Very low	GRADE is N/A GRADE is N/A Very detailed
Rubin (1992)	Integrative Review	2+													
Goering (1988)	Quasi-Experiment	2+													
Borland (1989)	Time Series Design	2-					↑			L	L	L	↑(2)	Moderate	
White (2005)	Non Random. Comp.	2-								U	U	U	Nil	Low	
Cutler (1987)	Non Random. Comp.	2-	↓	↓						H	H	H	↓(1)	Very Low	
Dincin (1990)	Non Random. Comp.	2-	↓	↓	↓					H	H	H	↓(1)	Very Low	
Spooner (1997)	Multi-Method Evaluation	2-	↓	↓						H	H	H	↓(2)	Very low	
Rosa (2009)	Pre and Post Test	2-	↓							H	H	U	↓(1)	Very low	

Note: \* R.C.T; Randomised controlled trial  
↓ indicates a downgrading issue  
↑ indicates an upgrading issue

H in relation to high bias categorisation  
U in relation to unclear bias categorisation  
L in relation to low bias categorisation  
Example: ↓ (2) Downgrade by 2 according to assessed bias (Higgins & Green, 2009)

### 3.4.2 Review of Study Populations

Twenty of the 44 studies were conducted in the USA (Table 3.1), with only one Australian Randomised Controlled Trial (RCT) identified (Lim, et al., 2003). The studies reviewed were published over more than two-decade period (1987-2009). While Table 3.1 is a relatively short list of case management outcome related studies, these are representative of high quality methods presented in the literature reviewed, including seven systematic reviews and 14 RCTs. Overall, these studies included a sample of 102,238 participants (range: 8-2674) who participated in case management programs in the period 1981-2007. Studies reported an average follow-up period of 20 months (range 1-84 months), with an average documented retention rate of 18%. The majority of studies were prospective (64%), with almost two thirds of the studies reported using pre and post-test design (n=27). One third of the studies reported on case management within a mental health sector (n=14), and a further third reported on community sector programs (n=13). One quarter (n=11) studied a population over the age of 65 years and one in five (n=9) considered a population experiencing chronic illness.

Studies that provided a comprehensive population description were Franklin et al. (1987), Zimmer et al. (1990), Fitzgerald et al. (1994), Gagnon et al. (1999), Fisher et al. (1988) and Marshall et al. (1995). These studies provided insightful approaches to elucidating the populations, including comprehensive participant synthesis of backgrounds (Fisher, et al., 1988; Fitzgerald, et al., 1994; Franklin, et al., 1987) and screening processes (Borland, et al., 1989). While some presented comprehensive backgrounds to the study population, this was not evident throughout all the studies.

A study by Dincin (1990) with a small study sample described the study population only as “heavy users”. There was no selection criteria identified to what was meant by “heavy user”, nor sample selection bias discussed (Dincin, 1990). Similarly, Oshima et al. (2004, p. 527) was unable to define the selection criteria of those with “severe mental illness” and having the “greatest care need”. Selection criteria was unclear in a few of the studies, namely; Marshall et al. (1995) where the diagnosis was made on a reported diagnosis, rather than a clinical review, and Sadowski et al. (2009) and Bond et al. (1988) utilised self reported diagnosis only. Similar themes occurred when some studies lacked



detail in describing the participant characteristics, as indicated in both Spooner and Yockery's (1997) and Browne and Braun (2001) study's. The lack of study population and sample detail in above mentioned studies limits their utility to adequately describe and evaluate the benefits of a case management model.

#### 3.4.3 Review of Design and Implementation

A few of the studies presented in Table 3.1, and further in Table 3.4 revealed little rigor in their design and implementation. For example, Cutler et al. (1987) intended to evaluate an individual's support networks, however the design compromised the capability of the study to achieve this based on a number of factors including; convenience sampling procedure, very small cohort, scant detail about the model and lack of notation about these limitations in the manuscript. Randomisation processes were frequently compromised due to a lack of detail especially in relation to minimising bias (Fitzgerald, et al., 1994; Huber, et al., 2003; Leung, Liu, et al., 2004; Tosun & Akbayrak, 2006). Selection bias was conversely well described by Holloway and Carson (1998) and Marshall et al. (1995) who used sealed envelopes, as opposed to Chan et al. (2000) who reported using a coin toss.

An issue that has greatly compromised the value of reviewing and developing case management models, has been the lack of specific detail of interventions utilised in the case management model. Examples of this are evident in the description of specific case management interventions, timeframes of implementation (Fisher, et al., 1988; Fitzgerald, et al., 1994), and lack of pre and post data to evaluate the intervention outcomes (Fitzgerald, et al., 1994; Rife, et al., 1991; Spooner & Yockey, 1997). A study by Franklin et al. (1987) that sought to develop a model of care, utilised a randomisation strategy with low risk of bias but with a model of care not compatible with the study objectives, revealed by the dissonance between the literature, the data and the model. Spooner and Yockery (1997) based many outcomes on incidental reporting of the situation prior to the study commencing, rather than on comparative data. This was further compromised by "additional factors occurring during the time of the study" that they hypothesised would possibly influence outcomes, however no other information was provided (Spooner & Yockey, 1997, p. 263). Limitations within a number of the assessed studies (Fisher, et al., 1988; Fitzgerald, et al., 1994; Rife,

et al., 1991; Spooner & Yockey, 1997) were due to an absence of information that might assist with determining the impact of the intervention.

Further challenges existed within many studies due to a lack of specific detail within the proposed or studied case management models. Critical variables such as experiences, skill mix and time spent with the client would have been good indicators to support the significant findings in the following studies; Marshall et al. (1995), Chan et al. (2000) and Bernabei et al. (1998). Juxtaposed against these gaps in information was an exemplar study by Borland et al. (1989) who provided comprehensive detail about the role of the employed book keeper, availability of short term accommodation, structure of daily de-brief meetings and out of hours coverage structure. While specificity of the model adds credibility to the study, so too does the transparency of issues, as evident in an example by Browne and Braun (2001), where they relied on incomplete data and experienced significant cross-cultural barriers. However, the strength of the study was in the transparency of methodological issues evident and the themes derived from study findings.

#### 3.4.4 Review Bias

Non-identification of bias in methodology and outcomes was found to be problematic when reviewing many of the case management intervention studies. Cutler et al. (1987) did not identify bias in their sample frame, recruiting a small number of participants who self-selected the program of choice. Others such as Higgins & Green, (2009) did not report inter-rater reliability of measurement and auditing of consistency between interviewers. Spooner and Yockey (1997) and Rosa (2009) did not report researcher bias, nor information about non participants, participant selection procedures, or evaluation bias. A small scale longitudinal study by Bjorkman and Hansson (2007) attempted to minimise error in data collection by having a sole researcher conduct pre-during and post implementation interview, however the study did not report potential bias, nor implement a periodic monitoring of how interviews were being conducted and recorded. Franklin et al. (1987) reported low risk bias related to study funding and while Aliotta (1995) provided a good descriptive evaluation of a program, including detailed explanation of interventions and indicators of improvement, there were few mentions of study limitations or strategies to minimise bias.

Some authors such as Bernabei et al. (1998) clearly identified bias related to participant knowledge of their allocation of group, and by Tosun and Akbaryrak (2006) who reported the case manager, also a member of the project team, had prior knowledge of study participant allocation. Sampling bias was identified by Oshima et al. (2004) concerning unblended, non-random participant allocation, and the short time frame for follow-up evaluation. Bias occurring through lack of participant engagement in the program was reported by Huber et al (2003), while Dincin (1990) reported only positive findings.

#### 3.4.5 Review Instruments

Instrument selection is a useful indicator when assessing the validity of data and findings presented across the studies. While the majority of studies did not report the time participants took to complete the instruments, the range was five minutes to two hours for those reported. The size of the instruments varied, from a one-item to a 16-item questionnaire.

Further analysis of the 27 studies presented in Table 3.5 was undertaken to assess the validity of the instruments used in the studies. Determination for validity was assessed by frequency of prior instrument usage internationally and assessment of the questionnaire content by investigators. Of the 77 studies that reported usage of instruments, 11 were developed by the researchers themselves (Franklin, et al., 1987; Oshima, et al., 2004; Schraeder, et al., 2008; Spooner & Yockey, 1997; White, et al., 2005), with the remaining 66 using previously published, validated instruments. There were only a few studies that utilised the same instruments: Lancashire Quality of Life Profile was used by Bjorkman and Hansson (2007) and Holloway and Carson (1998), who used an earlier used a translated version; and the Older Americans Resources and Services (OARS) was used by Fitzgerald et al. (1994) and Gagnon (1999), and recommended to be a valid and reliable instrument in other studies (Burholt et al., 2007; Fillenbaum & Smyer, 1981; George & Fillenbaum, 1985; Pfeiffer, 1978). Pfeiffer's (1978) Short Portable Mental Status Examination was used in two studies (Bernabei, et al., 1998; Fitzgerald, et al., 1994), while 'satisfaction' was an outcome measured in 18 of the instruments and nine focused on 'quality of life'. As indicated in Table 3.5, only nine of the studies reported the validity and reliability test results of the measures used.

Table 3.5: Case Management Study Summary of Instruments

First Author	Instrument Name	Developed / Researched By	Reliability and Validity	What it Measured	No. of Items	Time (mins)
Cutler (1987)	Symptom Checklist SCL 90-R	(Derogatis, Lipman, & Covi, 1973)	NS	Behaviours	9	NS
	Affect Scale	(Bradburn, 1963)	Crochbach alpha- 0.59-0.73	Feelings	10	10
	Katz Social Performance Scale	(Katz & Lyerlie, 1963)	NS	Socialisation	NS	NS
	Social Desirability Scale	(Crowne & Marlowe, 1960)	NS	Socialisation	NS	NS
Franklin (1987)	Performance of ADLs	Author	NS	Performance of ADLs	6	NS
	Affect Scale	(Bradburn, 1963)	Crochbach alpha- 0.59-0.73	Feelings	10	10
	Self Esteem	(Rosenberg, 1965)	NS	Self Esteem	5	NS
Bond (1988)	Quality of Life (Modified)	NS	NS	Quality of Life	32	NS
Dincin (1990)	NS	Author	NS	Admissions, Length of Stay	NS	NS
Zimmer (1990)	New York State DMS-1	(Foley & Schneider, 1980)	NS	ADLs, Nursing Care Needs	47	NS
	Carer Satisfaction	(McCusker, 1984)	NS	Satisfaction	NS	NS
Rife (1991)	Quality of Life	(Lehman, 1988)	NS	Quality of Life	NS	NS
Fitzgerald (1994)	Older Americans Resources and Services (OARS)	(Burholt, et al., 2007; Fillenbaum & Smyer, 1981; George & Fillenbaum, 1985; Pfeffier, 1978)	Comparative fit; validation 0.95; Test-Retest Correlation 0.71-0.89	Functioning Capacity	15	NS
	Short Portable Mental Status Examination	(Pfeiffer, 1975)	NS	Intellectual Impairment	10	NS
	Interpersonal Support Evaluation List	(Cohen, Merelsterin, Kamarack, & Hoberman, 1985)	NS	Interpersonal Supports	40	NS
Blegen (1995)	Consumer Satisfaction Survey (modified)	(Davies & Ware, 1991)	Crochbach alpha- 0.95	Satisfaction	NS	NS
	Quality of Care (modified)	(Leff, 1990)	Reliability = 0.79	Maternity	10	NS
	Physical Assessment (modified)	(Wolfer & Davis, 1970)	Reliability = 0.88	Recovery	9	NS

NB: NS = Not Specified (also indicating not located or reported on)

Table 3.5: Case Management Study Summary of Instruments (2 of 5 pages)

First Author	Instrument Name	Developed / Researched By	Reliability and Validity	What it Measured	No. of Items	Time (mins)
Marshall (1995)	REHAB Behaviour Rating Scale	(Baker & Hall, 1988)	Spearman's coefficient range 0.61-0.92	Behaviour Frequency	23	NS
	MRC Needs for Care Schedule	(Brewin, Wing, Mangen, Brugha, & MacCarthy, 1987)	NS	Needs of Mentally ill	21	NS
	Quality of Life Interview	(Lehman, 1983)	NS	Quality of Life	NS	NS
	Social Integration Questionnaire	(Segal & Aviram, 1977)	NS	Socialisation	NS	NS
	Manchester Scale	(Krawiecka, Goldberg, & Vaughan, 1977)	NS		NS	NS
Spooner (1997)	Patient Outcomes and Satisfaction	Author	NS	Outcomes and Satisfaction	11	NS
	Staff Survey	Author	NS	Outcomes and Satisfaction	7	NS
	Ancillary Survey	Author	NS	Outcomes and Satisfaction	5	NS
Bernabei (1998)	British Columbia Long Term Carer Programme Assessment	(Hollander & Pallan, 1995)	NS		NS	NS
	Short Portable Mental Status Questionnaire	(Pfeiffer, 1975)	NS	Intellectual Impairment	10	NS
	Geriatric Depression Scale	(Yesavage et al., 1982)	NS	Depression	NS	NS
Gagnon (1999)	Medical Study Short Form (MOS) (SF-36®)	(McHorney, Ware, & Raczek, 1993; McHorney, Ware, Rogers, Raczek, & Lu, 1992)	Reliability Coefficient >0.76	Quality of Life	8	NS
	Client Satisfaction Questionnaire (CSQ-8)	(Attkisson & Zwick, 1982)	Consistency Reliability >0.86	Satisfaction	NS	NS
	Older Americans Resources and Services (OARS)	(Burholt, et al., 2007; Fillenbaum & Smyer, 1981; George & Fillenbaum, 1985; Pfeffier, 1978)	Comparative fit; validation 0.95; Test-Retest Correlation 0.71-0.89	Functioning Capacity	15	NS

NB: NS = Not Specified (also indicating not located or reported on)

Table 3.5: Case Management Study Summary of Instruments (3 of 5 pages)

First Author	Instrument Name	Developed / Researched By	Reliability and Validity	What it Measured	No. of Items	Time (mins)
Holloway (1998)	Comprehensive Psychopathological Rating	(Asberg, Perris, & Schalling, 1978)	NS	Behaviour	NS	NS
	Schedule for the Assessment of Negative Symptoms	(Andreasen, 1982)	NS	Behaviour	NS	NS
	Beck Depression Inventory	(Beck, Rush, & Shaw, 1979)	NS	Depression	NS	NS
	Disability Assessment Schedule	(World Health Organization, 1988)	NS	Disability	NS	NS
	Lancashire Quality of Life Profile,	(Oliver, 1991)	NS	Quality of Life and Satisfaction	NS	NS
	Satisfaction Interview	(Cullen, Waite, & Oliver, 1997)	Cronbach Alpha 0.89	Satisfaction	22	NS
	Present State Examination	(Wing, Cooper, & Sartorius, 1974)	NS	Mental Status	NS	NS
	Social Behaviour Schedule	(Wykes & Sturt, 1986)	Reasonable reliability tested for all aspects (inc. inter rater, inter item and test rest)	Behaviour	21	NS
Chan (2000)	Brief Psychiatric Rating Scale	(Overall & Gorham, 1962)	Inter-rater reliability >0.67	Assess Mental Condition	18	NS
	Specific Level of Functioning Scale	(Schneider & Struening, 1983)	Internal Consistency Reliability >0.68	Social Functioning and ADLs	43	NS
	Client Satisfaction Instrument	(Chan & Yu, 1993; Risser, 1975)	Content Validity Index 0.89; Test-Retest Reliability =0.70	Client Satisfaction	26	NS
Browne (2001)	No Title	Author	NS	Caregiver Support	7	120
Howgego (2003)	Working Alliance Inventory	(Horvath & Greenberg, 1989)	NS	Case Management	NS	NS
Huber (2003)	Addiction Severity Index	(McLellan et al., 1992; McLellan, Luborsky, O'Brien, Barr, & Evans, 1984)	Test-retest reliability coefficient > 0.83	Addiction	161	NS

NB: NS = Not Specified (also indicating not located or reported on)

Table 3.5: Case Management Study Summary of Instruments (4 of 5 pages)

First Author	Instrument Name	Developed / Researched By	Reliability and Validity	What it Measured	No. of Items	Time (mins)
Lim (2003)	Assessment of Quality of Life	(Hawthorne, Richardson, & Osborne, 1999)	NS	Quality of Life	NS	NS
	Caregiver Strain Index (Modified)	(Robinson, 1983; Thornton & Travis, 2003)	Test –Retest Reliability = 0.88; Internal Reliability $\alpha$ = 0.90	Caregiver Strain	NS	NS
Leung (2004)	Minimum Data Set - Home Care (MDS-HC) (Hong Kong Version)	(Chi, Lam, & Lam, 1997; Kwan, Chi, Lam, & Chou, 2000)	NS	Care Needs	NS	NS
Oshima (2004)	Objective Quality of Life Scale	(McGrew, Bond, Dietzen, & Salyers, 1994; Oshima, Cho, Anzai, & Takahashi, 2000)	NS	Quality of Life	12	NS
	Number of Personal Care Services	Author	NS	Personal Care Services	NS	NS
	Life Satisfaction Scale	Author	NS	Life Satisfaction	1	NS
	Service Satisfaction Scale	Author	NS	Service Satisfaction	10	NS
	Fidelity Scale	(McGrew, et al., 1994)	NS	Case Management	NS	NS
	Needs for Personal Care Scale	(Oshima, et al., 2000)	NS	Personal Care	26	NS
White (2005)	Hospital Survey	Author	NS	Length of Stay, Admission and Costing	NS	NS
Tosun (2006)	Patient Satisfaction Evaluation Survey	(Turkmen, 1997)	Reliability $\alpha$ coefficient = 0.83	Patient Satisfaction	NS	NS
	Nurse Job Satisfaction Evaluation Survey	(Aksayan, 1990)	Reliability $\alpha$ coefficient = 0.92	Nurse Job Satisfaction	NS	NS

NB: NS = Not Specified (also indicating not located or reported on)

Table 3.5: Case Management Study Summary of Instruments (5 of 5 pages)

First Author	Instrument Name	Developed / Researched By	Reliability and Validity	What it Measured	No. of Items	Time (mins)
Bjorkman (2007)	Lancashire Quality of Life Profile (Translated)	(Oliver, Huxley, Priebe, & Kaiser, 1997)	Reliability and Validity Reported as 'Good'	Quality of Life, Satisfaction	NS	NS
	Manchester Short Assessment of Quality of Life (Translated)	(Priebe, Huxley, Knight, & Evans, 1999)	Concurrent Validity Reported as 'Satisfactory'	Quality of Life, Satisfaction	16	NS
	Interview Schedule for Social Interaction	(Henderson, Duncan-Jones, Byrne, & Scott, 1980)	Reliability and Validity Reported as 'Satisfactory'	Social Integration	30	NS
	Strauss Carpenter Scale	(Strauss & Carpenter, 1972, 1974)	NS	Psychosocial Functioning	NS	NS
	Camberwell Assessment of Needs interview (Translated)	(Phelan et al., 1995)	Reliability and Validity Reported as 'Satisfactory'	Care Needs	22	NS
Lichtenberg (2008)	Swedish institute SPRI	(Hansson & Hoglund, 1995)	Reliability and Validity Reported as 'Satisfactory'	Client Satisfaction	11	NS
	Hopkins symptom check list-90 brief	(Derogatis, et al., 1973)	NS	Behaviours	9	NS
Schraeder (2008)	Questionnaire based on interview used by Israeli Social Services	(Strousberg, Nahon, Bar, & Morgenstein, 2004)	NS	Emotional Health, Satisfaction & Psychosocial Functioning and Support	NS	NS
Rosa (2009)	50-item Health Questionnaire	Author	NS	Health Plan	50	NS
Sadowski (2009)	North Carolina Family Assessment Scale (Modified)	(Reed-Aschcraft, Kirk, & Fraser, 2001)	Reliability $\alpha$ coefficient = 0.70	Families Resilience Capacity	42	NS
	AIDS Clinical Trials Group 21-Item Short Form instrument	(AIDS Clinical Trials Group (ACTG) Outcome Committee, 1999; Carretero, Burgess, Soler, Soler, & Catalan, 1996)	NS	Quality of Life	21	5

NB: NS = Not Specified (also indicating not located or reported on)



#### 3.4.6 Review of Case Management Model Interventions

The case management interventions listed in Table 3.6 represent a series of broad themes reported in the case management models of care literature; many of these interventions are discussed in Section 3.6. The 'Glossary' provides definitions of concepts relevant to case management listed in Table 3.6: caseload, critical pathways, discharge planning and interprofessional teams. The use of inter-professional teams was reported separately if the study documented that case conferences occurred. Placement of clients in employment or accommodation was also noted. Crisis intervention was referred to where the client was able to access advice or support in a crisis or emergency. When staff were available out of normal working hours this was viewed as an important intervention. Where counselling was identified as an important role of Case Managers, this was reported. In a few studies, the Case Manager(s) were involved in managing clients' funds or paying for services, and frequently Case Managers escorted clients to appointments, particularly for follow-ups and filling medication prescriptions. This was supported by a few studies to ensure medication was administered, usually on a daily basis. Finally, most of the studies reported undertaking home visits as a pivotal intervention within the model being evaluated.

Table 3.6: Case Management Models: Interventions

First Author	Case Manager			Published Case Management Interventions											
	Registered Nurse	Social Worker	Coordinator Allied Health Role	Caseload	Discharge Planning Critical Pathways	Interprofessional Team	Case Conferencing	Crisis Intervention	Employment	Out of Hr. Coverage	Counselling	Managing Finances	Escorting to Appoint. Monitoring	Home Visits	Accommodation
Aliotta (1995)															
Bernabei (1998)	Y	Y				Y	Y	Y						Y	
Biorkman (2007)										Y					
Blegen (1995)	Y				Y	Y			Y						Y
Bond (1988)				8											
Borland (1989)	Y			9		Y		Y	Y				Y	Y	Y
Browne (2001)															
Bush (1990)				12											
Chan (2000)	Y					Y	Y				Y			Y	
Cutler (1987)															
Dincin (1990)				16	Y						Y	Y		Y	Y
Elkan (2001)														Y	
Ferguson (1998)															
Fisher (1988)															
Fitzgerald (1994)	Y					Y		Y		N				Y	
Franklin (1987)	Y	Y	Y	30											
Gagnon (1999)	Y			46	Y	Y	Y	Y		N				Y	
Goering (1988)				15											
Holloway (1998)	Y		N	20		Y				Y				Y	
Howaego (2003)				20				Y							
Huber (2003)								Y							
Hutt (2004)															
Kim (2005)	Y														
Leung (2004)	Y	Y					Y	Y			Y			Y	
Lichtenberg (2008)		Y	N	30			Y	Y							
Lim (2003)	Y		Y			Y	Y	Y	Y					Y	
Marshall (1995)	Y	Y	Y	10					Y	Y	Y			Y	
Marshall (1998)															
Oeseburg (2009)															
Oshima (2004)	Y		Y				Y				Y			Y	
Rife (1991)				30											
Rosa (2009)	Y		Y	Y				Y			Y			Y	
Rubin (1992)															
Sadowski (2009)		Y	N	20	Y									Y	
Schraeder (2008)	Y	Y	Y				Y	Y						Y	
Singh (2005)															
Smith (2007)															
Spooner (1997)	Y				Y	Y	Y								
Terra (2007)															
Tosun (2006)				5	Y	Y					Y		Y		
White (2005)															
Yau (2005)	Y		Y	11		Y				N					
Ziouras (2000)	Y														
Zimmer (1990)	Y	Y	Y	85		Y				Y	Y	Y		Y	

Note:

Y = Yes

N= No

Blank = Not Stated

Reviewing case management models has previously been reported as complex and difficult, because of the heterogeneity and frequent hybridisation of the model (Hesse, et al., 2009; Oeseburg, et al., 2009; Smith & Newton, 2007; Terra, 2007). The most defining interventions listed in Table 3.6 were associated with the allocation of a Case Manager. Of the 44 studies reviewed, 20 used a health professional as the Case Manager; 90% (n=18) referred to an RN while 12 used allied health professionals (eight with social workers). The average caseload reported was 1:23 (n=16, calculated at the lower range). Where both caseload and inter-professionals were used, Case Managers managed 15 more cases on average (1:38). Table 3.6 highlights five dominant case management interventions: interprofessional teams (n=13), home visits (n=11), case conferencing (n=10), discharge planning (n=7), and counselling (n=7). Case management studies rarely tested against strict control groups; many compared against different models, and most did not detail the specifics of the interventions used.

#### 3.4.7 Review of Outcomes

Achievement of planned case management outcomes are another key issue to review in reported studies. Hospital admissions, length of stay, cost measures, and other planned outcomes are evaluated and presented in Table 3.7. Hospital admissions decreased by 44% (mean; range; 9-83) in 16 studies where admissions were measured (eight with  $p < 0.05$ ). These studies were predominantly RCTs (Bernabei, et al., 1998; Bond, et al., 1988; Bush, et al., 1990; Fitzgerald, et al., 1994; Holloway & Carson, 1998; Leung et al., 2004; Sadowski, et al., 2009; Zimmer, et al., 1990) however there were three literature synthesis papers. Nine of these 16 were assessed as moderate to high quality with the GRADE review system (Table 3.4) (Bernabei, et al., 1998; Bond, et al., 1988; Borland, et al., 1989; Bush, et al., 1990; Fitzgerald, et al., 1994; Holloway & Carson, 1998; Leung, Yau, et al., 2004; Sadowski, et al., 2009; Zimmer, et al., 1990). In contrast, the five studies that reported an increase in admissions (24%), were not statistically significant, with the three RCTs (Franklin, et al., 1987; Gagnon, et al., 1999; Lim, et al., 2003) assessed as being of high quality (Table 3.4). Eight RCTs reported a decrease in hospital admissions (Bernabei, et al., 1998; Bond, et al., 1988; Bush, et al., 1990; Fitzgerald, et al., 1994; Holloway & Carson, 1998; Leung, Yau, et al., 2004; Sadowski, et al., 2009; Zimmer, et al., 1990), with an average decrease of 36%, compared to three RCTs reporting an

increase in hospital admissions. None of these outcomes were statistically significant, despite the studies being assessed as high or moderate quality by NICE and GRADE criteria.

Table 3.7: Case Management Models; Outcomes

First Author	Hospital Admissions (n)	Hospital Admissions (%)	Rehospitalisation	Emergency Dept. visits	Hospital Length of Stay	Hospital Length of Stay (%)	Total Daily Costs	Hospital Costs	Management Costs	Severity of Condition Case	Counselling	Use of Services	Role Performance	Engagement	Contacts	Functional Status	Mortality	Client Satisfaction	Direct care hours	Infection	RACF Admission	Medication Compliance	Symptoms	Quality of Care	Quality of Life
Aliotta (1995)					↓	72	↓							↑				↑						↑	
Bernabei (1998)	↓	29		↓	↓	35	↓	23		↓		X				↑	X								
Bjorkman (2007)	↓	63			↓	63				↓			↑	↑		↑							↓	↑	↑
Blegen (1995)					↓	14	↓	13						↑						↓				↑	
Bond (1988)	↓											X										X			X
Borland (1989)	↓	75											↑												
Browne (2001)																									
Bush (1990)	↓																						↑		
Chan (2000)										↓	↑	↑	↑	↑	↑								↑		
Cutler (1987)													↓	X											
Dincin (1990)	↓	72			↓	69	↓																		↑
Elkan (2001)	X																	↓			↓				
Ferguson (1998)							↓																		
Fisher (1988)										↑															
Fitzgerald (1994)	↓	37	↓	↑	↓	12										↑	↑	X							
Franklin (1987)	↑	39			↑	14	↑	12	↑			↑													X
Gagnon (1999)	↑	20		↑	↑	8								X	↑	X		X							
Goering (1988)	X			↓										↑		↑									

**Note:** X Blank Number; No Change Not Stated Percentage; ↑ Increased; ↓ Decreased; ↑ Statistically Significant Increase (p ≤0.05); ↓ Statistically Significant Decrease (p ≤0.05)

Table 3.7: Case Management Models; Outcomes (2 of 3 pages)

First Author	Hospital Admissions (n)	Hospital Admissions (%)	Rehospitalisation	Emergency Dept. visits	Hospital Length of Stay	Hospital Length of Stay (%)	Total Daily Costs	Costs (%)	Hospital Costs	Management Costs	Severity of Condition Case	Counselling	Use of Services	Role Performance	Engagement	Contacts	Functional Status	Client Satisfaction	Direct care hours	RACF Admission	Infection	Medication Compliance	Symptoms	Quality of Care	Quality of Life
Holloway (1998)	↓	27			↑											↑		↑						X	
Howgego (2003)															↑							↑			
Huber (2003)															↑										
Hutt (2004)	↓				↓												↑								
Kim (2005)	↑	6			↓																				
Leung (2004)	↓	37			↓	53	↓	93	↓	↓															
Lichtenberg (2008)	X				↓	22																			
Lim (2003)	↑	5			↓	4	↓	100						↑			↑							↑	
Marshall (1995)					↓	33							↓		X	↑								X	
Marshall (1998)	↑	50													↑										
Oeseburg (2009)							↓							↓											
Oshima (2004)															↑			↑						↑	
Rife (1991)															X			X						↑	
Rosa (2009)														↑	↑										
Rubin (1992)	↓																								
Sadowski (2009)	↓	29		↓	↓	29											↑							↓	
Schraeder (2008)	↓	9	↓	↓			↓	41																	

**Note:** X Blank Number    No Change Not Stated Percentage    ↑ ↑ ↓ ↓    Increased Statistically Significant Increase (p ≤0.05) Decreased Statistically Significant Decrease (p ≤0.05)

Table 3.7: Case Management Models; Outcomes (3 of 3 pages)

First Author	Hospital Admissions (n)	Hospital Admissions (%)	Rehospitalisation	Emergency Dept. visits	Hospital Length of Stay	Hospital Length of Stay (%)	Total Daily Costs	Hospital Costs	Management Costs	Severity of Condition	Counselling	Use of Services	Role Performance	Engagement	Contacts	Functional Status	Mortality	Client Satisfaction	Direct care hours	RACF Admission	Infection	Medication Compliance	Symptoms	Quality of Care	Quality of Life
Singh (2005)							↓											↑					↓	↑	↑
Smith (2007)	X				X						↓			↑											
Spooner (1997)	↓	83					↓	56	↓														↑		
Terra (2007)					↓		↓									↑			↑						↑
Tosun (2006)					X														↑						
White (2005)					X		X																		
Yau (2005)														↑											
Ziguras (2000)	↓				↓						↓		↑	↑				↑							
Zimmer (1990)	↓	22			↓	59	↓	41	↓	↑		↑			↑	X	↓	X	↓				↓		

**Note:** X Blank Number; No Change Not Stated Percentage; ↑ Decreased; ↓ Increased; ↑ (grey) Statistically Significant Increase (p ≤0.05); ↓ (grey) Statistically Significant Decrease (p ≤0.05)

Length of stay in a hospital setting was reduced by 39% in 16 of the studies, with half statistically significant ( $p < 0.05$ , including four RCTs). To provide context to this data, the Australian Institute of Health and Welfare (2008c, p. 362) reported the average length of hospital stay, excluding same day separations, to be 6.2 days in 2005-6. A reported reduction of 39% indicated would therefore suggest a significant decrease from 6.2 days to 3.8 days, based on this data alone.

Thirteen of the 44 studies reported an average 46% decrease in total daily healthcare costs (range: 23-100%, two statistically significant), while one study (Franklin, et al., 1987) reported an increase (not significant) and another reporting no change (White, et al., 2005). Of the four RCTs (Bernabei, et al., 1998; Leung, Liu, et al., 2004; Lim, et al., 2003; Zimmer, et al., 1990) reported a cost benefit for case management, the average reduction was 64%.

There was a reported disparity between case management models as to whether having a team or single Case Manager, best meets clients' needs. While a team approach reduced burnout (Rapp & Goscha, 2004), a single Case Manager offered a single point of contact, increased accountability, improved clarity in role, and produced a more efficient relationship with the client (Abdallah, 2005; Baker & Intagliata, 1984; Burns et al., 2002; Intagliata, 1982; King, Meadows, & Le Bas, 2004; Meldrum & Yellowlees, 2000; Muir-Cochrane, 2001; Rapp & Goscha, 2004; Rubin, 1992). Where caseloads and interprofessional teams were utilised, there was less than half the reduction of admissions (24% reduction; (Holloway & Carson, 1998; Zimmer, et al., 1990). Gagnon et al. (1999) reported a 20% increase in and Lichtenberg et al., (2008) reported no change in hospital admissions, compared to studies which only reported the utilisation of a single Case Manager (59% reduction) (Bond et al., (1988); Borland et al., (1989) (75%); Bush et al., (1990) ( $p < 0.05$ ); Dincin, (1990) (72%:  $p < 0.05$ ); Franklin et al., (1987) (39%); Sadowski et al., (2009) (29%,  $p < 0.05$ )).

Where no caseload was indicated and the study reported only the utilisation of interprofessional teams, there was a 40% reduction overall in hospital admissions (Bernabei et al. (1998) had 29% reduction:  $p < 0.05$ ; Leung et al., (2004) had 37% reduction:  $p < 0.05$ ; Schraeder et al., (2008) had 9% reduction; Spooner and Yockery, (1997) had 83% reduction). There was a reduction in hospital length of



stay of 26% on average (Bernabei et al., (1998) had 35% reduction; Blegen et al., (1995) had 14% reduction,  $p<0.05$ ; Leung et al., (2004) had 53% reduction,  $p<0.05$ ; Lim et al. (2003) had 4% reduction,  $p<0.05$ ) as compared to those acting as single Case Managers who reduced length of stay by almost half (44%) (Dincin, (1990) (69%:  $p<0.05$ ); Marshall et al., (1995) (33%); Sadowski et al., (2009) (29%:  $p<0.05$ )). Effectiveness of interprofessional collaborations in the health system can therefore be questioned, as these data indicated increased benefit when a key person was made accountable for the care and service provision of an individual patient / client.

#### 3.4.8 Review of RCTs Examining Case Management

A synthesis of 14 RCTs examining the effect of case management on client and systems outcomes is presented in Table 3.8, which reports the number of studies conducted, the combined sample population sum, mean and range within each item, and the percentage considered the number of studies as relevant to the 14 RCTs reviewed and reported identified interventions and outcomes. One third of studies examined an adult population (18-64 years) and a further third persons over 65 years. All studies were prospective and included an average follow-up period of 17 months ( $n=12$ ), with 3,505 participants included. Of the six RCTs that reported a sample dropout rate, the mean was 11%, identifying potential retention bias. The dropout rate was predominantly due to a transient homeless and socially unstable population sample. These studies showed a reduction of 30% in hospital admissions ( $n=8$ ), 37% decreased length of stay ( $n=7$ ) and a 64% reduction in hospital costs ( $n=4$ ). Improvement in client outcomes were achieved in all studies reporting on client contact ( $n= 6/6$ ), functional status ( $n=4/14$ ) and utilisation of services ( $n=3/3$ ).

Table 3.8: Synthesis of Case Management RCTs

Item	No. of studies	Sum	Mean	Range	%
<b>Characteristic</b>					
Sample size	14	3505	270	57-668	
<b>Age</b>					
18-64	5				36
65+	4				29
<b>Study Design</b>					
Follow-up Period (months)	12	209	17	6-48	86
Drop out (%)	6		11	0-18	43
Validated Instruments	9				64
<b>Case Management Models</b>					
Assertive Community	2				
Intensive Case Management	3				
Nursing Case Management	1				
Housing	1				
Social Work Model	1				
<b>Interventions</b> (% of studies reported these interventions)					
<b>Case Manager</b>					
Registered Nurse	10				91
Social Work	6				55
Allied Health	3				27
Discharge Planning	5				36
Interprofessional Collaboration	7				50
Case Conferencing	5				36
Crisis Intervention	4				29
Counselling	7				50
Home Visits	7				50
<b>Outcomes</b>					
↑ Hospital Admissions	3			5-39	21
↑ Hospital Length of Stay	3			8-14	11
↑ Hospital Costs	1			12	12
↑ Emergency Department Visits	2				66
↑ Contacts	6				100
↑ Functional Status	4				100
↑ Use of Services	3				100
↓ Hospital Admissions	8			22-72	30
↓ Hospital Length of Stay	7			4-69	37
↓ Hospital Costs	4			23-100	64
↓ Emergency Department Visits	1				33

### 3.4.9 Synthesis of Case Management Outcomes

A synthesis of themes was also undertaken using the data from Table 3.8 (see Table 3.9). Table 3.9 presents trends in case management outcomes, where the studies reporting on each outcome were combined under headings of increase (incline), no change or decrease (decline). To assist with the analysis where the study reported a statistically significant association of less than 0.05 an asterisk was used next to the reference, adding greater strength to the themes. Table 3.9 provides a visual representation of case management outcomes. These data indicate that case management outcomes are overall advantageous: 64% of studies reported a reduction in hospital admissions; half reported reduction in mortality; hospital length of stay was reduced in 71% of studies; severity of clients' condition was reduced in 88% of cases; and presentation to emergency departments was reduced in 60% of studies. All studies investigating re-hospitalisation rates, hospital costs, direct care hours, residential aged care facility admissions and symptom presentation, reported reductions. Of the few studies reporting quality of care aims (n=4), client contact (n=6) and provision of counselling services (n=3), all had positive outcomes. Medication compliance was a significant outcome for many case management models, resulting in an increased compliance of 80% in these studies. Improved functional status, role performance and social engagement were reported in 75% of studies, while quality of life indicators were overall more positive (55%). Client satisfaction improved in 78% of studies, while the remaining studies reported either no change, or a decline in expected outcomes, possibly indicative of the instruments utilised (see Table 3.5). Overall, three quarters of studies reported positive outcomes for the implementation of case management, while only 10% reported negative findings.

Table 3.9: Themes: Case Management Outcomes

	Increase	No Change	Decrease
<b>Hospital Admissions</b>	Franklin (1987) Gagnon (1999) Kim (2005) Lim (2003) Marshall (1998)	Elkan (2001) Goering (1988) Lichtenberg (2008) Smith (2007)	Bernabei (1998) * Bjorkman (2007)* Bond (1988) Borland (1989)* Bush (1990)* Dincin (1990)* Fitzgerald (1994)* Holloway (1998) Hutt (2004) Leung (2004) * Rubin (1992) Sadowski (2009)* Schraeder (2008) Spooner (1997) Ziguras (2000)* Zimmer (1990)
<b>Rehospitalisation</b>			Fitzgerald (1994) Schraeder (2008)*
<b>Emergency Department Visits</b>	Fitzgerald (1994) Gagnon (1999)*		Bernabei (1998)* Goering (1988) Bush (1990)* Sadowski (2009)*
<b>Hospital Length of Stay</b>	Franklin (1987) Gagnon (1999) Holloway (1998)	Smith (2007) Tosun (2006) White (2005)	Bernabei (1998) Bjorkman (2007)* Blegen (1995) * Dincin (1990)* Fitzgerald (1994) Hutt (2004)* Kim (2005) Leung (2004)* Lichtenberg (2008) Lim (2003)* Marshall (1995) Sadowski (2009)* Terra (2007) Ziguras (2000)* Zimmer (1990)
<b>Total Daily Costs</b>	Franklin (1987)	White (2005)	Aliotta (1995) Bernabei (1998) Blegen (1995)* Dincin (1990) Ferguson (1998) Leung (2004) Lim (2003)* Oeseburg (2009) Schraeder (2008) Singh (2005) Spooner (1997) Terra (2007) Zimmer (1990)

**Note:**

*Shaded text indicates a positive case management outcome*

*First Author only used*

*\* Indicates statistically significant results (p<0.05)*

Table 3.9: Themes: Case Management Outcomes (2 of 3 pages)

	Increase	No Change	Decrease
<b>Hospital Costs</b>			Aliotta (1995) Borland (1989)* Leung (2004) Spooner (1997) Zimmer (1990)
<b>Case Management Costs</b>	Franklin (1987) Zimmer (1990)		Leung (2004)
<b>Severity of Condition</b>	Fisher (1998)		Bernabei (1998)* Bjorkman (2007)* Chan (2000) * Ferguson (1998) Marshall (1995)* Smith (2007) Ziguras (2000)*
<b>Mortality</b>		Bernabei (1998) Fitzgerald (1994)	Elkan (2001)* Zimmer (1990)
<b>Direct care hours</b>			Zimmer (1990)
<b>Infection</b>			Blegen (1995)*
<b>Aged Facility Admission</b>			Elkan (2001)* Zimmer (1990)
<b>Symptom Presentation</b>			Bjorkman (2007)* Singh (2005)
<b>Quality of Care</b>	Aliotta (1995) Blegen (1995)* Singh (2005) Terra (2007)		
<b>Quality of Life</b>	Bjorkman (2007)* Dincin (1990) Lim (2003)* Oshima (2004)* Rife (1991)* Singh (2005)	Bond (1988) Franklin (1987) Holloway (1998) Marshall (1995)	Sadowski (2009)
<b>Medication Compliance</b>	Bush (1990)* Chan (2000) * Howgego (2003) Spooner (1997)	Bond (1988)	
<b>Client Satisfaction</b>	Aliotta (1995) Holloway (1998)* Oshima (2004) * Singh (2005) Terra (2007) Tosun (2006)* Ziguras (2000)*	Gagnon (1999) Rife (1991) Zimmer (1990)	
<b>Use of Services</b>	Borland (1989) Chan (2000)* Franklin (1987) Lim (2003)* Ziguras (2000)*	Bernabei (1998) Bond (1988)	Oeseburg (2009)
<b>Note:</b>	<p><i>Shaded text indicates a positive case management outcome</i>  <i>First Author only used</i>  <i>* Indicates statistically significant results (p&lt;0.05)</i></p>		

Table 3.9: Themes: Case Management Outcomes (3 of 3 pages)

	Increase	No Change	Decrease
<b>Role Performance</b>	Bjorkman (2007)* Chan (2000) * Rosa (2009)*		Cutler (1987)
<b>Engagement</b>	Aliotta (1995) Bjorkman (2007)* Blegen (1995)* Chan (2000) * Goering (1988) * Howgego (2003) Huber (2003) * Marshall (1998) Oshima (2004) * Rosa (2009)* Smith (2007) Ziguras (2000)*	Cutler (1987) Gagnon (1999) Marshall (1995) Rife (1991)	
<b>Counselling Services</b>	Chan (2000)* Yau (2005) Zimmer (1990)		
<b>Contact with Case Manager</b>	Chan (2000)* Fitzgerald (1994)* Gagnon (1999) Holloway (1998) Marshall (1995) Zimmer (1990)		
<b>Functional Status</b>	Bernabei (1998)* Bjorkman (2007)* Fitzgerald (1994)* Goering (1988)* Hutt (2004) * Lim (2003)* Sadowski (2009) Terra (2007)	Gagnon (1999) Zimmer (1990)	

**Note:** *Shaded text indicates a positive case management outcome*  
*First Author only used*  
*\* Indicates statistically significant results (p<0.05)*

### 3.4.10 Review Summary

A recent Cochrane Review reported that case management interventions “have not been studied sufficiently”, highlighting the need to address this deficit within a variety of health settings (Hesse, et al., 2009, p. 14). Yet little research has examined the use of a case management model of care applicable to residential aged care. Therefore, this review of case management studies and their outcomes has been important in informing the development of a case management model of care suitable for the residential aged care setting.

The RCTs conducted in this field provide a benchmark for evaluating the evidence (Higgins & Green, 2009; National Institute for Health and Clinical Excellence, 2006). Critique of these case management studies was beneficial in considering the application of case management in sectors other than residential aged care. This led to identifying the following themes for consideration in the development of both a survey methodology and the design of a model of care, namely; the role and effective utilisation of a Case Manager, and strategies for developing an inter-professional team. While identified a key to successful case management, not all of these elements are feasible for Australian residential aged care, given the smaller numbers of 'professionally regulated' staff working in these facilities able to implement a case management model and access medical and allied health practitioners who would ordinarily comprise the case management team.

A facility's decision to implement and maintain a viable case management model needs to consider a number of factors including, caseload, care pathways, and case conferencing. Other interventions identified in this review include 'home' visits (feasible as each client is visited in their own room or space) and provision of accommodation (expected as clients permanently reside in one location), managing finances (usually related to an existing guardianship contract), crisis intervention (within an 'ageing in place' scope) and discharge planning (critical when relocating facilities or temporarily in hospital). These factors were taken into consideration when critiquing the case management models used with older health populations.

### **3.5 Critique of Case Management Models**

A plethora of case management models have been reported in this review as indicated in Table 3.10. These different models were developed to meet unique client needs, health environments and workplace cultures (National Primary Care Research and Development Centre, 2005, 2006; Solomon, 2000). Case management is reported to be most successful when it provides for a flexible delivery style aimed primarily at meeting the unique needs of the target population (Dewing, 1997; Naleppa & Reid, 1998). Table 3.10 identifies different characteristics of Case Management Models reported in the literature, and ordered according to specialisation.

Table 3.10: Case Management Model Characteristics

Case Management Model	Setting	Specialisation	Case Load	Episodic/ Continuum	Case Manager	Focus
Acute Care Case Management	Hospital	Acute Care	<i>n/s</i>	Episodic	RN	Holistic
Advocacy Case Management	Community	Community	<i>n/s</i>	Continuum	RN	Holistic
Brokerage Case Management	Community	Community	1:30	Episodic	Carer	Disease Focused
Chronic Care Case Management	Community	Community	<i>n/s</i>	Continuum	RN	Holistic
Customer Driven Case Management	Community	Community	<i>n/s</i>	Episodic	Interprofessional	Holistic
Medical Case Management	Community	Community	<i>n/s</i>	Episodic	Doctor	Disease Focused
Professional Nurse Case Management	Community	Community	<i>n/s</i>	Episodic	RN	Holistic
Strengths Based Case Management	Community	Community	1:20	Continuum	Allied Health	Holistic
Socio-Medical Case Management	Community	Community	<i>n/s</i>	Episodic	Carer	Disease Focused
Team Case Management	Community	Community	1:85	Continuum	Interprofessional	Holistic
Enhanced Case Management	Community	Elderly	1:250	Episodic	RN	Disease Focused
EverCare Case Management Model	Community	Elderly	1:85	Episodic	Nurse Practitioner	Disease Focused
Longitudinal Nursing Case Management	Community	Elderly	1:29	Episodic	RN	Disease Focused
Nursing Case Management	Community	Elderly	<i>n/s</i>	Episodic	RN	Holistic
Assertive Community Case Management	Community	Mental Health	1:10	Continuum	Interprofessional	Disease Focused
Clinical Case Management	Community	Mental Health	1:6	Episodic	RN	Disease Focused
Intensive Case Management	Community	Mental Health	1:8	Episodic	Interprofessional	Holistic
CMSA Case Management	Community	Any	1:15	Both	RN	Holistic
Comprehensive Case Management	Community	Any	<i>n/s</i>	Episodic	Interprofessional	Holistic
Differentiated Case Management	Community	Any	<i>n/s</i>	Episodic	RN	Disease Focused
Integrated Case Management	Community	Any	<i>n/s</i>	Episodic	RN	Disease Focused

*n/s* = not specified

Caseload = Case Manager to client ratio



Case management models are categorised as either episodic (to address short-term plans), or continuous (for more long-term care strategies) (Carr, 2000). Episodic care involves a comprehensive integration of services to support the needs of a client for a short or defined period. While episodic care has a place in the health sector, there continues to be growing interest supporting a longer-term continuum of care model. Continuity in care enables fluidity of client progression from one service to another, while still maintaining and achieving individualised goals (Intagliata, 1982). Longer-term case management aims to meet the needs of chronically ill clients by minimising disease progression (Bailey, 1998; Carr, 2000; Coile & Matthews, 1999). The mode of delivery primarily depends on the target population, resource availability and the aim of the case management model.

To evaluate the evidence supporting these case management models the NICE guidelines were again employed (National Institute for Health and Clinical Excellence, 2006) and the level of interpretation of evidence identified (Ganong, 1987), as identified in Table 3.11. Table 3.11 has been ordered according to the different case management models reviewed and the level of rigor assessed against each.

Table 3.11: Analysis of Case Management Model Literature

Model	Author(s) (Year)	Level of Evidence	Interpretation ***
Acute Care Case Management	Yockery, Bobier, Harvey and Spooner (1997)	2++	A,B,D
	Spooner and Yockery (1997)	2++	A,B,D
	Beilman, Sowell, Knox and Phillips (1998)	2+	A,B
	Cook (1998)	2++	B,D
	Terra (2007)	2++	A,B,D
Advocacy Case Management	Hellwig, Yam and DiGiulio (2003)	2+	A,B,E
Assertive Community	Deci, Santos, Hiott, Schoewald and Dias (1995)	1+	A,D
	Marshall (1995)	1++	A,B,D
	Marshall et al. (1998)	1+	A,B,D
	Mueser, Bond, Drake and Resnick (1998)	2+	B,D
	Dixon (2000)	1+	A,B,D
	Ziguras and Stuart (2000)	1+	A,B,D
	Simpson, et al. (2003)	1+	A,B,D
Brokerage Case Management	Mueser, et al. (1998)	1+	A,B,D
	UK700 Group (1999)	1++	A,B,C,D
	Browne and Braun (2001)	1+	A,B
Case Management	Tyrer (2000)	2+	B,D
	Case Management Society of America (2002)	2+	B,D,E
	White (2004)	4	B,D
Chronic Care	Schaefer and Davis (2004)	4	B,D,E
Clinical Case Management	Kanter (1991)	4	B,D,
	Rubin (1992)	1++	A,B,D
	Tyrer (1998)	3	B
	Chu, Edwards, Levin and Thompson (2000)	1+	A,B
	Simpson, et al. (2003)	1+	A,B,D
Comprehensive Case Management	Davidson (1999)	2+	A,B,D,E
	Taylor (1999)	2+	B,D,E
Customer Driven	Henson and Daniels (2002)	3	B,D
Differentiated	Taylor (1999)	2+	B,D,E
Enhanced Case Management	Maravilla, Graves and Newcomer (2005)	2++	A,B,D
EverCare Case Management Model	Kane and Huck (2000)	2-	D
	Elkan et al. (2001)	1++	A,B,C,D
	Kane, Flood, Keckhafer and Rockwood (2001)	2++	D
	Kane, Keckhafer, Flood, Bershadsky and Siadry (2003)	2++	B, D
	National Primary Care Research and Development (2005)	1++	A,B,C,D
	Gravelle et al. (2007)	1++	B,D

Note: \* Level of Evidence as per NICE guidelines in Table 3.2

\*\* Interpretation as per Gangon (1987)

- A Suggestions for further research
- B Recommendations for policy or practice
- C Suggestions for future reviews
- D Conditions that impact on policy or practice
- E Theory

Table 3.11: Analysis of Case Management Model Literature (2 of 2 pages)

Model	Author(s)	Level of Evidence *	Interpretation **
Integrated Case Management	Qudah, Brannon and McDougall (1998)	3	B,D,E
Intensive Case Management	Mueser, et al. (1998)	1+	A,B,D
	Sherman and Ryan (1998)	1+	A,B,D
	Bedell, Cohen and Sullivan (2000)	2+	B,D
	Ziguras and Stuart (2000)	1+	A,B,D
	Marshall and Lockwood (2000)	1++	A,B,D
Longitudinal Nursing Case Management	Blaha, Robinson, Pugh, Bryan and Havens (2000)	3	B,D,E
Medical Case Management	Hurley and Fennell (1990)	4	B,D
	Netting and Williams (2000)	2++	D
	Moore-Greene (2000)	2++	A,B,D
	Powell and Ignatavicus (2001)	4	B,D
	Long (2002)	1++	A,B,D
	Carneal and Bev (2006)	2+	B,D
Nursing Case Management	Gonzalez-Calvo, Jackson, Hansford, Woodman and Remington (1997)	1+	A,B,D,E
	Moneyham and Scott (1997)	3	B,D
	American Nurses Association (1988)	4	B,D,E
	Padgett (1998)	3	B,D,E
	Guttman (1999)	4	B,D,E
	Sherrod and Richardson (2003)	4	B,D
	Palese, Chiara and Bresadola (2005)	2+	B,D
	Schraeder et al.,(2008)		A,B,D
	Suckley, Dellasega, Graber, Mauger, (2009)	1++	A,B,D
	Gabbay et al., (2006)	1++	
Professional Nurse Case Management	Sohl-Kreiger, Lagaard and Scherrer (1996)	2+	B,D
	Forbes (1999)	2+	B,D,E
	Taylor (1999)	2+	B,D,E
Strengths Based Case Management	Macias, Kinney, Farley, Jackson and Vos (1996)	2+	A,B,D
	Mueser et al.,(1998)	2+	A,B,D
	Marty, Rapp and Carlson (2001)	2+	A,B,D
	Simpson, et al. (2003)	2+	B,D
	Theodos (2004)	2+	A,B,D,E
	Rapp and Goscha (2004)		
Sociomedical Case Management	Hurley and Fennell (1990)	4	B,D
	Zawadski and Eng (1988)	4	B,D,E
	Long (2002)	1++	B,D,E
Team Case Management	Zimmer, Eggert and Chiverton (1990)	2+	B,D

Note: \* Level of Evidence as per NICE guidelines in Table 3.2

\*\* Interpretation as per Gangon (1987)

- A Suggestions for further research
- B Recommendations for policy or practice
- C Suggestions for future reviews
- D Conditions that impact on policy or practice
- E Theory

The following section outlines six case management models applied across the health care sector.

### 3.5.1 Assertive Community Treatment

Assertive Community Treatment primarily services mental health clients. The model encompasses strict interventions such as operating seven days a week unlike most other models, responding to all crises, employing no more than 20% part-time staff, intensive face to face contact and 24 hour availability, ensuring team autonomy, and establishing inter-professional teams of at least three health professionals (including Social Worker, Occupational Therapist, Nurse and Medical Practitioner) plus a part-time psychiatrist (Deci, et al., 1995; Dixon, 2000; Simpson, et al., 2003; Tyrer, 2000). Rigorous research has demonstrated positive outcomes for this model, as noted in Table 3.7. The Model has been met with much scepticism about the possibility of application and outcomes due to its bold implementation initiatives and high standards.

Assertive Community Treatment in general has been considered to be beneficial to the 'system' and clients alike, but it is noted that of the studies reporting positive outcomes, three were reviews (systematic review (Marshall, et al., 1998), meta-analysis (Ziguras & Stuart, 2000) and an integrative review (Rubin, 1992)), and the remaining two (Dincin, 1990; Marshall, et al., 1995) had lack of detail and risk of bias according to both NICE and GRADE criteria (see Table 3.4). Despite the low level of evidence supporting this Model it remains in wide use in mental health services. The restrictive implementation criteria and the expense involved does however limit its scope of use in many care settings; for example, the strict utilisation of no more than 20% part time staff would not be viable in the residential aged care sector, based on information noted in Chapter 2. Key interventions of this Model relevant to residential aged care include increased client contact, availability to clients and interprofessional collaboration.

### 3.5.2 Brokerage Model

The Brokerage Model uses non-caregiver personnel as Case Managers, and therefore differs from other models. The Case Manager coordinates services implemented by other providers (Hangan, 2006; King, et al., 2004; UK700 Group, 1999). Browne and Braun (2001, p. 352) identified that the model provided significant support to family and clients alike and without it, the carers felt "less able to cope". Nevertheless, the model

has attracted criticism due to its non-direct and impersonal approach to case management, with limited value unless there are a defined set of goals appropriate for the client and family (Arnold, 1987; Burns, 1997; Kanter, 1991; Mueser, et al., 1998; Simpson, et al., 2003). The Brokerage Model provides a Model that is cost efficient (Andrews & Teesson, 1994), yet is rarely the preferred model for older clients (Simpson, et al., 2003). While this Model has limited scope within the aged care sector, it has the potential for use when considering the need to increase the involvement of non-regulated staff in case management, who comprise much of the workforce in the residential aged care sector.

### 3.5.3 Case Management Society of America Case Management Model

The Case Management Society of America Model has slowly transitioned across a number of countries, including Australia (Case Management Society of Australia, 2004). This model integrates strong policies and professional standards of practice (Aliotta, Aubert, & Kirby, 1998). In this Model, the Case Manager performs a range of functions including assessor, advocate, facilitator (coordinator of care) and monitor of outcomes. Pivotal partnerships exist between the community, the client and the healthcare team (Case Management Society of America, 2002; White, 2004; White, et al., 2005). Characteristic qualities include a maximum caseload of 15, an orientation program for the Case Manager and flexibility in service delivery (Tyrer, 2000). This Model is suitable for the Australian context and preferred by the Case Management Society of Australia, with the potential for certification aligned directly to the Model. The essence of this Model speaks to the need for collaboration as a primary foci, as well as elements of caseload, education and the role of the Case Manager providing key foundational aspects needed in a Model of care. It is reported to offer the most flexible structure to support development and implementation across the sector, although only one research study confirmed this aim (White et al. (2005) (see Table 3.4).

### 3.5.4 Clinical Case Management Model

Clinical Case Management that has been traditionally implemented in mental health environments is well regarded internationally (Chu, et al., 2000; Ziguras, Stuart, & Jackson, 2002). The model is characterised by individualised and flexible programs, community outreach, small caseloads, interagency coordination, strong therapeutic relationships between service providers and clients and continuity of care for clients with severe mental illness (Andrews & Teesson, 1994; Burns, 1996, 1997; Chu, et al.,

2000; Kanter, 1989; Kanter, 1991; Lichtenberg, et al., 2008; Simpson, et al., 2003). Case Managers need to be professionally qualified with at least two years experience (Lichtenberg, et al., 2008). Clinical Case Management has generally proven effective and reported to decrease the cost of care and increase carer satisfaction, although sometimes linked to increased hospitalisation for mental health clients (Chu, et al., 2000; Ziguras, et al., 2002). This Model is suitable for the residential aged care sector and helps to develop interprofessional teams, given the focus on development of therapeutic relationships between client and carers.

### 3.5.5 EverCare Model

The EverCare Model engages the skills and resources of a Nurse Practitioner in a risk-management approach, aimed at meeting the needs of old and frail community-dwelling (including residential aged care) clients (Carr, 2003; Kane & Huck, 2000; National Primary Care Research and Development Centre, 2005, 2006). The Model is described by Carr (2003) as focusing on enhanced communication through daily team rounds, inclusion of Nurse Practitioners in client management, improved coordination of services and facilitating client advocacy through comprehensive client assessments. Nurse Practitioners spend approximately one third of their time in direct client care, one quarter communicating with carers, staff and medical practitioners and the remaining time in administrative roles in this Model (Abdallah, 2005; Kane, et al., 2001; Kane, et al., 2003). One study by Abdallah (2005) explored the role of the EverCare Nurse Practitioner and identified it as including; counselling, educator, clinician and communicator when working with residential aged care clients, however it was unable to substantiate their benefit to care practices or client outcomes. Despite this, some research on the USA Model reported it was effective in reducing hospital admissions and mortality (Elkan, et al., 2001), these outcomes were not reproduced in the UK which has facilitated a significant and extensive system review and culture of misgivings (Gravelle, et al., 2007).

Barriers to implementing the EverCare Model into Australia are many and include: small numbers of Nurse Practitioners (Gardner, Gardner, Middleton, & Della, 2009); lack of role clarity (Hader, 2010; Lash & Munroe, 2005); lack of policy and legislative challenges for scope of practice (Davidson, et al., 2006; Duchene, 2010); all of which are significant issues as these were present prior to the UK implementation (Gravelle, et al., 2007). Cultural shifts within the entire healthcare system in Australia need to be reviewed for Nurse Practitioners to take on this a role. Structural changes would need

to include development of RNs' education and skills in assessment, leadership and education, improved interprofessional collaboration, policy and legislation development and role clarity. These requirements have previously been identified in reviews of Australian aged care by the Productivity Commission (2010). However, the main issue with the requirement to employ Nurse Practitioners, or Nurse Specialists, to drive the Evercare Model is that the sector cannot afford to employ them, and certainly not the number of Nurse Practitioners/Specialists required.

### 3.5.6 Intensive Case Management

Intensive Case Management has been implemented within mental health utilising interprofessional teams. There have been demonstrated improvements in clients' quality of life and increased social engagement with the use of this model (Holloway & Carson, 1998; Marshall & Lockwood, 2000). Intensive Case Management has also improved client, carer and staff satisfaction (Hangan, 2006), increased engagement with service providers and reduced length of hospital stay for mental health clients (Marshall & Lockwood, 2000). This Model was found to be more successful where there was an active team of support staff (Holloway, Murray, & Squire, 1996), rather than a sole Case Manager (Hangan, 2006; Holloway & Carson, 1998; Nelson, Sadeler, & Cragg, 1995; Waite et al., 1997). Nevertheless, this Model has not always delivered clinical improvements with increased client contact (Andrews & Teesson, 1994; Burns, 2002; Castle, 2000; UK700 Group, 1999). As well, while there were some positive outcomes for clients with this resource-intensive model, there was also an increased burden on community services and a heavier workload for Case Managers (Bedell, et al., 2000). Intensive Case Management has provided key strategies that aim to improve client satisfaction and engagement in care, however success requires strategic and well considered implementation strategies for the residential aged care facility.

### 3.5.7 Summary of Case Management Models reviewed

Following recommendations made in Section 3.4.9, a relevant Model of Care for use in the residential aged care sector should consider the inclusion of Case Managers, interprofessional collaboration, caseloads, pathways, case conferencing, accessibility and availability of Case Managers, and discharge planning. These case management elements have been further explored in the preceding description of a number of more widely accepted Case Management Models. Despite the lack of rigorous research in the Assertive Community Treatment Model and its specificity to mental health,

dominant elements for consideration include 'availability' and 'collaboration'. The Brokerage Model, again limited in design by relying on un-regulated staff acting in a predominantly administrative role, has been regarded as being very cost effective but not able to produce consistently positive client outcomes. The Case Management Society of America Case Management Model has been validated by expert opinion yet lacks research to support its structure. However its recommendations for a low caseload, flexibility, collaborative approach and Case Manager development are important elements for inclusion in a Model of Care. Clinical Case Management has been supported by rigorous research, providing increased evidence for small caseloads, relationship-building, individual care planning, pathways, and a continuum of care design. The EverCare Model has been strongly supported for its focus on assessment, collaboration, client centred philosophy and skill required within the Case Manager role. Despite its stilted growth in the USA and UK, the EverCare Model has remained less than successful in achieving its aims. The key to this Model is the utilisation of Nurse Practitioners. However, the lack of policy and clarity of role, along with skill mix and cost of implementation would suggest it is both unmanageable and unsustainable. This is particularly the case in the current professional and political contexts for Nurse Practitioners in Australia. Intensive Case Management has also been well supported in the mental health sector, with demonstrated benefits in achieving collaborative partnerships, timely crisis management and providing evidence for reduced caseloads. A synthesis of the Model components and elements is listed in Table 3.12 and further explored in Section 3.6.



Table 3.12: Elements of Case Management for Health Services

Case Management Model	Elements of Case Management								
	Preparation		Implementation			Collaboration			
	Vision	Pathways	Outcomes	Comprehensive Assessment	Caseload	Skilled Case Manager	Competent Staff	Client Engagement	Key Stakeholder Engagement
Acute Care Case Management		✓	✓	✓		✓		✓	✓
Advocacy Case Management						✓	✓	✓	✓
Assertive Community Management			✓	✓	✓	✓	✓	✓	✓
Brokerage Model			✓	✓	✓	✓	✓	✓	✓
CMSA Case Management	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chronic Care Case Management	✓		✓	✓		✓		✓	✓
Clinical Case Management			✓	✓	✓	✓	✓	✓	✓
Comprehensive Case Management			✓	✓		✓		✓	✓
Customer Driven Case Management			✓	✓		✓		✓	✓
Differentiated Case Management		✓		✓		✓		✓	✓
Enhanced Case Management		✓		✓	✓	✓	✓	✓	✓
EverCare Model	✓	✓	✓	✓	✓	✓	✓	✓	✓
Integrated Case Management		✓		✓		✓		✓	✓
Intensive Case Management	✓	✓	✓	✓	✓	✓	✓	✓	✓
Longitudinal Nursing Case Management				✓	✓	✓	✓	✓	✓
Medical Case Management				✓				✓	✓
Nursing Case Management		✓	✓	✓	✓	✓	✓	✓	✓
Professional Nurse Case Management			✓	✓		✓	✓	✓	✓
Strengths Based Case Management			✓	✓	✓	✓	✓	✓	✓
Sociomedical Case Management			✓			✓		✓	✓
Team Case Management			✓		✓			✓	✓

A thematic synthesis is a valid method for analysing the predominantly qualitative data reported in the case management models evaluated (Thomas & Harden, 2008). While the transparency and rigor of this method has been questioned (Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005), this is only one method used in this study to develop the design of a relevant model for the Australian residential aged care setting. Due to the diverse nature of case management, including settings, populations, interventions, and models (Table 3.1), a thematic synthesis was the most suitable method for reviewing and consolidating findings from the literature. Most models and related research did not provide adequate information of all interventions.

Consideration was given throughout the process to the credibility of studies along with the complexity of the sector as discussed in Chapter 2.

### **3.6 Investigating the Elements of Case Management**

Each Case Management Model described in Table 3.12 has elements applicable to the residential aged care sector, including: continuity of care, service accessibility, enhanced staff-client relationships and collaboration, Case Manager accountability, matching or aligning support to need, active intervention by the Case Manager, facilitating client independence, and client advocacy (Rapp & Goscha, 2004; Thornicroft, 1991).

#### **3.6.1 Collaboration**

Case management requires a concerted commitment to open and effective communication and collaboration between all key stakeholders (Day, 1996; Rosen & Teesson, 2001). Clients need contact with 'familiar' Case Managers at all times, including times when crisis intervention is needed and when emergency situations arise (Rapp & Goscha, 2004). Where therapeutic relationships are developed, there is evidence of improved client outcomes (Howgego, et al., 2003). Case management literature identifies case conferences as one strategy that facilitates collaboration.

Case conferences are an important collaborative strategy in case management, involving as many key stakeholders, including the client where possible (Biala, 2002; Gagnon, et al., 1999; Kuklierus, Mayer, & Wortham, 2000; Mitchell et al., 2005; Peterson, 2004; Stanton, Walizer, Graham, & Keppel, 2000; Whywialowski, 2004). Regular case conferences and open communication channels (Cudney & VanTuyle, 2001; Halcomb, Davidson, Phillips, & Hickman, 2006) have improved client outcomes in a small number of studies (Mitchell, et al., 2005; Stanton, et al., 2000; Whywialowski, 2004). However, other researchers have not found case conferencing to add value to client outcomes (as identified in Table 3.6). Where case conferencing was undertaken (Bernabei et al., 1998 (29%,  $p<0.05$ ); Leung et al., 2004 (37%,  $p<0.05$ ); Schraeder et al., 2008 (9%,  $p<0.05$ )), hospital admissions decreased by 25%, compared to a reduction of 44%, on average, in admissions in other case management models. Similarly, hospital length of stay decreased by 29% where case management occurred (Bernabei et al., 1998 (35%); Gagnon et al., 1999 (8%,  $p<0.05$ ), Leung et al., 2004 (53%,  $p<0.05$ ); Lichtenberg et al., 2008 (22%); Lim et al., 2003 (4%,  $p<0.05$ )) compared to the review average of 39%. While case conferencing is theoretically

desirable, it is only one feature of case management and has not been proven to substantially reduce either hospital admissions or length of stay. Rather, effective communication and collaboration between client and a Case Manager and regular engagement with key stakeholders, including clients and their carers is key to achieving desired outcomes for clients (Schraeder, et al., 2008).

#### *3.6.1.1 Client Engagement*

The focus of all case management models is the client and client-centred care is considered a principal overarching philosophy for many management models aimed at better outcomes for older people (Chenoweth, et al., 2009; Fricke, 2006; Glasson et al., 2006; Ponte, et al., 2003; Wolf, Lehman, Quinlin, Zullo, & Hoffman, 2008). The centrality of the client is present in all case management models, as is client empowerment through active engagement in decision-making processes (Clemens, Wetle, Feltes, Crabtree, & Dubitzky, 1994; Coleman et al., 2004; Cox & Albusu, 2001; Fricke, 2006). Key stakeholders in this process include the client, carer, staff, allied health professionals (including the Medical Practitioner), external support services and where relevant, religious/spiritual personnel. All staff involved in the care of the client must be considered stakeholders along with family members and need to be actively involved in decision-making, while being up-skilled for the role (Mullen & Kelley, 2006; Stanton, et al., 2000).

#### *3.6.1.2 Key Stakeholder Engagement*

Regular and effective communication among the health team is critical in every case management model (Anderson & Tredway, 1999; Bourdeaux et al., 2005; Case Management Society of Australia, 2006; Day, 1996; Halcomb, et al., 2006; Taylor, 1999). Ineffective verbal and written communication regarding client requirements is of concern in healthcare and is frequently a contributing factor in negative client outcomes (Haig, Sutton, & Whittington, 2006). Inter-professional collaboration is essential for effective case management, since no one discipline has been found to successfully provide this care service in isolation (Huber, 2000; Tyrer, 2000; White & Hall, 2006), although some evidence is conflicting (see Table 3.6). Effective inter-professional collaboration contributes to holistic client assessment, goal planning and care delivery (Hyland, Judd, Davidson, Jolley, & Hocking, 2003; Tucker, Hughes, Sutcliffe, & Challis, 2008), which is particularly important for clients with complex health needs and therefore, well suited to the residential aged care context (Flicker, 2000; Hickman, Newton, Halcomb, Chang, & Davidson, 2007).

### 3.6.2 Preparation

Planning to ensure adequate preparation is pivotal (Callaway, 1997; Sinnen & Schifalacqua, 1991). Issues such as developing an organisational vision around case management that is both supported and cohesive is required initially, followed by gathering baseline data (for example; client satisfaction, skin tears, funding classification) and supporting an efficient evaluation. Ensuring processes are based on evidenced based practices, using pathways and capturing variance assists development of quality case management systems. Domains used to guide preparation within this model of care include developing a well communicated and understood vision, gathering baseline and the periodic outcomes and indicators to measure performance, as well as designing a structured evidenced based series of care pathways.

#### *3.6.2.1 Organisational Vision*

Organisational vision needs to be well articulated and planned prior to implementation (Aliotta, 1996; Cox & Albus, 2001; Cudney & VanTuyle, 2001; Daniels, 2003; Henson & Daniels, 2002; Intagliata, 1982; Johnson & Proffitt, 1995; Kesby, 2002; Summers, 2009; Taylor, 1999; Thomas, 2008b). The vision should include a description of case management, along with value-added short and long-term goals with objective measurable criteria. The outcome-based goals should align with current organisational strategic plans (Aliotta, 1995; Daniels, 2003; Nash, 1998; Powell, 2003). Henson and Stefani (2002) identified that a lack of vision led to less direction or focus in areas such as financial management, resource allocation and relationship building. Importantly, “lack of vision was often the single most significant impediment to the design of a fully successful case management program” (Daniels, 2003, p. 84). A shared vision and mission “eliminates redundancy, improves health, quality and efficiency, increases access and control costs” (Qudah, et al., 1998, p. 11). While vision remains critical in case management, so does quality mechanisms to support evidenced-based practices and evaluations to detect deviations in practice.

#### *3.6.2.2 Residential Aged care Pathways (RAPs)*

Within residential aged care, care plans are routinely developed for all clients, with clinical interventions and funding considerations well integrated, as compared with case management literature that suggests using clinical or care pathways for care planning. Clinical and care pathways are a sequential set of documentation of

predicted events and milestones that are expected for the client, using an inter-professional approach (Beilman, et al., 1998; Bradley, 1995; Ireson, 1997; Rotter et al., 2008). These pathways are utilised to ensure efficient evidence-based practices are implemented, aiming for cost minimisation (Day, 1996; Ignatavicius & Hausman, 1995; Johnson & Proffitt, 1995; Yaksic, DeWoody, & Campbell, 1996). The value of clinical pathways and care plans includes: cost containment (Johnson & Proffitt, 1995; Rotter, et al., 2008); reduced length of stay (Johnson & Proffitt, 1995; Rotter, et al., 2008); improved delivery of care (Singh, 2005); assurance of quality care and improvement in client outcomes (Rotter, et al., 2008; Sesperez, Wilson, Jalaludin, Seger, & Sugrue, 2001); increased inter-professional collaboration; and improved staff performance (Schriefer & Botter, 2001).

One action research project examining the link between integrated pathways and an enhanced level of communication, found pathways facilitated improved outcomes in trust, although there was no evidence to suggest improved interprofessional collaboration occurred (Atwal & Caldwell, 2002). Others have also found clinical pathway and care planning concepts are useful strategies in case management for assisting clients achieve individualised care outcomes (Schaefer & Davis, 2004; Spooner & Yockey, 1997).

#### *3.6.2.3 Case Outcomes and Measures (COMs)*

Case management is closely aligned with 'outcome management', since "Case Managers are accountable for case management outcomes and case management interventions" (Powell, 2000, p. 55). To demonstrate success, documented case management outcomes must be objective and aligned to organisational goals (Aliotta, 1996; Huber, et al., 2001; Powell, 2000; Taylor, 1999), similar in process to quality improvement strategies. As with every planned intervention, case management requires robust data gathering procedures, including baseline client data to measure against achievement of planned goals (Cesta & Falter, 1999; Dewing, 1997).

#### 3.6.3 Implementation

Implementation of case management requires a resource-intensive planning phase, where a model is identified and adapted as required (Callaway, 1997; Sinnen & Schifalacqua, 1991), and key stakeholders are suitably informed and up-skilled. Case management "cannot work in a vacuum and needs to be a part of a larger activity focused on system-wide improvement in care delivery" (Nash, 1998, p. 144).

Implementation of case management is dependent on strategic, well communicated initiatives (Gibbs, 1999). Adequate infrastructure is required, including administrative support and up-to-date information technology (Aliotta, 1996; Carr, 2000; Phelan, 1996; Rosen & Teesson, 2001; Stanton, et al., 2000). Challenges implementing case management include confusion due to: overlapping responsibilities; resistance to asking for help (Dzyacky, 1998); fragmented care following from impaired communication (Coile & Matthews, 1999; Day, 1996; McKendry, 2004; Stanton, et al., 2000); limited evidence of cooperative practices; and perceived power struggles in care service (Cudney & VanTuyle, 2001).

Comprehensive documentation, including client care plans, pathways and variances, is crucial to the success, or failure, of case management (Birmingham, 2004; Devine, 2004; Strassner, 1996; White, 2004). Common barriers to effective documentation centre on handwriting legibility, insufficient information documented, time deficiencies and communication difficulties (Devine, 2004). System, policy and procedure manuals need to remain up to date, accurate, easy to follow and accessible (Aliotta, 1996; Cox & Albus, 2001; Dzyacky, 1998; Muller, 2004) to assist with clearer communication of client needs and service evaluation.

Achieving important communication processes requires support programs for case management. Orientation programs for Case Managers and key stakeholders need careful planning and integration to support the change processes required for positive client outcomes, yet the education required to up-skill and orientate Case Managers was rarely identified in the literature. Table 3.13 highlights the variations in length and content of case management orientation programs. Donoghue et al., (2004) and Gournay and Thornicroft (2000) expressed their concern that programs to skill Case Managers and prepare them for their role and were not given the status or importance required.

Table 3.13: Variances in Orientation for Case Management Programs

Number of Days Orientation	Evidence Based Practice		Resource Utilisation & Service Provision	Policies and Procedures Documentation		Disease Process	Assessment, Planning, Implementation and Evaluation	Outcomes and Pathways	Crisis Management	Reference
	Vision	Leadership								
1 day	✓		✓		✓			✓	Aliotta (1996)	
5 days	✓	✓	✓	✓	✓				Henson and Stefani (2002)	
5 days			✓	✓	✓	✓			Day (1996)	
60 hours			✓	✓	✓		✓	✓	Lichtenberg et al., (2008)	
36 +50 days	✓	✓	✓	✓	✓		✓	✓	Gournay & Thornicroft (2000)	
8 weeks			✓			✓			Schaefer and Davis (2004)	
In-service			✓		✓	✓	✓	✓	Chan et al., (2000)	
Not Specified			✓		✓	✓		✓	Intagliata (1982)	
Not Specified	✓	✓	✓	✓	✓				Strassner (1996)	
Not Specified	✓	✓	✓	✓	✓		✓	✓	Schraeder et al., (2008)	

Note: Blank cells are indicated where information was not provided to indicate this element was included in the orientation program

### 3.6.3.1 Comprehensive Assessment and Evaluation

Within almost every case management model are the functions of assessment, planning, monitoring and evaluation within the continuum of care, regardless of context (Calhoun & Casey, 2002; Case Management Society of America, 2002; Case Management Society of Australia, 2004; Chan, et al., 2000; Evans, et al., 2005; Feldman, Olberding, Shortridge, Toole, & Zappin, 1993; Ginther, Webber, Fox, & Miller, 1993; Intagliata, 1982; McCollom, 2004; Moneyham & Scott, 1997; Mullahy, 1988; Roberts, et al., 2007; Schaefer & Davis, 2004; Strassner, 1996; Taylor, 1999; Yau, et al., 2005). A plan of care should reflect this care continuum and present specific individual needs and priorities, yet assessment of total client needs is frequently not undertaken in a comprehensive way (Challis et al., 2004). To achieve comprehensive assessment, client and carer interviews should be conducted during the initial assessment stage, suitably informed by key stakeholders, to enable the development of an effective outcome-based care plan (Challis, et al., 2004; Marek & Rantz, 2000; Zink, 2005).

Case Management is most effective when client (and family) assessment goes beyond an episodic plan of care to consider long-term needs of the client and carer (Grachek, 2000; Strassner, 1996; Zink, 2005), through an ongoing process which includes at least weekly visits to each client (Intagliata, 1982). It has been identified that the more comprehensive an assessment undertaken is, the more effective the case management process (Vasquez, 2009). Monitoring the dynamic situation for the client requires rigorous and critical thinking approaches (Tullett & Neno, 2008) and evaluation of client outcomes (Evans, et al., 2005; Rothman, 1991). Increased rigor in this assessment, planning and evaluation processes will actively support improved client outcomes (Elwyn, Williams, Roberts, Newcombe, & Vincent, 2008).

#### *3.6.3.2 Caseload*

The time allocated for case management will vary according to the services and resources required to effectively coordinate and manage an individual clients' needs (Balstad & Springer, 2006; Huber & Craig, 2007). Caseloads can range from between five and 250, depending on the model (see Table 3.14). Notably, no literature was identified on caseloads occurring within residential aged care in Australia. Factors to consider when allocating caseloads include: contact frequency, client need and acuity, Case Manager competence, caseload maturity, and consideration for shared workload, and administrative roles (Craig & Huber, 2007; King, et al., 2004; Simpson, et al., 2003; Strassner, 1996; Waite, et al., 1997). While a small caseload alone does not predict the success of case management goal achievement, smaller caseloads afford greater flexibility to devote time to developing therapeutic relationships with clients and family members and increases the opportunity to implement individualised plans of care (Rapp & Goscha, 2004). A smaller caseload increases the amount of time to advocate, coordinate, liaise, plan and educate the client (McGettigan, 2003; Rapp & Goscha, 2004; Simpson, et al., 2003), increases response-time to clients' needs, provides more opportunity for client contact during hospital admissions and enables client advocacy (Aliotta, 1996; Hellwig, et al., 2003; King, et al., 2004; McGettigan, 2003; Simpson, et al., 2003).



Table 3.14: Variations in Caseload in Case Management Models

Case Load	Case Management Model	Authors
1:10	<i>Not defined</i>	(Burns, 1997)
1:10-55	<i>Not defined</i>	(Sargent, Boaden, & Roland, 2008)
1:<15	<i>Not defined</i>	(Gorey et al., 1998)
1:15-20	<i>Not defined</i>	(Goering, et al., 1988)
1:20-30	<i>Not defined</i>	(Intagliata, 1982)
1:20-30	<i>Not defined</i>	(Howgego, et al., 2003)
1:30	<i>Not defined</i>	(Franklin, et al., 1987)
1:45	<i>Not defined</i>	(Aliotta, 1996)
1:10-200	<i>Not defined</i>	(Baker & Intagliata, 1984)
1:5	Acute Care Case Management	(Tosun & Akbayrak, 2006)
1:8	Assertive Community Treatment	(Bond, et al., 1988)
1:8-10	Assertive Community Treatment	(Tyrer, 2000)
1:10	Assertive Community Treatment	(Marshall, et al., 1998)
1:16	Assertive Community Treatment	(Dincin, 1990)
1:<20	Assertive Community Treatment	(Rapp & Goscha, 2004)
1:<20	Assertive Community Treatment	(Deci, et al., 1995)
1:30	Assertive Community Treatment	(Rife, et al., 1991)
1:30+	Brokerage Model	(Marshall, 1996)
1:<15	CMSA Case Management Model	(Case Management Society of America, 2002)
1:6-7	Clinical Case Management	(Simpson, et al., 2003)
1:10	Clinical Case Management	(Rubin, 1992)
1:30	Clinical Case Management	(Lichtenberg, et al., 2008)
1:250	Enhanced Case Management	(Maravilla, et al., 2005)
1:50	EverCare in United Kingdom	(Fraser, et al., 2005)
1:85	EverCare in America	(Kane, et al., 2003)
1:20	Housing Case Management	(Sadowski, et al., 2009)
1:8	Intensive Case Management	(Holloway, et al., 1996; Waite, et al., 1997)
1:9	Intensive Case Management	(Borland, et al., 1989)
1:<10	Intensive Case Management	(Issakidis, Sanderson, Teesson, Johnston, & Buhrich, 1999)
1:12	Intensive Case Management	(Bush, et al., 1990)
1:20	Intensive Case Management	(Holloway & Carson, 1998)
1:30	Intensive Case Management	(Andrews & Teesson, 1994; Tyrer, 2000)
1:85	Intensive Case Management	(Zimmer, et al., 1990)
1:29	Longitudinal	(Blaha, et al., 2000)
1:46	Nurse Case Management	(Gagnon, et al., 1999)
1:6	Nursing Home Care	(Healy & Elliott, 1999)
1:12-20	Strengths Based Case Management	(Rapp & Goscha, 2004)
1:30	Social Work Case Management	(Franklin, et al., 1987)

A synthesis of studies presented earlier (Table 3.6) highlighted particular caseload trends, which are presented in Table 3.14. As reported previously, an overall average caseload was one Case Manager to 23 clients (Table 3.6). Where admissions to hospital were reported to have decreased, caseloads were 1:24 (Table 3.6). Randomised Control Trials reported particularly higher caseloads of 1:36 (Table 3.8).

Where Case Managers were not reported to have a direct interprofessional intervention in the case management program, hospital admissions decreased by 59% with appointment of a Case Manager (as compared to the average of 44%) and utilised a caseload of 1:13. Furthermore, a case management ratio of 1:16 was related to a 44% decrease in these outcomes (as compared to the average 39%). A further analysis of Table 3.6 was undertaken with particular focus on studies that reported an allocation of caseload to Case Managers, categorised into four groups (no caseload identified, caseload of 1-20, caseload of 21-40, caseload of 40+) (Table 3.15). These were compared predominantly against the outcome data of admissions, length of stay and hospitalisation.

Table 3.15: Caseload Study Review (Adapted from Table 3.6)

	TOTAL	Caseload 0		Caseload 1-20		Caseload 21-40		Caseload 40+	
	Mean=	m=23	m=0	m=13	m=30	m=66			
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)			
Case Management Intervention	Studies reviewed	44	28 (64)	11 (25)	3 (7)	2 (5)			
	Cumulative population	10238	7946 (78)	1137 (11)	634 (6)	521 (5)			
	Case Mgr - RN	18 (41)	12 (43)	3 (27)	1 (33)	2 (100)			
	Case Mgr - Social Worker	8 (18)	3 (11)	2 (18)	2 (67)	1 (50)			
	Case Mgr - Allied Health	4 (9)	2 (7)	1 (9)	1 (33)				
	Case Mgr - Coordinator	5 (11)	3 (11)	1 (9)		1 (50)			
	Critical Pathways	4 (9)	2 (7)	1 (9)		1 (50)			
	Discharge Planning	7 (16)	3 (11)	3 (27)		1 (50)			
	Interprofessional Team	13 (30)	8 (29)	2 (18)	1 (33)	2 (100)			
	Case Conferencing	10 (23)	7 (25)	1 (9)	1 (33)	1 (50)			
	Crisis Intervention	4 (9)	3 (11)	1 (9)					
	Employment	2 (5)	1 (4)	1 (9)					
	Normal Coverage (Hrs)	3 (7)	1 (4)	1 (9)		1 (50)			
	Counselling	7 (16)	4 (14)	2 (18)		1 (50)			
	Managing Finances	2 (5)		1 (9)		1 (50)			
	Escorting to Appoint.	1 (2)		1 (9)					
	Medication Monitoring	1 (2)		1 (9)					
Home Visits	11 (25)	8 (29)	2 (18)		1 (50)				
Accommodation	4 (9)	1 (4)	3 (27)						
		↑	↓	↑	↓	↑	↓	↑	↓
Case Management Outcomes	Admissions (n)	21 (48)	3 (11)	9 (32)	6	1 (33)	1 (50)	1 (50)	
	Rehospitalisation	2 (5)		2 (7)					
	Emergency Dept. Visits	6 (14)	1 (4)	2 (7)		2		1 (50)	
	Hospital Length of Stay	19 (32)		11	1 (9)	3	1 (33)	1 (33)	1 (50)
	Total Daily Costs	14 (32)		11		1 (9)	1 (33)		1 (50)
	Hospital Costs	3 (7)		2 (7)					1 (50)
	Case Management Costs	3 (7)		1 (4)			1 (33)		1 (50)
	Use of Services	6 (14)	3 (11)	1 (4)	1 (9)		1 (33)		
	Mortality	2 (5)		1 (4)					1 (50)
	Direct care hours	1 (2)	0 (0)						1 (50)
	Aged Facility Admission	2 (5)		1 (4)					1 (50)
	Symptoms	2 (5)		2 (7)					
	Infection	1 (2)	1 (4)						
	Severity of Condition	8 (18)	1 (4)	6 (21)		1 (9)			0 (0)
	Counselling	3 (7)	1 (4)		1 (9)				1 (50)
	Client Satisfaction	7 (16)	5 (18)		2				
	Role Performance	4 (9)	3 (11)	1 (4)					
	Engagement	12 (27)	10		2				
	Contacts	6 (14)	2 (7)		2				2 (100)
	Functional Status	8 (18)	6 (21)		2				
Medication Compliance	4 (9)	2 (7)		2					
Quality of Care	4 (9)	4 (14)							
Quality of Life	7 (16)	4 (14)		1 (9)	1 (9)	1 (33)			
<b>% means</b>									
Hospital Admissions (% m)		20	43	51	39		20	22	
Hospital LOS (% m)			32	44	14	22	8	59	
Costs (% m)			54		12			41	

\* To minimise clutter in the table, where 0 results are indicated, the box has been left empty, hence indicating n=0 (0%)

No caseload was identified in studies conducted by: Aliotta, (1995); Bernabei et al., (1998), Bjorkman and Hansson, (2007); Blegen et al., (1995), Browne and Braun, (2001); Chan et al., (2000); Cutler et al., (1987), Elkan et al., (2001), Ferguson and Weinberger, (1998); Fisher et al., (1988); Fitzgerald et al., (1994); Huber et al., (2003); Hutt et al., (2004); Kim and Soeken, (2005); Leung et al., (2004); Lim et al., (2003); Marshall et al., (1998); Oeseburg et al., (2009); Oshima et al., (2004), Rosa et al. (2009); Rubin, (1992); Schraeder et al., (2008), Singh, (2005); Smith and Newton, (2007); Spooner and Yockery, (1997); Terra, (2007); White et al., (2005); Ziguras and Stuart, (2000).

Caseloads of 1-20 were reported by: Bond et al., (1988); Borland et al., (1989); Bush et al., (1990); Dincin, (1990); Goering et al., (1988); Holloway and Carson, (1998); Howgego, Yellowless, Owen, Meldrum and Dark, (2003); Marshall et al., (1995); Sadowski et al., (2009); Tosun and Akbarurak, (2006); Yau et al., (2005). Caseloads of 21-40 were reported by: Franklin et al., (1987); Lichtenberg et al., (2008); Rife et al., (1991), and a caseload of 40+ was identified in Gagnon et al. (1999) and Zimmer et al. (1990) studies.

Thus, caseloads varied significantly in reported case management models, and found to be associated with a wide variety of interventions and outcomes:

- i. The majority of studies with (zero or no reported caseloads) utilised RNs as Case Managers (78%), compared to less than 11% in the other categories;
- ii. Studies with caseloads of 1-20 stood out as having a different model, compared to other categories. 'Caseloads 1-20' studies (35 months) utilised follow-up data over periods almost three times longer than 'Caseloads 0' (15 months), 'Caseloads 21-40' (12 months) and 'Caseloads >40' (17 months) studies. 'Caseloads 1-20' undertook more discharge planning interventions and were generally more 'hands on' in their responsiveness to clients' needs, and utilised less interprofessional teams and conducted less case conferences, with their average 1:13 caseload. 'Caseloads 1-20' studies had significantly more positive outcomes for the client, along with greater reduction in hospital admissions (51%);
- iii. Studies with caseloads of 21-40 had an average caseload of 1:30 and were active in conducting case conferences and interprofessional collaborative initiatives; and

- iv. Two studies with caseloads of more than 40 had an average caseload of 1:66, and both focused interventions on interprofessional collaboration and case conferences. 'Caseloads >40' studies were likely to report a reduction in hospital length of stay (59%) and one study reported a non-significant 41% cost reduction.

Gorey et al. (1998) found a correlation between case-load and effectiveness of treatment, with a staff to client ratio of 1:15, or less, achieving better client outcomes. Rapp and Goscha (2004) undertook a meta-analysis of case management studies and reported that there were no demonstrated positive outcomes when caseloads exceeded 1:20. No studies were found to have evaluated caseloads in residential aged care.

#### *3.6.3.3 Skilled Case Manager*

The Case Manager is “the most critical component” and is an important link between the client and health system (Intagliata, 1982, p. 659). This role is central to assuring clients receive optimal care. Core functions of a Case Manager include: assessment, provision of coordinated services (Carr, 2000; Kuklierus, et al., 2000; Schaefer & Davis, 2004); education (Chu, et al., 2000; Kuklierus, et al., 2000); client care (Berger, 1988; Carr, 2000; Schaefer & Davis, 2004; Taylor, 1999); crisis intervention (Cox & Albus, 2001); counselling (Chu, et al., 2000); leadership; monitoring activities of daily living (Novak, 1998); medication; documentation (Blass & Reed, 2003); developing therapeutic relationships (Sherrod & Richardson, 2003) and referral (Carr, 2000; Chu, et al., 2000; Schaefer & Davis, 2004). Health promotion activities are also considered an important component of the role (Rieve, 1999), although this is under-represented in the literature. The Case Manager needs to be committed to quality assurance and evaluation (Blass & Reed, 2003; Intagliata, 1982; Zhan & Miller, 2003b) and is therefore accountable for client interventions and outcomes (Rapp & Goscha, 2004). The Case Manager is accountable for care and service delivery at every stage of the clients' time with the service provider (Rosen & Teesson, 2001). A Case Manager must be highly skilled and experienced as a health advocate (Allred et al., 1995; Case Management Society of Australia, 2004; Daniels, 2009; Tahan, 2005).

The ethics of case management, as with any health professional involves “doing the right thing, at the right time, for the right reason” (McCollom, 2004, p. 203). The centrality of the advocacy role is based on the development of a transparent and trusting therapeutic relationship (Beeforth, Conlan, & Graley, 1994; Burns & Santos,

1995; Coombs & Byrne, 2003; Kanter, 1991; Shendell-Falik, 2002; Simpson, et al., 2003; Tahan, 2005; Thornicroft, 1991; White, 2004). The roles of a Case Manager as identified here have many synergies with health professionals, including Registered Nurses and Nurse Practitioners to varying degrees. While debates occur within each Model of Care, the literature thus far has clearly defined the roles relevant to Case Management Models, signalling the need to consider parity between them.

An international debate continues as to which professional roles and staff levels are well positioned and most suited to the case management role. Zink (2001) argued that the discipline providing the majority of services should undertake case management. Each profession brings to the role a unique set of strengths and each remains underpinned by the principles of case management (Rapp & Goscha, 2004; Robbins & Birmingham, 2005; Schuetze, 2006), yet American Healthcare Consultants' (2001) identified that three out of five practising Case Managers were RNs, many of whom held at least a Masters Degree (Dunn, Sohl-Kreiger, & Marx, 2001). This number increased substantially in the USA where RNs made up 94% of the case management workforce (Park & Huber, 2009). Registered Nurses present as ideal candidates for a Case Manager position (Cesta & Tahan, 2003; Cohen & Cesta, 2005; Schmitt, 2005; Weiss, 1998) due to their depth of understanding of the health system and disease processes (Schmitt, 2005; Weiss, 1998), and resilience and capability to work within system deficiencies (Cook, 1998). Overall, health care costs were reduced and overall client outcomes were improved where an RN was recruited in a Case Manager role (Table 3.7).

Success also depends on selection of the right person for the role (Chan, et al., 2000; Kuklierus, et al., 2000; Taylor, 1999). Beilman et al., (1998) warned that where Nurse Case Managers were expected to ration out care and minimise expenditure as key component of their role, this will inevitably create intrapersonal conflict in the struggle to meet professional expectations as well as performance outcomes. A pitfall in many models is the addition of a case management role without eliminating tasks from a substantive position (Aliotta, 1996; McGettigan, 2003; Reimanis, Cohen, & Redman, 2001).

#### 3.6.3.4 *Competent Staff*

Being professionally competent and demonstrating currency of practice for the case management role has engaged many discussion papers and enriched contemporary dialogue. Professional competence is:

“the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice for the benefit of the individual and community being served” (Epstein & Hundert, 2002, p. 226).

From an Australian perspective, competence for practice is “the combination of skills, knowledge attitudes, values, and abilities that underpin effective performance in a professional/ occupational area” (Australian Nursing and Midwifery Council, 2002, p. 2). Competency is closely aligned to the principles of case management (Aliotta, et al., 1998; Case Management Society of America, 2002; Case Management Society of Australia, 2004), yet untested in the Australian health system. Key stakeholders require organisational commitment to competency based skill development for the role (Gournay & Thornicroft, 2002). Communication, an important competency for health care practice, has been found to be an area of weakness in Case Managers (Petrelli, 2003; Shendell-Falik, 2002), as are the skills of health promotion (Young and Sowell, 1997), disease management (Beyerman, 2001; Cherry, Colliflower, & Tsiperfal, 2000; Cohen & Cesta, 2005; Howe, 2006; Huston, 2001; Reeder, 1999; Strassner, 1996) and adherence to therapeutic boundaries (American Association of Colleges of Nursing, 2003; Malone, Reed, Norbeck, Hindsman, & Knowles, 2004; Peterson, 1992). Gaps evident in Case Manager skill-development programs include: crisis management, problem solving, client education, disease process knowledge and leadership (American Association of Colleges of Nursing, 2003; Gournay & Thornicroft, 2000; Henson & Daniels, 2002; Intagliata, 1982; Strassner, 1996). All these skills are required for a competent Case Manager, yet not evident in many of the studies reported.

Competency in leadership is not only required by the Case Manager, but by the entire healthcare team (Case Management Society of Australia, 2004; Leung, Yau, et al., 2004; Rosen & Teesson, 2001; Tahan, Huber, & Downey, 2006; Thomas, 2008b). When implemented, the right style of leadership can motivate organisational vision and drive the agenda to achieve quality care and positive client outcomes (Cunningham & Whitby, 1997; Hocker & Trofino, 2003; Horner & Boldy, 2006; Kuklierus, et al., 2000).

Effective leadership also works to engage participants in positive change processes (Hocker & Trofino, 2003). Hocker (2003) recommends organisations implement a communication strategy for leadership, since “most nurses are client advocates ..[but]... not all nurses are leaders” (Kuklierus, et al., 2000, p. 119). Leadership is linked to quality care in some studies, since “good leaders tend to produce good care and poor leaders tend to produce poor care” (Cunningham & Whitby, 1997, p. 14).

Competency attributes and skills for case management are, therefore, specific and comprehensive. The above studies reporting these attributes and skills and subsequently aligning these to case management outcomes, reveal the importance of good planning, education for staff involved in Case Management and ongoing monitoring of case management outcomes.

### **3.7 Final Synthesis of Case Management Elements**

A point of discussion is whether the application of the case management elements listed above can be generalised for use in all health sectors, and whether this model of care employs unique elements not seen in other care models. Case management by definition has similar elements to other models of care, however it is the role of a Case Manager to operationalise a caseload, and ensure proficiency and capability of a specific set of skills for delivery and service evaluation, thereby making case management unique. Case management Models were reviewed and no one model clearly demonstrated its suitability for full implementation in the Australian residential aged care sector. While many elements of the more successful models were considered applicable to the Australian residential aged care setting, the models in their entirety would not be able to be supported given their structural requirements, including financing.

Further review of the most important elements was undertaken to develop a comprehensive and aesthetic model, whilst not compromising the value of each of the elements. Through the process of review described in preceding sections, all the elements that were assessed as necessary for an optimal case management model were incorporated into a Collaborative Care Case Management Model (CCCMM) (see Figure 3.1). This Model has been specifically developed for the residential aged care sector in Australia. Each of these elements in this model has been utilised in the study survey development (see Chapter 4).





Figure 3.1: Collaborative Care Case Management Model (CCMM)

### 3.8 Conclusion

This review of the literature revealed case management to be a complex but constructive intervention within a health system. While no one case management model was identified as ideal for use in the Australian residential aged care setting, the insights gained from evaluating existing case management models in other health settings was informative when considering their application to the sector. Key elements of case management identified in the literature provided the foundation for the development of the research instrument used to survey residential aged care Managers regarding case management practices in this setting. Chapter Four outlines the study aims and describes the research methods used to address these issues.

## Chapter 4

### Methods

#### 4.1 Introduction

This Chapter describes the study methods used to address the study aim and objectives. The study setting and population, survey procedure, survey development and pilot testing, administration of the survey, ethical considerations, and data management and analysis, are described in the following sections.

#### 4.2 Study Aim and Objectives

The primary aim of the study was to examine case management in Australian residential aged care facilities, using responses from Facility Managers. The research objectives were to:

- i. Examine the sector, facility and client profiles, and management and operational practices reported by a sample of Facility Managers from the Australian residential aged care sector, and explore associations between these characteristics
- ii. Critique a range of case management models reported in the literature and relevant to the Australian residential aged care sector
- iii. Investigate the elements of case management currently used by Australian residential aged care facilities, and the impact of the case management elements on service delivery, as reported by Facility Managers
- iv. Identify a potential model of case management based on the existing evidence base, that may be adopted in Australian residential aged care facilities.

#### 4.3 Study Design

A cross-sectional comparative design was employed to explore issues faced by residential aged care facilities and case management utilisation in the sector as reported by Facility Managers. A cross-sectional survey of the cohort at a single point in time (Beanland, Schneider, LoBiondo-Wood, & Haber, 1999) was deemed to be the most efficient and effective means to gather relevant data across an entire healthcare sector (Schneider, Whitehead, Elliott, LoBiondo-Wood, & Haber, 2007). While cross sectional designs do not allow for in-depth development of relationships and trends in

data (Elliott & Hayes, 2007), it is appropriate for the study aim. Figure 4.1 illustrates the study stages of the study, conducted over a six year period.

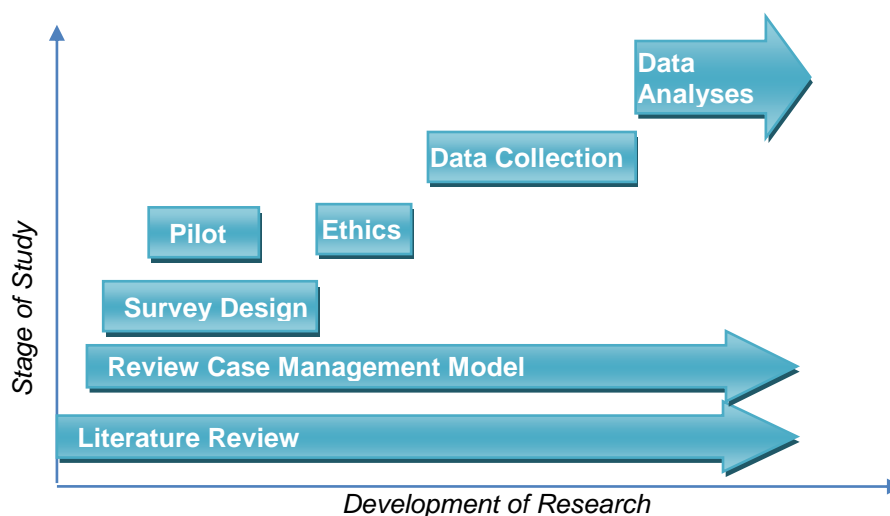


Figure 4.1: Study Components

#### 4.4 Population and Surveying Procedure

All Australian residential aged care facilities were targeted for sampling to address research objectives i and iii. In 2007, 3,046 federally funded facilities were listed on the Department of Health and Ageing database (Commonwealth of Australia, 2007a). This figure was later revised to 2,872 facilities, following release of a more recent Australian Institute of Health and Welfare (2008c, p. 13) database; the difference in figures was primarily due to facility closures, mergers and co-located facilities. The target participants for this study were Managers of these Australian residential aged care facilities. After considering available resources and suitable periods to survey Facility Managers (including peak accreditation periods), the decision was to include all residential aged care facilities across Australia in one mail-out. As a census approach was used to contact the entire cohort, no further sampling techniques were required.

A survey was considered the most appropriate way of collecting data from residential aged care Facility Managers, since they are convenient and cost-effective (Fowler, 2002). However, it was also acknowledged that while mail surveys are effective in obtaining data from a large population (Fowler, 2002), small response rates and poor motivation are likely (Gillham, 2000). Online data collection was considered (Cantrell & Lupinacci, 2007), however the lack of internet access and information technology in many aged care facilities and the non availability of a suitable database of Facility

Managers' e-mail addresses at the time of survey distribution in 2007 precluded this option (Commonwealth of Australia, 2007c).

The survey was distributed to Managers for de-identified responses, to minimise bias in responses and to encourage open and honest disclosure of case management practices within their facilities. This process for anonymous survey returns did however preclude any opportunity for follow-up of non-responders. The mail-out included a cover letter with instructions for survey completion and return (Appendix C), accompanied by a pre-paid self-addressed envelope. All returned surveys were received within a 13-week period following the mail-out.

## **4.5 Survey Instrument**

This section discusses the systematic development, pilot testing and revision of the survey instrument (see Appendix C). The final survey instrument included 24 items located within three sections, employing a range of response techniques.

### 4.5.1 Survey Development

Development of a reliable survey tool was critical for this study design and method. As described in the previous Chapter, a review of many published and unpublished sources of information were assessed to ensure comprehensiveness and rigor when developing the survey, using the guidelines illustrated in Table 3.2 and 3.3, and further identified in literature mapping (Appendix A). An integrative review of case management models, utilising the NICE Guidelines (2006) and Grades of Recommendations, Assessment, Development and Evaluation (GRADE) (Higgins & Green, 2009) was undertaken (See Table 3.4), with a synthesis of concepts across models and related publications completing the review and identifying the key case management elements (see Table 3.12). As noted in the integrative review, no one model was considered entirely suitable for the Australian residential aged care sector, either in structure or in addressing the needs of the study population (see Chapter 3.5.7 and 3.7).

Synthesis of concepts across models and related publications enabled identification of a number of strategic elements (see Table 3.12), to inform the development of the original (Figure 4.2) and later revised (Figure 4.3) *draft* case management model. Further reflection on the draft model occurred during survey development. Subsequent survey tool was informed by the case management literature, and assisted with

developing a suitable case management model for residential aged care facilities that reflected the contextual issues facing the sector. A rigorous and structured survey development process, along with carefully considered wording, remained pivotal to this process.

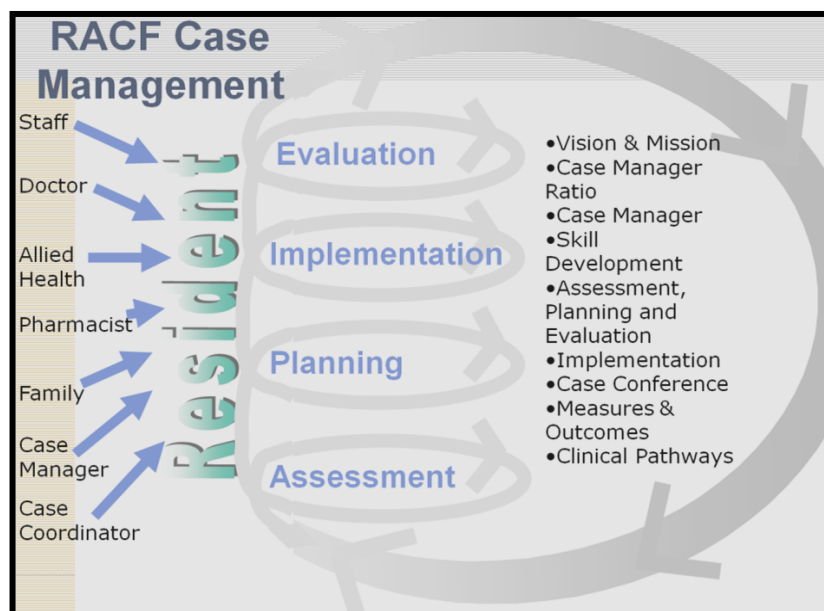


Figure 4.2: Original Draft Case Management Model

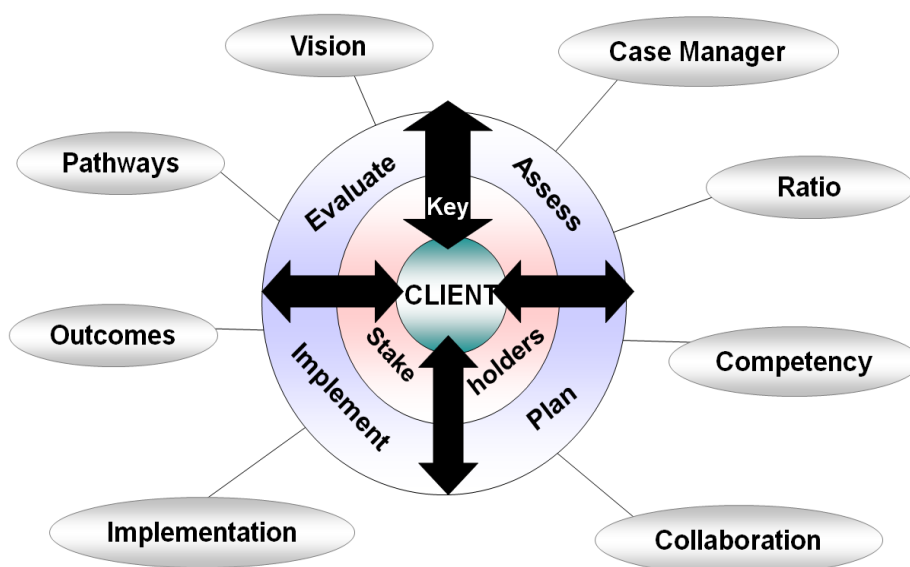


Figure 4.3: Revised Draft Case Management Model

The survey instrument was developed to evaluate case management elements and model structure from the perspective of residential aged care Facility Managers. Critical aspects in survey development identified from the literature were incorporated, including uncomplicated layout, concise wording, appropriate order of items to reflect style of answers, and piloting the survey instrument (Bowling, 2005; DeVaus, 2002; Fowler, 1995). The resulting survey (Appendix C) captured the elements of the *draft* case management model identified in the case management literature (see Table 4.1). Three sections within the survey included: (i) demographics, (ii) general information and (iii) current practice for facilities undertaking case management. Synergies between the survey and the model are also identified in Table 4.1. This proved to be a complicated process because of the variable application of case management by residential aged care Managers, the misuse of terminology and the quest to reduce potential for bias of survey respondents. The demographic section was added after pilot testing identified it as a critical component for comparative data analyses.

Table 4.1: Relationship between Survey Items and Draft Case Management Model

Part	Item Number	Item	Draft Case Management Model		
			Preparation	Implementation	Collaboration
Demographic Information	1	Number of clients	✓		✓
	2	Number of extra service clients	✓		✓
	3	Location of facility			✓
	4	Type of facility			✓
	5	Religious affiliations			✓
	6	Location of facility			✓
	7	Years of accreditation			✓
	8	Clients with specific issues			✓
General Information about the Facility	9a	Participation in case management			
	9b	Planning to improve			
	9c	Organisation' vision statement			
	9d	Staffing budget meets needs		✓	
	9e	Care plans are a funding tool			✓
	9f	Daily care of clients differs			✓
	10	Hours worked per designation.	✓		✓
	11	Hours 1:1 with that client	✓		✓
	12a	Staff workload			✓
	12b	Staff turnover			
	13a	Staff morale			
	13b	Staff teamwork			
	14	Task allocation			
15	Care plans			✓	
16	Case conferences (numbers)				
17	Case conferences (frequency)				
18	Case conferences (personnel)				
19	Skill abilities of staff		✓		
20	Allied health professionals				
Currently Practising	21	Primary person in case management	✓	✓	
	22	Level of education			
	23	Job description		✓	
	24	Ratios and hours worked	✓	✓	

Notes: ✓ Indicated a relevance between the research objective and the *draft* case management model

Prior to piloting, the survey was estimated to take a Facility Manager 40 minutes to complete, as identified in the cover letter to respondents. A variety of item types were included in the survey to inform the study questions (see Table 4.2). For items 18 and 22, respondents were able to select more than one response.

Table 4.2: Design of Survey Instrument

Part	No.	Item	Response Field
<b>Demographic Information</b>	1	Number of clients	Numeric
	2	Number of extra service clients	Numeric
	3	Location of facility	Dichotomous Tick Box
	4	Type of facility	Dichotomous Tick Box
	5	Religious affiliations	Dichotomous Tick Box
	6	Location of facility	State written
	7	Years of accreditation	Tick Box (5)
	8	Clients with specific issues	Numeric
<b>General Information about the Facility</b>	9a	Participation in case management	Likert Scale *
	9b	Planning to improve	Likert Scale *
	9c	Organisation' vision statement	Likert Scale *
	9d	Staffing budget meets needs	Likert Scale *
	9e	Care plans are a funding tool	Likert Scale *
	9f	Daily care of clients differs	Likert Scale *
	10	Hours worked per designation.	Numeric
	11	Hours 1:1 with that client	Numeric
	12a	Staff workload	Likert Scale *
	12b	Staff turnover	Likert Scale *
	13a	Staff morale	Likert Scale *
	13b	Staff teamwork	Likert Scale *
	14	Task allocation	Tick one; Manager, RN, C.W or C.W. (Adv)
	15	Care plans	Multiple Choice (4)
16	Case conferences (numbers)	Multiple Choice (6)	
17	Case conferences (frequency)	Multiple Choice (5)	
18	Case conferences (personnel)	Multiple Choice (9)	
19	Skill abilities of staff	Likert Scale * for the Manager, RN, C.W or C.W. (Adv)	
20	Allied health professionals	Likert Scale *	
<b>Currently Practising</b>	21	Primary Case Manager	Multiple Choice (4)
	22	Level of education	Multiple Choice (7)
	23	Job description	Multiple Choice (2)
	24	Ratios and hours worked	Numeric

Notes: Likert Scale \* = Five point Likert scale indicating very poor/low to very good/high



#### 4.5.2 Pilot Testing

Following initial construction, the survey was pilot tested with a sample of Facility Managers and senior residential aged care nurses to ensure that the most useful and representative data were collected to answer the research objectives. The pilot enabled ambiguities and discrepancies in respondent interpretation to be identified and minimised (DeVaus, 2002; Sekaran, 2003).

A convenience sample of four Facility Managers initially, then 20 RNs working within residential aged care facilities, were enlisted. The RN sample was obtained during three training sessions held on case management for facilities located in Canberra, Newcastle and Sydney. This sample represented small and large scale, high and low care, and regional and metropolitan-based facilities. Participants voluntarily completed the *draft* survey immediately prior to the training session. After completing the survey, respondents were asked for supplementary feedback on the survey (layout, style of questions, length of survey and time taken).

One of the discussions held with both Managers and staff completing the pilot survey was around the inclusion of a definition of case management in the covering letter. As previously identified, the terminology referring to case management has long been misunderstood by many who use it and implementation varies with context and setting (see Chapter 3.2.1) (Aliotta, 1996; Drennan & Goodman, 2004; Intagliata, 1982). Initial discussions with Managers suggested that a definition was neither necessary nor required, however the RN group found the definition useful when completing the pilot. One initial concern was that using a definition may influence or bias participant responses. Following the above pilot feedback, a definition was included in the study cover letter that is endorsed by both the Case Management Society of America (2002, p. 1) and Australia (2004, p. 4). Use of the definition was to ensure uniformity of meaning in survey responses (see Section 4.5.2). Survey items were also modified across all three sections of the survey, following pilot feedback (see Table 4.3).

Table 4.3: Modifications to Survey following Pilot Testing

Part	No.	Item	Survey Modifications			
			Reword	Reorder	Included	Re-classified
Demographic Information	1	Number of clients	✓			
	2	Number of extra service clients			✓	
	3	Location of facility			✓	✓
	4	Type of facility			✓	
	5	Religious affiliations			✓	
	6	Location of facility (State)			✓	
	7	Years of accreditation	✓	✓	✓	
	8	Clients with specific issues			✓	
General Information about the Facility	9a	Participation in CM*	✓			
	9b	Planning to improve	✓			
	9c	Organisation' vision statement	✓			
	9d	Staffing budget meets needs				
	9e	Care plans are a funding tool				
	9f	Daily care of clients differs		✓		
	10	Hours worked per designation.	✓			
	11	Hours 1:1 with that client	✓			
	12a	Staff workload				
	12b	Staff turnover				
	13a	Staff morale				
	13b	Staff teamwork				
	14	Task allocation	✓			
	15	Care plans		✓		
	16	Case conferences (numbers)				
	17	Case conferences (frequency)				
18	Case conferences (personnel)					
CM*	19	Skill abilities of staff	✓			
	20	Allied health professionals				
	21	Primary person in CM*				
	22	Level of education	✓			
	23	Job description				
	24	Ratios and hours worked	✓			✓

CM\* is abbreviated from Case Management  
 ✓ Indicates a change in the survey during pilot testing

In the demographic section, minor changes were made to the wording of items to improve clarity. In the second section items 9a-c, 10, 11, 14 and 19 were re-worded, while 9f and 15 were re-ordered to reduce misinterpretation and enable better flow within the survey. Re-wording also occurred in items 22 and 24 as feedback noted these were confusing to respondents.

#### 4.6 Data Management

Following return of surveys from respondents, data were entered, cleaned and audited. Data from completed surveys were entered into a Microsoft Excel spreadsheet, and then later converted into SPSS (V.17) using the codes listed in Appendix D, for data analyses. Data entry error was minimised by the use of pre-identified fields and the coding spreadsheet in Appendix D. A check for duplication of entry was performed, for

each survey entered. Data cleaning involved “checks for completeness and a check of all variables for out of-range values and logic of values” (Mitchell, Chaboyer, Burmeister, & Foster, 2009, p. 547). A biostatistician supervised data cleaning to ensure techniques and processes were documented and consistent. All empty fields were identified as ‘missing’ or ‘not applicable’ using an identified code, and were considered in all data analyses (Chapman, 2005). While no data were excluded from the study, a random check of 10% of surveys was conducted to assess the accuracy of data entry. Strategic cross-checks were also made to check data, including: numbers of clients against client acuity figures, and number of staff against staffing skill and case portfolios. These cross checks enables a more thorough process for identifying inconsistent data values (Chapman, 2005). Where inconsistencies were identified, subsequent re-checking of the original survey was undertaken and data entry corrected on three occasions. For missing data, in all cases the researcher manually reviewed the original survey for correct data entry and acknowledged the data as missing, or as not applicable. Substitution of missing data was not undertaken.

#### **4.7 Data Analysis**

As noted in Table 4.2, variables ranged from dichotomous to continuous. The tests performed on the data are presented in Table 4.4, and further presented in Table E.1. Continuous variables were presented as means and standard deviations for normally distributed variables, while medians and interquartile ranges were reported for data of non-normal distribution. Frequencies were examined for distribution for interval/ratio level data. Categorical data (e.g. profit status and location) were analysed using the chi-square test. The continuity correction chi-square (CC  $X^2$ ) was reported for the analysis of two by two tables, with one degree of freedom (e.g. religious affiliation versus profit) (Coakes, 2009). While the hierarchy for care staff (Facility Manager, RN, Care Worker (Advanced), Care Worker) is not a true ordinal variable, it does represent a progression of career stages, and was therefore used to examine relationships as appropriate to the study objectives. Linear by linear association chi-square was used to examine relationships between two ordinal variables (e.g. type of staff member who was the primary Case Manager [Manager, RN, Care Worker (Advanced) and Care Worker] versus type of staff member who was undertaking assessments), or between a dichotomous variable and an ordinal variable (Coakes, 2009).

Table 4.4: Explanation of Data Analysis as explained in Methods Chapter

Test	Test Symbol used	Explanation of when test was used	Example of Variables used (data from Facility Managers)	
<b>Continuity Correction chi square</b>	CC $\chi^2$	To examine the significance of the association between two categorical variables each with two categories, in other words a 2 x 2 contingency table.	Religious affiliation No religious affiliation	For profit Not for profit
<b>Linear by linear association chi square</b>	<i>Linear by linear association</i> $\chi^2$	Also known as the Mantel-Haenszel chi-square. Used to examine the significance of the relationship between 2 ordinal variables, or an ordinal and a categorical variable.	Care staff : <ul style="list-style-type: none"> <li>• Facility Manager</li> <li>• Registered Nurse</li> <li>• Adv. Care Worker</li> <li>• Care Worker</li> </ul>	Task Allocation <ul style="list-style-type: none"> <li>• Undertake assessments</li> <li>• Writing care plans</li> <li>• Evaluating care plans</li> <li>• Daily documentation</li> <li>• RCS documentation</li> </ul>
<b>Non parametric Mann Whitney U</b>	M-W-Uz	Also known as the Wilcoxon rank-sum test. Used to compare two independent groups on a continuous variable with significant skew, or on an ordinal variable.	Location <ul style="list-style-type: none"> <li>• Rural</li> <li>• Regional</li> </ul>	Number of Clients in Facility
<b>Kruskal Wallis Test</b>	K-W $\chi^2$	Comparison of independent groups with more than two categories on a skewed continuous variable or ordinal variable. This is an extension of the Mann-Whitney test for when there are three or more groups.	Accreditation years <ul style="list-style-type: none"> <li>• 1 year</li> <li>• 2 years</li> <li>• 3 years</li> </ul>	5 point likert scale (e.g.- degree to which actual care differed from care plan, rated from strongly agree to strongly disagree)
<b>Wilcoxon Matched Pairs Signed Rank Test</b>	Wilcoxon Signed Ranks z	To examine the relationship between paired data which are significantly skewed, or where the variables are ordinal. .	RN Staff knowledge of clinical care (5 point likert scale from very good to very poor)	RN Staff ability to administer medications (5 point likert scale from very good to very poor)
<b>Friedman test</b>	Friedman $\chi^2$	To examine the relationship between related samples. More specifically, where there are more than two repeated observations such as when individuals are asked to rate the ability of four different types of staff member.	Managers perceptions of levels of staff skill and knowledge (5 point likert scale from very good to very poor) for each of four staff classifications (Manager, RN, Cert III, Cert IV)	

Non-parametric Mann Whitney  $U$  analyses (M-W  $U$  z) enabled comparisons between two groups against a skewed continuous variable, or an ordinal variable (e.g.: location [rural versus regional] and facility size) (Coakes, 2009). The Kruskal Wallis test (K-W  $X^2$ ) enabled comparison of groups with more than two categories on a skewed continuous variable, or an ordinal variable (e.g. accreditation years [three groups] versus the degree to which actual care was perceived to differ from the care plan [rated on a five point Likert scale]) (Coakes, 2009).

The Wilcoxon Matched Pairs Signed-Rank Test (Wilcoxon Signed Ranks z) was used to compare two-related samples on skewed, or ordinal data (e.g.: Care Worker (Advanced) staffs' knowledge of clinical care versus Care Worker (Advanced) staff ability to administer medication) (Coakes, 2009). Friedman tests (Friedman  $X^2$ ) was utilised where more than two related samples were compared (e.g.: comparing mean levels of staff skill and knowledge for each of the four staff classifications) (Coakes, 2009).

Given the design and nature of the study and large numbers of variables where significance could be reported if using the conventional level of 0.05, statistical advice was provided to set a more conservative statistically significant level, at a  $p$  value of less than 0.001. This level of significance has been used in a number of studies nationally and internationally (Australian Institute of Health and Welfare, 2009b; Hesse, et al., 2009; Mann, Kopke, Haaster, Pitkala, & Meyer, 2009; Snowdon & Fleming, 2008; Temkin-Greener, Zheng, Katz, Zhao, & Mukamel, 2009; Wong & Miller, 2008), and provided greater credibility to the analyses and major findings presented. To improve the assimilation of data a number of strategies were implemented; Likert scales were frequently presented with collapsed categories (e.g. strongly agree/agree and very high/high), and for client diagnostic mix, where there was a difference in total clients, facilities were examined for any difference between high and low care clients (e.g. differences in number of clients with dementia) to profile the client and facility more comprehensively. Only statistically significant results (or trends towards significance) at the 0.001 level are presented in Chapter 5.

For costing purposes across a few areas of data analysis, the Residential Classification Scale and staff classification pay scales were used. A comparison of financial viability was performed between parameters (e.g. rural versus regional) using the following assumptions: a high care client was a RCS category two (\$107.71/day), and a low care

client was a RCS category six (\$32.92/day) (based on 2007 figures). Rudimentary operational staff costing was employed, using staff pay scales as indicated in Table 4.5.

*Table 4.5: Hourly Staffing Rates of Pay*

<b>Classification of Staff</b>	<b>Hourly Rate</b>
Care Worker (Grade 5)	\$20.32
Endorsed EN (Thereafter)	\$20.86
RN (Thereafter)	\$30.25
Facility Manager	\$37.47

*NSW Enterprise Agreement (2007)*

Data analyses were based on the research objectives, as presented below in Table 4.6.

Table 4.6: Survey Item Links to Research objectives

Part	Number	Item	Research Objectives		
			Sector, Facility and Client Profiles	Elements of Case Management	Case Management Model
Demographic Information	1	Number of clients	✓	✓	✓
	2	Number of extra service clients	✓	✓	✓
	3	Location of facility	✓	✓	
	4	Type of facility	✓	✓	
	5	Religious affiliations	✓	✓	✓
	6	Location of facility	✓	✓	
	7	Years of accreditation	✓	✓	
	8	Clients with specific issues	✓	✓	
General Information about the Facility	9a	Participation in case management		✓	
	9b	Planning to improve		✓	
	9c	Organisation' vision statement		✓	✓
	9d	Staffing budget meets needs	✓	✓	✓
	9e	Care plans are a funding tool		✓	
	9f	Daily care of clients differs	✓	✓	
	10	Hours worked per designation	✓	✓	
	11	Hours 1:1 with that client	✓	✓	
	12a	Staff workload	✓	✓	✓
	12b	Staff turnover	✓	✓	✓
	13a	Staff morale	✓	✓	✓
	13b	Staff teamwork	✓	✓	✓
	14	Task allocation	✓	✓	
	15	Care plans		✓	✓
16	Case conferences (numbers)		✓	✓	
17	Case conferences (frequency)		✓	✓	
18	Case conferences (personnel)		✓	✓	
19	Skill & knowledge of staff	✓	✓	✓	
20	Health professionals	✓	✓		
Currently Practising	21	Primary person in case management		✓	
	22	Level of education		✓	
	23	Job description		✓	✓
	24	Ratios and hours worked		✓	✓

Notes: ✓ Indicates a relevance between the research objective and survey question

#### **4.8 Ethical Issues**

Research ethics approval procedures were completed prior to survey distribution. Approval was granted by the Human Research Ethics Committee at the University of Western Sydney (HREC 06/116), the original university of student candidature and where this study commenced. As noted previously, a cover letter was sent to all Facility Managers of residential aged care facilities asking for their voluntary participation in the survey (see Appendix C). Consent was implied through return of a completed survey. All respondents (Facility Managers) were assumed to be over the age of 18 and capable of providing implied informed consent through survey completion and return. De-identification of respondents was assured, as survey returns were anonymous, with no mechanism available for tracing individual facilities. Participant and aged care facility privacy was maintained and acknowledgement of any culturally significant issues was carefully considered when presenting data. Data were kept confidential and secure as per National Health and Medical Research Council and Australian Research Council guidelines (Australian Government, 2007).

#### **4.9 Conclusion**

A cross sectional comparative design was used to administer the study survey. The survey was developed to identify the issues from the residential aged care sector and to evaluate the implementation of case management approaches in residential aged care facilities. Survey development was informed by an integrative review of the case management literature to identify key elements of case management. The survey was pilot tested with a convenience sample of residential aged Facility Managers and RNs. The survey was distributed to Facility Managers across all Australian federally funded residential aged care services, and 474 completed responses were returned; a response rate of 17%. The analysis of results and presentation of trends is presented in Chapter Five.



## Chapter 5

### Results

#### 5.1 Introduction

The cross sectional survey results are presented in this Chapter. Opinions and views of residential aged care Facility Managers are examined relating to issues associated with sector, facility, and client populations. Survey response rates and data credibility are initially discussed. The remainder of the results are reported in relation to the stated research objectives.

#### 5.2 Response Rates and Generalisation

The sample was initially examined against Australian Institute of Health and Welfare (2008e) residential aged care facility data, with all data then presented. A census was conducted of all 2,872 aged care facilities in Australia (Australian Institute of Health and Welfare, 2008e, p. 12), and completed responses were received from 474 (17%) facilities. These responses represented 27,015 clients (18% of the total 152,178 clients identified by Australian Institute of Health and Welfare (2008e, p. 45) (see Table 5.1). This relatively small, non-representative response rate was identified as a limitation of the study (Chapter 6.3). Table 5.1 also presents the demographic characteristics from the Australian Institute of Health and Welfare (2008e) data, to enable comparisons between the sample and the population. While the response rate was less than expected, it did provide a large database for analysis.

Of the surveys received, 77% ( $n=367$ ) had no data missing. For the 20,382 data elements expected from all respondents (excludes items 8, 18-24 that were not relevant to all respondents), less than two percent ( $n=336$ ) were missing. Valid responses within each survey item are presented in Appendix F. Data are also presented in tables in Appendix F where a significant association, or a trend towards an association, was identified between the demographic characteristic and the practice element. Statistically significant data are in bold font.

Table 5.1: Data Extrapolation

Item	AIHW (2008e) <i>n</i> (%)	Surveyed <i>n</i> (%)	Not Surveyed <i>n</i> (%)
Number of facilities	2,872 (p.12)	474 (16.5)	2,398 (83.5)
Number of clients	152,178 (p.45)	27,015 (17.8)	125,163 (82.2)
High care clients	106,156 (70.1)	17,026 (63.0)	89,130 (71.2)
Low care clients	45,192 (29.9) (p.47)	9,989 (37.0)	35,203 (28.1)
Facilities per State			
NSW	914 (31.8)	181 (38.2)	733 (30.6)
Vic	800 (27.9)	115 (24.3)	685 (28.6)
Qld	489 (17.0)	69 (14.6)	17.5 (420)
SA	289 (10.1)	45 (9.5)	218 (9.1)
WA	254 (8.8)	36 (7.6)	244 (10.2)
Tas	88 (3.1)	17 (3.6)	71 (3.0)
NT	15 (0.5)	6 (1.3)	9 (0.4)
ACT	23 (0.8) (p.15)	5 (1.1)	18 (0.8)
Beds per facility			
0-60 beds per facility	1,862 (64.8)	303 (64.3)	1,571 (64.9)
61+ beds per facility	1,010 (35.2) (p.13)	168 (35.7)	849 (35.1)
Type of facility			
For profit	773 (26.9)	119 (25.2)	654 (27.3)
Not for profit	2,099 (73.1) (p.13)	353 (74.8) * 2 Missing	1,746 (72.8)

Of note in Table 5.1, a statistically significantly larger proportion of facilities were surveyed in the jurisdiction with the fewest facilities; i.e. 40% ( $n=6/15$ ) in the Northern Territory (NT), while a smaller proportion of facilities were surveyed in Queensland (Qld), with only a 13% ( $n=63/439$ ) response to the survey (linear by linear association  $X^2=4.85$ ,  $df=1$ ,  $p=0.028$ ). Due to the small representation of residential aged care facilities in the Australian Capital Territory (ACT), Northern Territory (NT) and Tasmania (Tas.), and the correspondingly small response rates across these states, no statistical generalisations were able to be made. Linearity was observed between states, based on largest to smallest numbers of facilities by states. While a more traditional one sample chi-squared analysis was considered for the generalisation analyses, this was not pursued as the survey population was deemed to be a sub-set of the total population, rather than representative as advised by biostatistician. Despite

attempts to undertake statistical generalisation analyses on data presented in Table 5.1 nil were identified, aside from observed linearity.

### **5.3 Examination of Sector, Facility and Client profiles**

This section addresses **study objective i**, presenting the survey data examining sector, facility and client profiles of the respondent Australian residential aged care facilities.

#### 5.3.1 Sector Profile

The sector is presented in subsections related to geographical location, affiliations and not for profit status, as well as years of accreditation status. This overview enables a specific review of broad issues impacting on the residential aged care sector.

##### *5.3.1.1 Location*

Respondents were asked to identify facility location as rural or regional. This grouping was advised at the time of survey development by an unidentified Australian Bureau of Statistics representative as being appropriate due a period of uncertainty on categorisation. Regional included metropolitan facilities. Rural facilities accounted for more than one third of all Australian residential aged care facilities in the survey (35%,  $n= 165$  (Table F.1)). Rural and regional facilities differed significantly in terms of total client population ( $p<0.001$ ; see Table 5.2) and in average number of high care clients ( $p<0.001$ ), but not in the average number of low care clients between rural and regional facilities ( $p=0.085$ ). There were also significant associations between location (rural or regional) and whether or not the facility was 'for profit' ( $p<0.001$ ), or was religious ( $p<0.001$ ) (see Table 5.2).

Table 5.2: Demographic Characteristics by Location

Item	Rural	Regional	Rural	Regional
	Mean (SD) Range	Mean (SD) Range	n (%) n=165	n (%) n=309
Total client number <i>M-W U z = -8.242</i>	<b>42.2 (30.6)</b> 5 - 190	<b>65.3 (34.9)</b> 10 - 212		
High care clients <i>M-W U z = -6.343</i>	<b>25.4 (23.0)</b> 0 - 121	<b>41.8 (29.7)</b> 0 - 152		
Low care clients <i>M-W U z = -1.722</i>	16.8 (20.4) 0 - 119	23.5 (26.3) 0 - 150		
For Profit			<b>22 (13.4)</b>	<b>97 (31.5)</b>
Not For Profit		<i>CC X<sup>2</sup> = 17.604, df=1</i>	<b>142 (86.6)</b>	<b>211 (68.5)</b>
Religious Affiliation			<b>39 (23.8)</b>	<b>134 (43.4)</b>
No Religious Affiliation		<i>CC X<sup>2</sup> = 16.881, df=1</i>	<b>125 (76.2)</b>	<b>175 (56.6)</b>
Staff Task Analysis				
Daily Documentation		<i>X<sup>2</sup> = 22.17, df=3</i>		
Manager			<b>18 (10.9)</b>	<b>28 (9.1)</b>
RN			<b>50 (30.3)</b>	<b>151 (48.9)</b>
Care Worker (Advanced) staff			<b>39 (23.6)</b>	<b>32 (10.4)</b>
Care Worker staff			<b>58 (35.2)</b>	<b>98 (31.7)</b>
Skill and Knowledge				
Documentation Capability				
Care Worker staff		<i>M-W U z = -3.43</i>		
Very Good + Good			<b>67 (46.5)</b>	<b>79 (28.2)</b>
Satisfactory			<b>52 (36.1)</b>	<b>134 (47.9)</b>
Very Poor + Poor			<b>25 (17.4)</b>	<b>67 (23.9)</b>
Health Professional Attendance				
Physiotherapist		<i>M-W U z = -3.991</i>		
Very Good + Good			<b>91 (61.5)</b>	<b>231 (79.4)</b>
Satisfactory			<b>41 (27.7)</b>	<b>44 (15.1)</b>
Very Poor + Poor			<b>16 (10.8)</b>	<b>16 (5.5)</b>
Podiatrist		<i>M-W U z = -3.623</i>		
Very Good + Good			<b>85 (55.6)</b>	<b>220 (71.9)</b>
Satisfactory			<b>49 (32.0)</b>	<b>68 (22.2)</b>
Very Poor + Poor			<b>19 (12.4)</b>	<b>18 (5.9)</b>

Based on the information collected on the day of data collection the majority of care hours was utilised by Care Workers (Percentage of Care Hours for a day; Manager 7%, RN 18%, Care Worker (Adv.) 18%, Care Worker 57%; Table F.2). An association was evident between location (rural or regional facility) and the type of staff member who completed daily documentation ( $p < 0.001$ ; see Table 5.2). Almost half of the RNs in regional facilities completed the daily documentation of clients' needs, compared to less than a third in rural facilities. Staff skill and knowledge capabilities across almost

all areas assessed were similar between locations, with the exception of client documentation. Facility Managers' perceptions of Care Worker abilities to document client information was lower in regional facilities (28.2% compared to 46.5% for rural facilities;  $p=0.001$ ; see Table 5.2). Despite this, the proportion of Care Workers undertaking daily documentation was similar for rural and regional facilities (35.2% and 31.7% respectively; see Table 5.2).

Facility Managers also perceived no differences in the attendance patterns of Medical Practitioners and Pharmacists between rural and regional facilities. Conversely, Physiotherapists ( $p<0.001$ ) and Podiatrists ( $p<0.001$ ) were reported by Facility Managers to have significantly lower attendance patterns in rural facilities (See Table 5.2).

Facilities located in rural locations were smaller than metropolitan/ regional facilities in that four out of five facilities have 60 or less beds (64%,  $n= 303$  (Table F.1)).

#### *5.3.1.2 Extra Service*

The sample represented one quarter (25%,  $n=18/73$ , Table 5.1) of Australia's extra service facility population (Commonwealth of Australia, 2007c) of which a maximum of 15% is allocated (Commonwealth of Australia, 2006). Extra service facilities (see glossary) were larger in overall size ( $p=0.001$ ), with statistically significantly higher numbers of high-care clients ( $p<0.001$ ), compared with facilities with no extra service clients (see Table 5.3). Extra service facilities were more likely to be representative of 'for profit' facilities ( $p<0.001$ ; see Table 5.3), with 78% of extra service facilities compared to 23% of non-extra service facilities. 'Extra service' facilities utilised significantly more RN hours per day than 'non-extra service' facilities ( $p<0.001$ ) and overall provided more care staffing hours ( $p=0.002$ ) (see Table 5.3).

Table 5.3: Demographic Characteristics by Level of Services Offered

Item		Extra Service Mean (SD) range n=18	No-Extra Service Mean (SD) range n=452
<i>n</i> *			
Total client number		<b>86.1 (50.4)</b> <b>36-200</b>	<b>61.3 (35.6)</b> <b>8-190</b>
	<i>M-W U z = -3.442</i>		
High care clients		<b>64.5 (27.9)</b> <b>36-145</b>	<b>41.9 (29.8)</b> <b>0-152</b>
	<i>M-W U z = -3.543</i>		
Low care clients		21.6 (43.6) 0-150	19.4 (24.5) 0-135
Care Staffing Hours/Day			
Manager		10.6 (6.9) 8-33	9.4 (2.7) 4-32
RNs	<i>M-W U z = -3.760</i>	<b>40.2 (21.2)</b> <b>9-93</b>	<b>26.4 (16.4)</b> <b>2-93</b>
Care Worker (Advanced) staff		30.8 (29.3) 8-100	24.1 (20.9) 2-120
Care Worker staff		92.8 (82.0) 26-313	89.6 (72.8) 5-439
Total On The Floor Hours (RN + C.W. + C.W. (Adv))	<i>M-W U z = -3.063</i>	<b>174.5 (97.5)</b> <b>67-448</b>	<b>149.5 (88.4)</b> <b>29-537</b>
For Profit		<b>14 (77.8)</b>	<b>105 (23.2)</b>
Not For Profit	<i>CC X<sup>2</sup> = 24.43, df=1</i>	<b>4 (22.2)</b>	<b>347 (76.8)</b>

\* n=2 missing information on extra service clients

### 5.3.1.3 Religious Affiliation

Two thirds of residential aged care facilities had no religious affiliations (63%, *n*= 300 (Table F.1)). Facilities with religious affiliations had significantly fewer high care clients ( $p < 0.001$ ) and fewer extra service clients ( $p < 0.001$ ; see Table 5.4). This was also reflected in facilities with religious affiliations using significantly less RN hours per day ( $p < 0.001$ ; see Table 5.4), and overall significantly less 'on the floor' care staff hours per day ( $p = 0.002$ ; see Table 5.4), compared to facilities with no religious affiliations. A positive association was clear between facilities that were 'not for profit' and a religious affiliation ( $p < 0.001$ ; see Table 5.4).

Table 5.4: Demographic Characteristics by Religious Affiliation

Item	Religious Affiliation	No Religious Affiliation
<i>n</i> *		
Total client number	68.5 (38.1) 10-200	59.4 (35.8) 8-190
Total high care clients	<b>44.0 (28.4)</b> <b>0-141</b>	<b>42.5 (30.9)</b> <b>0-152</b>
	<i>M-W U z = -3.543</i>	
Total low care clients	24.6 (27.3) 0-150	16.9 (24.4) 0-135
Extra service high care clients	<b>0.1 (1.1)</b> <b>0-10</b>	<b>2.2 (10.9)</b> <b>0-66</b>
Extra service low care clients	<b>0.2 (1.1)</b> <b>0-10</b>	<b>0.3 (2.5)</b> <b>0-27</b>
	<i>M-W U z = -21.697</i>	
Care staffing hours/day		
Manager	<b>9.4 (2.4)</b> <b>4-19</b>	<b>9.5 (3.4)</b> <b>4-33</b>
RNs	<b>26.1 (18.3)</b> <b>2-93</b>	<b>27.6 (16.1)</b> <b>2-93</b>
	<i>M-W U z = -3.760</i>	
Care Worker (Advanced)	<b>22.8 (22.5)</b> <b>5-120</b>	<b>25.3 (20.8)</b> <b>2-120</b>
Care Worker	<b>88.3 (63.7)</b> <b>8-299</b>	<b>90.5 (77.7)</b> <b>5-439</b>
Total on the floor Hrs (RN+ C.W. + C.W. (Adv))	<b>146.6 (87.9)</b> <b>34-399</b>	<b>152.9 (89.5)</b> <b>29-537</b>
	<i>M-W U z = -3.063</i>	
Facility size		
1-60 clients	<b>104 (60.5)</b>	<b>199 (66.6)</b>
>60 clients	<b>68 (39.5)</b>	<b>100 (33.4)</b>
	<i>CC X<sup>2</sup> = 20.078, df=1</i>	
For profit	<b>10 (5.8)</b>	<b>109 (36.5)</b>
Not for profit	<b>163 (94.2)</b>	<b>190 (63.5)</b>
	<i>CC X<sup>2</sup> = 53.073, df=1</i>	

\* *n*=1 missing information on religious affiliation

#### 5.3.1.4 Profit Status

One quarter of facilities were representative of 'for profit' organisations (25%, *n*= 119 (Table F.1)) which is similar to AIHW (2008e, p. 13) data indicating 27%. 'For profit' facilities are characteristically distinct from 'not for profit' facilities in a number of ways, with significantly more high care (*p*<0.001) and less low care (*p*<0.001) clients, both non-extra service clients (*p*<0.001) and extra-service clients (*p*<0.001), and larger facilities (*p*<0.001; see Table 5.5).

Table 5.5: Demographic Characteristics by Profit Status

Item		For Profit Mean (SD) range <i>n</i> =119	Not For Profit Mean (SD) range <i>n</i> =353
<i>n</i> *			
Total client number		<b>71.8 (33.9)</b> <b>18-190</b>	<b>59.1 (37.3)</b> <b>8-200</b>
	<i>M-W U z</i> = -3.760		
Total high care clients		<b>57.2 (32.0)</b> <b>0-152</b>	<b>37.8 (27.6)</b> <b>0-141</b>
	<i>M-W U z</i> = -7.407		
Total low care clients		<b>14.6 (23.2)</b> <b>0-105</b>	<b>21.4 (26.3)</b> <b>0-150</b>
	<i>M-W U z</i> = -3.728		
Extra service clients			
High care clients	<i>M-W U z</i> = -5.264	<b>5.2 (16.6)</b> <b>0-66</b>	<b>0.2 (1.6)</b> <b>0-19</b>
Low care clients		<b>0.7 (4.0)</b> <b>0-27</b>	<b>0.1 (0.6)</b> <b>0-10</b>
Client Acuity			
Dementia Diagnosis			
High care clients		<b>34.9 (22.5)</b> <b>0-86</b>	<b>22.0 (20.5)</b> <b>0-120</b>
	<i>M-W U z</i> = -7.066		
Low care clients		<b>5.4 (11.3)</b> <b>0-60</b>	<b>6.4 (11.7)</b> <b>0-90</b>
	<i>M-W U z</i> = -2.856		
Depression Diagnosis			
High care clients		<b>14.8 (12.9)</b> <b>0-45</b>	<b>9.3 (11.4)</b> <b>0-52</b>
	<i>M-W U z</i> = -5.465		
Low care clients		<b>3.2 (6.2)</b> <b>0-30</b>	<b>4.3 (6.8)</b> <b>0-32</b>
	<i>M-W U z</i> = -2.716		
Incontinent or episodes of incontinence			
High care clients		<b>46.7 (29.9)</b> <b>0-150</b>	<b>29.4 (24.7)</b> <b>0-130</b>
	<i>M-W U z</i> = -7.457		
Low care clients		<b>5.2 (13.4)</b> <b>0-85</b>	<b>7.5 (12.1)</b> <b>0-79</b>
	<i>M-W U z</i> = -3.831		
Demonstrates aggressive behaviours			
High care clients		<b>13.4 (17.1)</b> <b>0-76</b>	<b>8.1 (12.9)</b> <b>0-120</b>
	<i>M-W U z</i> = -3.918		
Low care clients		<b>1.1 (3.2)</b> <b>0-20</b>	<b>1.7 (3.5)</b> <b>0-26</b>
	<i>M-W U z</i> = -2.958		
Receiving palliative care interventions			
High care clients		<b>1.0 (3.8)</b> <b>0-20</b>	<b>4.6 (13.8)</b> <b>0-140</b>
	<i>M-W U z</i> = -4.378		
Low care clients		<b>0.3 (1.1)</b> <b>0-7</b>	<b>0.3 (0.8)</b> <b>0-5</b>

\* *n*=2 missing information on profit status



Table 5.5: Demographic Characteristics by Profit Status (2 of 2 pages)

<i>n</i> *	Item	For Profit <i>n</i> * (%)	Not For Profit <i>n</i> * (%)
	Care Staffing Hours/Day		
	Manager	10.0 (4.4) 8-33	9.2 (2.4) 4-24
	RNs	<b>30.7 (18.1)</b> <b>2-93</b>	<b>25.8 (16.2)</b> <b>2-93</b>
	<i>M-W U z = -4.820</i>		
	Care Worker (Advanced) staff	18.5 (14.4) 2-100	26.6 (23.1) 2-120
	Care Worker staff	<b>120.4 (79.7)</b> <b>5-400</b>	<b>78.6 (67.4)</b> <b>5-439</b>
	<i>M-W U z = -5.652</i>		
	Total on the floor Hours (RN+ C.W. (Adv) + C.W.)	<b>179.6 (96.2)</b> <b>29-484</b>	<b>140.2 (83.8)</b> <b>34-537</b>
	<i>M-W U z = -5.088</i>		
	Facility Size		
	1-60 Clients	<b>56 (47.1)</b>	<b>247 (70.4)</b>
	>60 Clients	<b>63 (52.9)</b>	<b>104 (29.4)</b>
	<i>CC X<sup>2</sup> = 20.078, df=1</i>		
	Tasks and Activities		
	Daily Documentation		
	Manager	<b>10 (8.4)</b>	<b>36 (10.2)</b>
	RN	<b>72 (60.5)</b>	<b>127 (36.0)</b>
	Care Worker (Advanced) staff	<b>13 (10.9)</b>	<b>58 (16.4)</b>
	Care Worker staff	<b>24 (20.2)</b>	<b>132 (37.4)</b>
	<i>X<sup>2</sup> = 12.286, df=1</i>		
	Skill and Knowledge		
	Assessment of the Elderly		
	Care Worker staff		
	Very Good + Good	<b>32 (20.5)</b>	<b>56 (31.1)</b>
	Satisfactory	<b>32 (50.9)</b>	<b>159 (51.0)</b>
	Very Poor + Poor	<b>23 (28.6)</b>	<b>97 (17.9)</b>
	<i>M-W U z = -2.869</i>		
	Documentation Capability		
	Care Worker staff		
	Very Good + Good	<b>32 (20.8)</b>	<b>60 (38.6)</b>
	Satisfactory	<b>52 (49.1)</b>	<b>134 (42.4)</b>
	Very Poor + Poor	<b>32 (30.2)</b>	<b>60 (19.0)</b>
	<i>M-W U z = -3.433</i>		

\* *n*=2 missing information on profit status

The 'for profit' facilities therefore had more high care clients with dementia ( $p < 0.001$ ), depression ( $p < 0.001$ ), incontinence ( $p < 0.001$ ) and episodes of aggression ( $p < 0.001$ ) compared with 'not for profit' facilities (see Table 5.5). Conversely 'not for profit' facilities had more high care clients receiving palliative care interventions ( $p < 0.001$ ), more low care clients with dementia ( $p = 0.004$ ), depression ( $p = 0.007$ ), incontinence ( $p < 0.001$ ) and episodes of aggression ( $p = 0.003$ ), compared with 'for profit' facilities (see Table 5.5).

'For profit' facilities had staff with higher qualifications, RNs ( $p < 0.001$ ) and Care Workers ( $p < 0.001$ ), and more care staffing hours per day, compared with staffing in 'not for profit' facilities. This indicates an overall higher total of care staff hours per day ( $p < 0.001$ ) in 'for profit' facilities. Care Worker staff in 'not for profit' facilities were considered by Managers as being significantly better at undertaking client assessments ( $p = 0.004$ ; see Table 5.5), and documentation ( $p = 0.001$ ; see Table 5.5), compared to Managers in 'for profit' facilities.

#### *5.3.1.5 Years of Accreditation*

A large majority of facilities were accredited by the Australian Government for the full three-year period (93%;  $n = 440$  (Table F.1)) at the time of the survey. With the scarcity of published research on aged care accreditation, it was decided to analyse these data despite the low number of facilities with less than three years' accreditation. Since the process of accreditation is dynamic, caution is required when interpreting these data. Depending on the years of accreditation a facility received, there was a significant difference in the degree to which Managers perceived actual care being aligned with documented care plans ( $p = 0.003$ ; see Table 5.6).

Table 5.6: Demographic Characteristics by Years of Accreditation

Item	1 Year Accreditation <i>n</i> * (%) <i>n</i> =15	2 Years Accreditation <i>n</i> * (%) <i>n</i> =19	3 Years Accreditation <i>n</i> * (%) <i>n</i> =440
<i>n</i> *			
Actual daily care differs from care plan <i>K-W X</i> <sup>2</sup> = 9.018, <i>df</i> =1			
Strongly Agree + Agree	5 (33.3)	7 (43.8)	71 (16.4)
Undecided	0 (0.0)	1 (6.3)	20 (4.6)
Strongly Disagree + Disagree	10 (66.7)	8 (50.0)	342 (79.0)
Staff Morale <i>K-W X</i> <sup>2</sup> = 13.977, <i>df</i> =2			
Very Good + Good	6 (40.0)	7 (41.2)	311 (70.8)
OK	7 (46.7)	7 (41.2)	108 (24.6)
Very Poor + Poor	2 (13.3)	3 (17.6)	20 (4.6)
Health Professionals Attendance			
Medical Practitioner <i>K-W X</i> <sup>2</sup> = 11.769, <i>df</i> =2			
Very Good + Good	6 (40.0)	6 (33.3)	289 (65.8)
Satisfactory	7 (46.7)	7 (38.9)	103 (23.5)
Very Poor + Poor	2 (13.3)	5 (27.8)	47 (10.7)
	<i>mean (SD)</i> <i>Range</i>	<i>mean (SD)</i> <i>Range</i>	<i>mean (SD)</i> <i>Range</i>
One-on-one time (hrs) <i>K-W X</i> <sup>2</sup> = 13.066, <i>df</i> =2			
Manager	0.1 (0.1) 0.0-0.3	0.0 (0.1) 0.0-0.3	0.2 (0.2) 0-1.1
RN	0.3 (0.4) 0.0-1.1	0.3 (0.2) 0.0-0.7	0.4 (0.5) 0.0-3.0
Care Worker (Advanced) staff	0.2 (0.2) 0.0-0.5	0.3 (0.3) 0.0-1.0	0.5 (0.5) 0.0-3.5
Care Worker staff <i>K-W X</i> <sup>2</sup> = 10.995, <i>df</i> =2	0.6 (0.5) 0.1-1.5	0.6 (0.6) 0.1-1.8	1.0 (0.8) 0.0-5.5

\* *n*=10 missing information on accreditation status

While Managers' estimations' of one-on-one time for care staff with clients appears to be over-stated (discussed further in Chapter 6.3), the data clearly highlighted that greater years of accreditation status (i.e. three as opposed to one year status), was positively associated with staff time spent with clients (Care Worker one-on-one time; *p*=0.004, RN plus Care Worker and Care Worker (Advanced) one-on-one time; *p*=0.001; see Table 5.6).

As well, staff morale was reported to increase as the number of years of accreditation increased ( $p=0.001$ ), and Medical Practitioners attended more regularly in facilities that had three years accreditation ( $p=0.003$ ; see Table 5.6).

### 5.3.2 Facility Profile

While each facility had specific client and community needs that dictated the style and level of care, given the nature of this cross sectional study it is important to present data in relation to some of the many challenges facing the facilities; namely workforce planning, capability and Manager workload.

#### *5.3.2.1 Workforce Planning*

On average, residential aged care facilities had 25 hours/day coverage by RNs, and 24.5 hours/day by Care Workers (Advanced) (see Table F.2). However, 18% ( $n=390/474$ ) of facilities did not have RN coverage and 38% ( $n=295/474$ ) had no Care Workers (Advanced) present. (See Table F.2).

The staffing profile and work hours of an average residential aged care facility (with 57 clients (Table F.1)) per day, based on the data collected was; Facility Manager: 9 hours; Registered Nurses: 25 hours; Advanced Care Workers: 26 hours; Care Workers; 81 hours). More than half of all care hours were undertaken by staff with a Care Worker qualifications (58%;  $n= 80.7\text{hrs/day}$  (Table F.2)). Workload was rated as generally high (68%,  $n= 322$  (Table F.2)); turnover low (61%,  $n= 283$  (Table F.2)); with staff morale (69%,  $n= 324$  (Table F.2)) and teamwork high (72%,  $n=339$  (Table F.2)).

Where Facility Managers reported clients' needs were met through the staffing allocation, staff turnover ( $p<0.001$ ) and workload ( $p<0.001$ ) were reduced, and staff morale ( $p<0.001$ ) and teamwork ( $p=0.003$ ) was increased (see Table 5.7). Medical Practitioners were also more likely to attend more frequently ( $p<0.001$ ) and were considered more effective ( $p<0.001$ ) in meeting clients' needs (see Table 5.7). This was also the case for Managers' perceptions of the Pharmacist (Attendance;  $p=0.005$ , Effectiveness;  $p=0.001$ ), Physiotherapist (Attendance;  $p<0.001$ , Effectiveness;  $p=0.001$ ), and Podiatrist (Attendance;  $p<0.001$ , Effectiveness;  $p=0.001$ ) services (see Table 5.7).

Table 5.7: Staffing Budget Meeting Needs of Clients

Item	Strongly Agree + Agree <i>n</i> =250 <i>n</i> (%)	Undecided <i>n</i> =57 <i>n</i> (%)	Strongly Disagree + Disagree <i>n</i> =153 <i>n</i> (%)
<i>n</i> *			
Accreditation <i>K-W X<sup>2</sup> =13.417, df=2</i>			
1 Years Accreditation	<b>3 (1.2)</b>	<b>5 (8.8)</b>	<b>6 (3.9)</b>
2 Years Accreditation	<b>8 (3.2)</b>	<b>5 (8.8)</b>	<b>3 (2.0)</b>
3 Years Accreditation	<b>239 (95.6)</b>	<b>47 (82.5)</b>	<b>144 (94.1)</b>
Actual care delivered as per care plan <i>K-W X<sup>2</sup> =11.237, df=2</i>			
Strongly agree + agree	<b>34 (13.7)</b>	<b>12 (21.1)</b>	<b>36 (23.5)</b>
Undecided	<b>10 (4.0)</b>	<b>5 (8.8)</b>	<b>5 (3.3)</b>
Strongly disagree + disagree	<b>205 (82.5)</b>	<b>40 (70.2)</b>	<b>112 (73.2)</b>
Staff Workload <i>K-W X<sup>2</sup> =43.043, df=2</i>			
Very high + high	<b>137 (54.8)</b>	<b>46 (80.7)</b>	<b>129 (84.3)</b>
Reasonable	<b>111 (44.4)</b>	<b>11 (19.3)</b>	<b>24 (15.7)</b>
Very low +low	<b>2 (0.8)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>
Staff Turnover <i>K-W X<sup>2</sup> =21.697, df=2</i>			
Very high + high	<b>14 (5.6)</b>	<b>4 (7.0)</b>	<b>15 (9.9)</b>
Reasonable	<b>60 (24.2)</b>	<b>131 (54.4)</b>	<b>55 (36.2)</b>
Very low +low	<b>174 (70.2)</b>	<b>22 (38.6)</b>	<b>82 (53.9)</b>
Staff Morale <i>K-W X<sup>2</sup> =16.183, df=2</i>			
Very good + good	<b>188 (75.2)</b>	<b>35 (61.4)</b>	<b>94 (1.4)</b>
OK	<b>54 (21.6)</b>	<b>18 (31.6)</b>	<b>47 (30.7)</b>
Very poor + poor	<b>8 (3.2)</b>	<b>4 (7.0)</b>	<b>14 (7.8)</b>
Staff Teamwork <i>K-W X<sup>2</sup> =11.505, df=2</i>			
Very good + good	<b>192 (77.1)</b>	<b>37 (64.9)</b>	<b>102 (66.7)</b>
OK	<b>45 (18.1)</b>	<b>17 (29.8)</b>	<b>41 (26.8)</b>
Very poor + poor	<b>12 (4.8)</b>	<b>3 (5.3)</b>	<b>10 (6.5)</b>

\* *n*=14 missing information on staffing budget.

Table 5.7: Staffing Budget Meeting Needs of Clients (2 of 2 pages)

<i>n</i> *	Item	Strongly Agree + Agree <i>n</i> =250 <i>n</i> (%)	Undecided <i>n</i> =57 <i>n</i> (%)	Strongly Disagree + Disagree <i>n</i> =153 <i>n</i> (%)
<b>Medical Practitioner</b>				
	Attended <i>K-W X<sup>2</sup> = 18.561, df=2</i>			
	Very good + good	<b>178 (71.2)</b>	<b>28 (49.1)</b>	<b>85 (55.9)</b>
	OK	<b>57 (22.8)</b>	<b>19 (33.3)</b>	<b>39 (25.7)</b>
	Very poor + poor	<b>15 (6.0)</b>	<b>10 (17.5)</b>	<b>28 (18.4)</b>
	Effectiveness <i>K-W X<sup>2</sup> = 16.084, df=2</i>			
	Very good + good	<b>180 (74.7)</b>	<b>30 (56.6)</b>	<b>87 (60.0)</b>
	OK	<b>52 (21.6)</b>	<b>19 (35.8)</b>	<b>43 (29.7)</b>
	Very poor + poor	<b>9 (3.7)</b>	<b>4 (7.5)</b>	<b>15 (10.3)</b>
<b>Pharmacist</b>				
	Attended <i>K-W X<sup>2</sup> = 10.651, df=2</i>			
	Very good + good	<b>177 (72.8)</b>	<b>29 (53.7)</b>	<b>90 (62.1)</b>
	OK	<b>56 (23.0)</b>	<b>20 (37.0)</b>	<b>39 (26.9)</b>
	Very poor + poor	<b>10 (4.1)</b>	<b>5 (9.3)</b>	<b>16 (11.0)</b>
	Effectiveness <i>K-W X<sup>2</sup> = 14.863, df=2</i>			
	Very good + good	<b>177 (75.0)</b>	<b>32 (64.0)</b>	<b>80 (57.1)</b>
	OK	<b>53 (22.5)</b>	<b>13 (26.0)</b>	<b>47 (33.6)</b>
	Very poor + poor	<b>6 (2.5)</b>	<b>5 (10.0)</b>	<b>13 (9.3)</b>
<b>Physiotherapist</b>				
	Attended <i>K-W X<sup>2</sup> = 17.6173, df=2</i>			
	Very good + good	<b>184 (78.6)</b>	<b>32 (62.7)</b>	<b>94 (66.7)</b>
	OK	<b>37 (15.8)</b>	<b>15 (29.4)</b>	<b>33 (23.4)</b>
	Very poor + poor	<b>13 (5.6)</b>	<b>4 (7.8)</b>	<b>14 (9.9)</b>
	Effectiveness <i>K-W X<sup>2</sup> = 13.035, df=2</i>			
	Very good + good	<b>180 (80.0)</b>	<b>28 (59.6)</b>	<b>95 (70.9)</b>
	OK	<b>33 (14.7)</b>	<b>18 (38.3)</b>	<b>32 (23.9)</b>
	Very poor + poor	<b>12 (5.3)</b>	<b>1 (2.1)</b>	<b>7 (5.2)</b>
<b>Podiatrist</b>				
	Attended <i>K-W X<sup>2</sup> = 20.705, df=2</i>			
	Very good + good	<b>176 (71.8)</b>	<b>28 (52.8)</b>	<b>90 (60.8)</b>
	OK	<b>57 (23.3)</b>	<b>19 (35.8)</b>	<b>41 (27.7)</b>
	Very poor + poor	<b>12 (4.9)</b>	<b>6 (11.3)</b>	<b>17 (11.5)</b>
	Effectiveness <i>K-W X<sup>2</sup> = 14.251, df=2</i>			
	Very good + good	<b>175 (73.8)</b>	<b>29 (59.2)</b>	<b>91 (64.5)</b>
	OK	<b>52 (21.9)</b>	<b>17 (34.7)</b>	<b>36 (25.5)</b>
	Very poor + poor	<b>10 (4.2)</b>	<b>3 (6.1)</b>	<b>14 (9.9)</b>

\* *n*=14 missing information on staffing budget.

However, almost half of all Facility Managers reported that their staffing budget did not meet the needs of their clients (34%,  $n=250$  (Table F.2)), with one in five undecided (12%,  $n=57$  (Table F.2)). Where Managers considered that the budget did meet clients' needs, they were more likely to have received the maximum three years accreditation ( $p<0.001$ ; see Table 5.7). Care was also more closely aligned to that stated within the care plan and according to clients actual needs ( $p=0.004$ ; see Table 5.7).

#### 5.3.2.2 Sector Capabilities

Improvement in care staff skills and knowledge was positively associated with job classification according to Managers (i.e. RN had improved skills and knowledge over Care Worker (Advanced), which was more advanced than for a Care Worker) (Table F.4). The RN role predominantly conducted client assessments (57%,  $n=271$ ), wrote (53%,  $n=252$ ) and evaluated a client's care plan (60%,  $n=284$ ) and completed client documentation (42%,  $n=201$ ) (see Table F.2).

Of note, where 60% of care staff were Care Workers, their Managers perceived that one in five had very poor or poor knowledge of clinical care (19.9%,  $n=86$ ), and almost one quarter had poor or very poor client documentation capabilities (22%,  $n=92$ ). Furthermore, where care staff are carrying out the majority of medication administration in low care facilities, the data indicated that one quarter had very poor or poor abilities to administer medications (24.2%,  $n=75$ ), and almost one third of these staff had poor or very poor knowledge of pain management (29%,  $n=120$ ) (see Table F.4).

#### 5.3.2.3 Manager Profile

The following findings were based on an assumption that the data represented an average day for Facility Manager respondents (see Table 5.8). Managers who self-reported working a 9½ hour day on average ( $mean = 9.34$ ,  $SD = 3.1$ ,  $n=454$ , see Table F.2) and those Managers who worked more than eight hours per day were in larger facilities ( $p<0.001$ ) (>60 beds  $p<0.001$ ), and with more high care clients ( $p<0.001$ ). Facility Managers working over eight hours per day were responsible for more high care clients with dementia ( $p=0.001$ ), incontinence ( $p<0.001$ ), and needing palliative care interventions ( $p=0.001$ ). These Managers also subsequently used more RN hours per day ( $p<0.001$ ) than Managers who worked eight hours or less. The Facility Managers who reported working eight hours or less hours perceived that they had RNs who demonstrated better leadership capabilities, than facilities where the Managers

worked more than eight hours per day ( $p < 0.001$ ). Medical Practitioners were also perceived to be more effective in meeting the needs of clients in residential aged care facilities where the Manager worked eight hours or less per day ( $p = 0.001$ ).



Table 5.8: Managers Working Hours

Item	Managers working more than 8hrs/day Mean (SD) Range <i>n</i> =215	Managers working 8 or less hrs/day Mean (SD) Range <i>n</i> =239
<i>n</i> *		
Total client number <i>M-W U z</i> = -3.683	<b>69.5 (39.9)</b> 10-190	<b>54.9 (31.4)</b> 8-200
Total high care clients <i>M-W U z</i> = -4.296	<b>49.1 (32.5)</b> 0-152	<b>36.2 (25.5)</b> 0-145
Total low care clients	20.4 (27.1) 0-135	18.7 (23.9) 0-150
High Care Client Presentation		
Dementia <i>M-W U z</i> = -3.479	<b>29.0 (24.3)</b> 0-120	<b>21.6 (17.9)</b> 0-82
Incontinence <i>M-W U z</i> = -3.902	<b>39.4 (30.0)</b> 0-150	<b>28.1 (22.6)</b> 0-121
Palliative Care <i>M-W U z</i> = -3.185	<b>4.8 (14.7)</b> 0-140	<b>3.5 (7.8)</b> 0-62
Care Staff Hours		
Managers	10.9 (3.6) 9-33	7.8 (0.7) 4-8
RNs <i>M-W U z</i> = -4.129	<b>28.9 (17.0)</b> 2-93	<b>25.1 (16.5)</b> 4-93
Care Worker (Advanced) staff	24.9 (22.3) 2-120	23.9 (20.4) 4-120
Care Worker staff	100.5 (83.1) 7-439	78.0 (58.4) 5-313
	<i>n</i> (%)	<i>n</i> (%)
Facility Size <i>CC X<sup>2</sup></i> = 13.570, <i>df</i> =1		
1-60 Clients	<b>134 (56.3)</b>	<b>157 (73.4)</b>
>60 Clients	<b>104 (43.7)</b>	<b>57 (26.6)</b>
Knowledge and Skills		
RN Leadership <i>M-W U z</i> = -3.053		
Very Good + Good	<b>130 (59.6)</b>	<b>130 (70.3)</b>
Satisfactory	<b>64 (29.4)</b>	<b>46 (24.9)</b>
Very Poor + Poor	<b>24 (11.0)</b>	<b>9 (4.9)</b>
Health Professional Effectiveness		
Medical Practitioner <i>M-W U z</i> = -3.257		
Very Good + Good	<b>141 (60.8)</b>	<b>153 (76.1)</b>
Satisfactory	<b>75 (32.3)</b>	<b>37 (18.4)</b>
Very Poor + Poor	<b>16 (6.9)</b>	<b>11 (5.5)</b>

\* *n*=20 missing information on Managers working hours.

### 5.3.3 Client Profile

The client profile in residential aged care is predominantly described by the level of care they require. The term 'client acuity' indicates the client's complexity of care needs. The survey data revealed a complicated client profile. In an average 57 bed residential aged care facility ( $m= 57.2$ ), and 63% of all clients were assessed as high care (63%,  $n= 17,026$ ) and 2% are representative of extra service clients ( $n= 575$ ) (see Table F.1).

A significant majority of the residential aged care facilities surveyed use care plans (93%,  $n= 435$  (Table F.2)) to guide and document client care. However, one-third of Facility Managers agreed or strongly agreed with the survey statement that 'care plans are currently predominantly a funding tool rather than an individualised care planning tool' (32%,  $n=146$  (Table F.2)). One in five Facility Managers also reported that actual client care differed from what was stated in the care plans (18%,  $n= 83$  (Table F.2)). It was reported that clients received the majority of one on one time with Care Worker staff (1hr/day,  $m=1$ ) and 1½ hours per day from care staff (1hr 36 minutes/day,  $m= 1.6$ ) (see Table F.2).

#### *5.3.3.1 Client Acuity*

Based on client acuity ( $n=27,015$ ; see Table F.1) a mix of both high and low care clients in the one care facility is indicative of very complex and acute client care needs. Of note, more high care clients compared with low care clients had dementia (76%: 24%), depression (68%: 32%), were incontinent (79%: 21%), were aggressive (81%: 19%) and/or were receiving palliative care (92%:8%) (Table F.1). One in four clients had a diagnosis of depression (23%,  $n= 6001$ ), and four out of five high care clients were incontinent (79%,  $n=13,036$  (Table F.1)), yet one in four Care Worker staffs had poor or very poor knowledge of continence management (16%,  $n=69$  (Table F.4)).

One in every five residential aged care clients exhibited aggressive behaviours (19%,  $n=4,534$  (Table F.1)) while only one third of Care Workers (34%,  $n=149$  (Table F.4)) were reported by Managers as having capability to manage aggressive clients in a good or very good manner. Palliative care was predominantly undertaken for high care clients (92%,  $n=1,510$  (Table F.1)), but one quarter of Care Worker staff who undertake the majority of daily care needs for clients were reported to have very poor or poor knowledge of palliative care (24%,  $n=105$  (Table F.4)) and pain management (29%,

$n=120$  (Table F.4)). Table 5.9 extracts relevant figures and percentages from Table F.1 to provide a concise summary of data.

*Table 5.9: Client Acuity Based on Study Data (extracted from Table F.1)*

Item	Total (Table F.1) $n$ (%)	High Care Clients $n$ (%)	Low Care Clients $n$ (%)
Total client number	27,015 (100.0)	17,026 (63.0)	9,989 (37.0)
Dementia	13,274 (49.1)	10,080 (75.9)	3,194 (24.1)
Depression	6,001 (22.2)	4,053 (67.5)	1,948 (32.5)
Incontinence	16,414 (60.8)	13,036 (79.4)	3,378 (20.6)
Aggression	4,534 (16.8)	3,651 (80.5)	883 (19.5)
Palliative Care	1,644 (6.1)	1,510 (91.8)	134 (8.2)

Utilising client proportions from the current survey, and assuming that these figures were representative of the national residential aged care population of  $n=152,178$  at the time (Australian Institute of Health and Welfare, 2008e, p. 45), Table 5.10 presents estimated projections of national client acuity figures in residential aged care facilities. This survey identified that 63.0% of 27,015 clients were assessed as requiring high care; that approximates 95,909 of the total 152,178 Australian clients classified as high care at the time of the survey.

*Table 5.10: Client Acuity in Australia Based on Study Data Percentages*

Item	Total AIHW (2008) $n$ (%)	High Care Clients $n$ (%)	Low Care Clients $n$ (%)
Total client number	100.0 (152,178)	63.0 (95,909)	37.0 (35,463)
Dementia	74,774 (49.1)	56,782 (75.9)	17,992 (24.1)
Depression	33,804 (22.2)	22,831 (67.5)	10,973 (32.5)
Incontinence	92,462 (60.8)	73,433 (79.4)	19,029 (20.6)
Aggression	25,540 (16.8)	20,566 (80.5)	4,974 (19.5)
Palliative Care	9,261 (6.1)	8,506 (91.8)	755 (8.2)

Half of all residential aged care clients surveyed were reported to have dementia (49%,  $n= 13,274$  (Table F.1)), despite only one third of Care Workers (36%,  $n=158$  (Table F.4)) and two thirds of Advanced Care Workers (62%,  $n=211$  (Table F.4)) having 'very good or good' knowledge of dementia, as reported by their Managers. Considering the increasing proportions of clients with dementia residing in Australian residential

facilities, analysis was undertaken on facilities where more than 50% of the clients had a diagnosis of dementia, compared to those that did not (See Table 5.11).

*Table 5.11: Impact on Facility; More than half of the facility clients with a diagnosis of dementia*

Item	Facilities with >50% Clients with Dementia Mean (SD) Range <i>n</i> =211	Facilities with 0-50% Clients with Dementia Mean (SD) Range <i>n</i> =261
<i>n</i> *		
Total client number	67.1 (40.9) 10-200	58.3 (32.0) 8-165
Total high care clients <i>M-W U z</i> = -6.659	<b>51.4 (30.7)</b> <b>0-145</b>	<b>35.1 (27.2)</b> <b>0-152</b>
Total low care clients <i>M-W U z</i> = -6.075	<b>15.7 (27.7)</b> <b>0-150</b>	<b>23.1 (23.0)</b> <b>0-135</b>
Dementia diagnosis, all clients	<b>46.0 (2.4)</b> <b>6-130</b>	<b>18.1 (13.1)</b> <b>0-68</b>
Depression diagnosis, all clients <i>M-W U z</i> = -4.256	<b>18.2 (15.9)</b> <b>0-62</b>	<b>11.6 (12.2)</b> <b>0-60</b>
Incontinence, all clients <i>M-W U z</i> = -11.076	<b>50.8 (28.9)</b> <b>8-165</b>	<b>31.7 (26.5)</b> <b>0-150</b>
Aggression, all clients <i>M-W U z</i> = -8.118	<b>15.9 (18.2)</b> <b>0-120</b>	<b>6.4 (7.6)</b> <b>0-40</b>
Palliative care, all clients <i>M-W U z</i> = -6.938	<b>5.4 (10.7)</b> <b>0-81</b>	<b>3.5 (13.1)</b> <b>0-140</b>
Care Staffing Hours/Day		
Manager	<b>9.7 (3.4)</b> <b>4-32</b>	<b>9.2 (2.7)</b> <b>4-32</b>
RNs <i>M-W U z</i> = -4.978	<b>31.5 (17.5)</b> <b>2-93</b>	<b>23.0 (15.2)</b> <b>2-72</b>
Care Worker (Advanced)	<b>25.8 (22.3)</b> <b>2-120</b>	<b>23.2 (20.5)</b> <b>2-120</b>
Care Worker staff <i>M-W U z</i> = -4.446	<b>107.0 (83.8)</b> <b>4-439</b>	<b>73.7 (57.3)</b> <b>5-299</b>
Total on the floor Staff Hours (RN + C.W. + C.W. (Adv.)) <i>M-W U z</i> = -5.633	<b>164.3 (98.7)</b> <b>21-513</b>	<b>119.8 (70.77)</b> <b>24-383</b>

\* *n*=2 missing information on proportion of clients within a facility with dementia.

Table 5.11: Impact on Facility; More than half of the facility clients with a diagnosis of dementia (2 of 3)

<i>n</i> *	Item	Facilities with >50% Clients with Dementia <i>n</i> =211 <i>n</i> (%)	Facilities with 0-50% Clients with Dementia <i>n</i> =261 <i>n</i> (%)
	Rural Location	<b>54 (25.6)</b>	<b>110 (42.1)</b>
	Regional Location	<b>157 (74.4)</b>	<b>151 (57.9)</b>
	For Profit	<b>75 (35.5)</b>	<b>44 (17.0)</b>
	Not For Profit	<b>136 (64.5)</b>	<b>215 (83.0)</b>
	Care Worker staff		
	Assessment skills of the elderly	<i>M-W U z</i> = -3.076	
	Very Good + Good	<b>41 (21.7)</b>	<b>80 (34.0)</b>
	Satisfactory	<b>100 (52.9)</b>	<b>115 (48.9)</b>
	Very Poor +Poor	<b>48 (25.4)</b>	<b>40 (17.1)</b>
	Evaluation of care plans	<i>M-W U z</i> = -2.982	
	Very Good + Good	<b>25 (16.9)</b>	<b>51 (27.1)</b>
	Satisfactory	<b>55 (37.2)</b>	<b>74 (39.4)</b>
	Very Poor +Poor	<b>68 (45.9)</b>	<b>63 (33.5)</b>
	Care Worker staff		
	Documentation	<i>M-W U z</i> = -3.305	
	Very Good + Good	<b>47 (26.0)</b>	<b>98 (40.7)</b>
	Satisfactory	<b>86 (47.5)</b>	<b>100 (41.5)</b>
	Very Poor +Poor	<b>48 (26.5)</b>	<b>43 (17.8)</b>
	Knowledge of clinical care in elderly	<i>M-W U z</i> = -4.204	
	Very Good + Good	<b>53 (27.7)</b>	<b>88 (36.7)</b>
	Satisfactory	<b>88 (46.1)</b>	<b>117 (48.8)</b>
	Very Poor +Poor	<b>50 (26.2)</b>	<b>35 (14.6)</b>
	Administration of medication	<i>M-W U z</i> = -4.215	
	Very Good + Good	<b>46 (78.1)</b>	<b>99 (55.0)</b>
	Satisfactory	<b>36 (18.9)</b>	<b>52 (28.9)</b>
	Very Poor +Poor	<b>46 (3.1)</b>	<b>29 (16.1)</b>
	Knowledge of dementia		
	RN		
	Very Good + Good	153 (78.1)	183 (82.1)
	Satisfactory	37 (18.9)	31 (13.9)
	Very Poor +Poor	6 (3.1)	9 (4.0)
	Care Worker (Advanced) staff		
	Very Good + Good	90 (59.9)	120 (64.2)
	Satisfactory	47 (30.9)	56 (29.9)
	Very Poor +Poor	15 (9.2)	11 (5.9)
	Care Worker staff		
	Very Good + Good	67 (34.7)	91 (37.1)
	Satisfactory	90 (46.6)	125 (51.0)
	Very Poor +Poor	36 (18.7)	29 (11.8)

\* *n*=2 missing information on proportion of clients within a facility with dementia.

*Table 5.11: Impact on Facility; More than half of the facility clients with a diagnosis of dementia (3 of 3)*

<i>n</i> *	Item	Facilities with >50% Clients with Dementia <i>n</i> =211 <i>n</i> (%)	Facilities with 0-50% Clients with Dementia <i>n</i> =261 <i>n</i> (%)
	Management of aggressive clients		
	RN		
	Very Good + Good	134 (69.4)	162 (72.6)
	Satisfactory	50 (25.9)	48 (21.5)
	Very Poor +Poor	9 (4.7)	13 (5.8)
	Care Worker (Advanced) staff		
	Very Good + Good	73 (48.7)	100 (53.8)
	Satisfactory	59 (39.3)	65 (34.9)
	Very Poor +Poor	18 (12.0)	21 (11.3)
	Care Worker staff		
	Very Good + Good	67 (34.5)	67 (34.0)
	Satisfactory	81 (41.8)	104 (43.2)
	Very Poor +Poor	46 (23.7)	55 (22.8)

\* *n*=2 missing information on proportion of clients within a facility with dementia.

Facilities with more than 50% of clients with dementia had statistically more clients assessed as high care ( $p < 0.001$ ) and less as low care ( $p < 0.001$ ), compared with those that did not (see Table 5.11). These facilities also had significantly more clients with complex health issues, including: depression ( $p < 0.001$ ), incontinence ( $p < 0.001$ ), aggressive behaviours ( $p < 0.001$ ) and receiving palliative care interventions ( $p < 0.001$ ), compared to facilities where less than half the clients had dementia.

From a staffing perspective, facilities with more than 50% of clients with a reported dementia had higher-level overall staffing ( $p < 0.001$ ) to support the increased acuity of these clients, particularly in relation to more Registered Nurse ( $p < 0.001$ ) and Care Worker staff hours ( $p < 0.001$ ). Facilities with 50% or fewer of the client population with dementia, were statistically significantly more likely to be located in rural areas ( $p < 0.001$ ) and not for profit facilities ( $p < 0.001$ ) (Table 5.11).

As reported by Managers, Care Worker staff in facilities with less than 50% of clients with dementia were perceived as having better assessment skills ( $p = 0.002$ ), medication administration practices ( $p < 0.001$ ), ability to evaluate care plans ( $p = 0.003$ ) and to document care ( $p = 0.001$ ), and were perceived to be more knowledgeable about clinical

care for clients ( $p=0.003$ ), compared to those facilities that had more than 50% clients with dementia. Interestingly there were no significant differences between these two groups in the Managers' perceptions of levels of staff's dementia knowledge and management of aggressive clients ( $p>0.05$ , see Table 5.11).

## **5.4 Investigation of Case Management Elements**

Following review of the residential aged care sector and the case management literature, case management model elements were identified and included in the survey. Study objective iii is addressed in the following section, to investigate the elements of case management currently used by Australian residential aged care facilities, as reported by Facility Managers. Data are presented in relation to the proposed elements identified in Chapter 3 to provide context and a situational analysis of the presence of case management in this sample of Australian residential aged care services. The case management elements are presented as themes under the terms: preparation, implementation and collaboration (see Table 4.1).

### 5.4.1 Preparation

Issues considered under 'preparation' include organisational vision, utilisation of care plans or pathways and outcome indicators. These had been previously identified in Chapter 3.6.3 and recommended for consideration in a case management model.

#### *5.4.1.1 Vision*

Data were generally inconsistent with regard to Facility Managers' identification of case management and their elements in organisation vision statements (Strongly agreed + agreed 43%,  $n= 194$  and strongly disagreed + disagreed 38%,  $n= 169$  (Table F.2)). Table 5.12 illustrates the two groups of opinion above regarding the Manager's view of case management being evident in their facility's mission statement. In facilities where case management was reported to be embedded in the organisation's vision they were more likely to have a religious affiliation ( $p<0.001$ ), and have a budget perceived to meet the needs of their clients ( $p=0.004$ , see Table 5.12). There was a strong positive association between facilities that did not identify case management in their mission statement, and the degree of case management occurring within their facility ( $p<0.001$ ), and an intention to move towards case management in the following year ( $p<0.001$ ; see Table 5.12).

Table 5.12: Case Management Vision within Facilities

<i>n</i> *	Item	Strongly agree + agree: case management was in their organisation's vision / mission <i>n</i> =216 <i>n</i> (%)	Undecided + strongly disagree + disagree: case management was in their organisation's vision/ mission <i>n</i> =257 <i>n</i> (%)
	Religious affiliation	<b>101 (46.8)</b>	<b>72 (28.0)</b>
	No religious affiliation <i>CC X<sup>2</sup> = 18.453, df=1</i>	<b>115 (53.2)</b>	<b>185 (72.0)</b>
	Currently actively participating in case management		<i>M-W U z = -7.993</i>
	Strongly Agree + Agree	<b>191 (91.4)</b>	<b>147 (57.9)</b>
	Undecided	<b>4 (1.9)</b>	<b>31 (12.2)</b>
	Strongly Disagree + Disagree	<b>14 (6.7)</b>	<b>76 (29.9)</b>
	Planning on improving/implementing case management in subsequent year		<i>M-W U z = -6.727</i>
	Strongly Agree + Agree	<b>175 (87.0)</b>	<b>150 (58.6)</b>
	Undecided	<b>19 (9.5)</b>	<b>63 (24.6)</b>
	Strongly Disagree + Disagree	<b>7 (3.5)</b>	<b>43 (16.8)</b>
	Staffing budget met the needs of clients		<i>M-W U z = -2.910</i>
	Strongly Agree + Agree	<b>120 (59.1)</b>	<b>130 (50.6)</b>
	Undecided	<b>31 (15.3)</b>	<b>26 (10.1)</b>
	Strongly Disagree + Disagree	<b>52 (25.6)</b>	<b>101 (39.3)</b>

\* *n*=1 missing information on vision.

Data were combined for aged care facilities affiliated with a parent provider organisation using the Department of Health and Ageing database (Commonwealth of Australia, 2007a). An analysis of the vision and mission statements across 16 of the largest provider organisations was conducted. These organisations represented one quarter of the total accredited Australian residential aged care facilities (25%, *n*=672 facilities or 38,360 beds) (Commonwealth of Australia, 2007a).

Eleven of the sixteen organisations' vision or mission statements were accessible (see Table 5.13); the remaining five were not, despite written and verbal requests alongside and periodic internet searches for this information



Table 5.13: Interpretation of Vision Statements Related to Case Management

Organisation	Vision/Mission Statement (Reference)	Vision Related to Definition	Vision Related to Elements	Additional Potential Relationships	Total Relationship to Case Management Vision
St Vincent De Paul	“Yours must be a work of love, of kindness, you must give your time, your talents, yourselves...The poor person was a unique person of God’s fashioning with an inalienable right to respect...You must not be content with tiding the poor over crisis: You must study their condition and the injustices which brought about such poverty, with the aim of long term improvement” (St. Vincent De Paul Society 2007).	2	5	1	8
Lutheran Church of Australia	“In response to God’s underserved love: We share the good news of Jesus through electronic media, We provide this hope to the unchurched in a professional, creative and caring manner through high quality, relevant programs, We link respondents to people from local churches who built relationships through personal follow-up, We provide resources and training to assist this process, We share resources worldwide as part of an international family of media ministries, and We are building a sound financial base so that this ministry continues to grow” (Lutheran Church of Australia, 2004)	2	5	1	8
Baptist Community Services	“To express Christ’s love as we serve individuals, families and people in the community who have unmet spiritual, emotional or physical needs” (Baptist Community Services, 2007)	2	3	2	7
Churches of Christ (Queensland)	“Churches of Christ Care will be a vibrant, caring Christian community where people work, grow, contribute and belong” (Churches of Christ Queensland, 2007)	2	3	1	6
Illawarra Retirement Trust	“To be an outstanding organisation that ensures continuing excellence in care, service and accommodation for the ageing” (Illawarra Retirement Trust, 2007)	2	2	0	4

Table 5.13: Interpretation of Vision Statements Related to Case Management (Table 2 of 2)

Organisation	Vision/Mission Statement (Reference)	Vision Related to Definition	Vision Related to Elements	Additional Potential Relationships	Total Relationship to Case Management Vision
Uniting Care Ageing	"Inspired Care...Enriching Lives....Together" (Uniting Care Ageing, 2007)	2	1	1	4
Amity Group	To be setting the benchmark in aged care through a service culture that reflects "friendship, harmony, and understanding" (Amity Group, 2007)	2	1	1	4
Catholic Healthcare	"To promote life that brings hope to those we serve, peace to those we care for and dignity to the sick, frail, elderly and marginalised" (Catholic Healthcare, 2007)	2	2	0	4
Southern Cross Care	"To collaborate as a Federation to optimise Southern Cross Care services based on Christian values" (Southern Cross Care, 2004)	2	2	0	4
Salvation Army	"The Salvation Army exists in Aged Care to provide client focused services to the community through accommodation and care encompassed by Christian spiritual ministry" (Salvation Army 2007)	1	1	1	3
Retired Service League Care	"RSL Care was the first choice provider in health, care and accommodation to the Ex-service and the general community of Australia" (Return Service League Care, 2007)	1	0	1	2
	Maximum Score	5	10	5	20

A comparison of the terms used in these statements against the elements identified in case management and in relation to the Case Management Society of America (2002) definition was conducted. An additional score was given where statements or ideas identified a similar theme, and a maximum score of 20 was possible (see Table 5.13). Statements with no bearing on case management in the organisations' mission statements were not included in this profile. Notably, there are typically statements that further define a vision that were not assessed.

While limited, this analysis revealed that none of these organisations employed the term case management in their vision/mission statement. St Vincent De Paul and the Lutheran Church of Australia demonstrated the highest number of case management elements. A subsequent analysis was conducted with dichotomous categorisation; facilities that strongly agreed, or agreed, that case management was represented in their vision, and those that were uncertain, disagreed or strongly disagreed. This element represented the final criterion for case management implementation as presented later in this Chapter.

#### *5.4.1.3 Pathways*

The majority of facilities (92%,  $n=435/472$ ) used only care plans as a tool for documenting care, with the remaining few using a combination of Pathways and care plans (8%,  $n=36/472$ ) (see Table 5.3). As noted earlier, Facility Managers disagreed (62%,  $n=286/464$ ) that care plans were predominantly a funding tool (see Table 5.3), and disagreed (78%,  $n=360/464$ ) that actual daily care of clients frequently differed from what was stated in the care plans (see Table 5.3). Care plans and pathways were identified as a critical element in the case management criteria.

#### *5.4.1.3 Outcomes*

Staffing workload, turnover, morale and teamwork are all significant measurable outcomes when considering the impact of case management. As noted earlier, residential aged care Facility Managers reported a high or very high workload (68%, see Table F.2). Concurrently, staff turnover was low (see Table F.2).

Staff morale ( $p<0.001$ ), teamwork ( $p<0.001$ ) and workload ( $p<0.001$ ) were closely associated with staff turnover. Where staff morale was increased, so too was staff's ability to work as a team ( $p<0.001$ ). Staff teamwork was closely associated with staff turnover ( $p<0.001$ ) and staff morale ( $p<0.001$ ) (see Table 5.14).

Table 5.14: Facility Workplace Issues: Workload and Staff Turnover

<i>n</i> *	Item	Strongly Agree + Agree <i>n</i> (%)	Undecided <i>n</i> (%)	Strongly Disagree + Disagree <i>n</i> (%)
		<i>n</i> =322	<i>n</i> =147	<i>n</i> =2
		Staff Workload		
Staff Turnover	<i>linear by linear</i> $X^2 = 17.146, df=1$			
	Very high + high	30 (9.4)	5 (3.4)	0 (0.0)
	Reasonable	116 (36.4)	34 (23.1)	0 (0.0)
	Very low + low	173 (54.2)	108 (73.5)	2 (100.0)
		<i>n</i> =35	<i>n</i> =150	<i>n</i> =283
		Staff Turnover		
Staff Workload	<i>linear by linear</i> $X^2 = 17.146, df=1$			
	Very high + high	30 (85.7)	116 (77.3)	173 (61.1)
	Reasonable	5 (14.3)	34 (22.7)	108 (38.2)
	Very low + low	0 (0.0)	0 (0.0)	2 (0.7)
Staff Morale	<i>linear by linear</i> $X^2 = 25.404, df=1$			
	Very good + good	13 (37.1)	98 (65.3)	210 (74.2)
	OK	13 (37.1)	45 (30.0)	64 (22.6)
	Very poor + poor	9 (25.7)	7 (4.7)	9 (3.2)
Staff Teamwork	<i>linear by linear</i> $X^2 = 18.723, df=1$			
	Very good + good	15 (42.9)	104 (69.3)	218 (77.0)
	OK	12 (34.3)	40 (26.7)	53 (18.7)
	Very poor + poor	8 (22.9)	6 (4.0)	12 (4.2)
		<i>n</i> =324	<i>n</i> =122	<i>n</i> =25
		Staff Morale		
Staff Turnover	<i>linear by linear</i> $X^2 = 25.404, df=1$			
	Very high + high	13 (4.0)	13 (10.7)	9 (36.0)
	Reasonable	98 (30.5)	45 (36.9)	7 (28.0)
	Very low + low	210 (65.4)	64 (52.5)	9 (36.0)
Staff Teamwork	<i>linear by linear</i> $X^2 = 186.635, df=1$			
	Very good + good	287 (88.9)	50 (41.0)	2 (8.0)
	OK	36 (11.1)	59 (48.4)	10 (40.0)
	Very poor + poor	0 (0.0)	10 (10.7)	13 (52.0)
		<i>n</i> =339	<i>n</i> =105	<i>n</i> =26
		Staff Teamwork		
Staff Turnover	<i>linear by linear</i> $X^2 = 8.723, df=1$			
	Very high + high	15 (4.5)	12 (11.4)	8 (30.8)
	Reasonable	104 (30.9)	40 (38.1)	6 (23.1)
	Very low + low	218 (64.7)	53 (50.5)	12 (46.2)
Staff Morale	<i>linear by linear</i> $X^2 = 186.635, df=1$			
	Very good + good	287 (84.7)	36 (34.3)	0 (0.0)
	OK	50 (14.7)	59 (56.2)	13 (50.0)
	Very poor + poor	2 (0.6)	105 (9.5)	13 (50.0)

\* *n*=3 missing information on staff workload.

\* *n*=3 missing information on staff teamwork.

\* *n*=6 missing information on staff turnover.

\* *n*=4 missing information on staff morale.

#### 5.4.2: Implementation

As would any comprehensive change strategy or improvement process, the proposed Model transitions from a preparation phase to an implementation phase. The implementation phase as identified in the literature involves comprehensive assessment, caseload, and competent Case Managers and staff.

##### *5.4.2.1 Comprehensive Assessment and Evaluation*

Facility Managers' considered that an ability to assess clients' care needs, demonstrate leadership to initiate required care, and evaluate care outcomes, are pivotal in case management, and key roles of a Case Manager. It was reported that assessments (RN; 57%, Manager; 23%), and care plan evaluations (RN; 60%, Manager; 22%) were predominantly carried out by RN's and Managers (see Table F.4). The majority of these staff (>80%, see Table F.4) were perceived as good or very good at undertaking these tasks. Elements of case management pertaining to assessment, leadership, initiative and evaluation, were also identified by the Managers as satisfactory, good or very good.

Conversely one quarter of Care Worker staff had poor or very poor (23%,  $n=88$  (Table F.4)) assessment capabilities as reported by the Facility Manager, with only two percent assessed as having very good or good (2%,  $n= 121$ (Table F.4)) assessment skills. Four out of five Registered Nurses were reported to have very good or good skills in client assessment (83%,  $n=351$  (Table F.4)), while only one third of Advanced Care Workers had satisfactory assessment skills (30%,  $n=100$  (Table F.4)).

Evaluation of care plans was considered one of the poorest capabilities across the sector. One quarter of Registered Nurses were identified by the Facility Managers as having only satisfactory (19%,  $n=79$  (Table F.4)) or worse (poor +very poor 3%,  $n=14$  (Table F.4)) capabilities in evaluation. Only half of Advanced Care Workers had good or very good evaluation abilities (58%,  $n=173$  (Table F.4)). Only one out of every five Care Workers were reported by Facility Managers to have very good or good evaluation of care plans capabilities (23%,  $n=76$  (Table F.4)), to which a remaining almost half reported to have had very poor or poor evaluation skills (40%,  $n= 133$  (Table F.4)).

#### 5.4.2.2 Caseload

The ratios and allocations of care staff to case management are presented in Table F.7. At the time of the survey, 90% of Case Managers were either the Facility Manager (40%,  $n=126$  (Table F.6)) or an RN (50%,  $n=157$  (Table F.6)). Almost three quarters (69%,  $n=210/303$ ) of Facility Managers reported allocation of clients to RN Case Managers, with allocation of the remainder to Care Workers (Advanced) (20%,  $n=61/303$ ) and Care Workers (11%,  $n=32/303$ ). On average an RN worked five hours per week in a case management role, compared to six hours for each Care Worker (Advanced) and three hours for each Care Worker (Table F.7). Two clients were allocated on average for each hour an RN or Care Worker Case Manager per week, compared to four clients for Care Workers (Advanced) who acted in Case Manager roles (Table F.7).

Many Facility Managers utilised one or more of staff categories concurrently for case management responsibilities, indicating that at the time of the survey, there was no consistency across facilities in the allocation of case management caseloads and assignment.

#### 5.4.2.3 Case Manager

This section profiles the Case Manager roles and responsibilities in residential aged care. Based on the Facility Managers' identification of who is predominantly responsible for case management in the facility, this role was principally shared between the RN (50%,  $n=157/312$ ) and the Manager (40%,  $n=126/312$ ) (see Table 5.15). Three out of four Case Managers were trained in the Case Manager role on the job (32%,  $n=177$  (Table F.6)) and / or through in-service education (24%,  $n=132$  (Table F.6)) (respondents were able to select more than one option).

Table 5.15: Profile of the Case Manager

Item	The Case Manager			
	Manager	RN	C.W. (Adv)	C.W.
<i>n</i> *	<i>n</i> = 126 Mean (SD) Range	<i>n</i> = 157 Mean (SD) Range	<i>n</i> = 17 Mean (SD) Range	<i>n</i> =12 Mean (SD) Range
Total client number <i>K-W X<sup>2</sup></i> = 22.836, <i>df</i> =3	<b>48.0 (28.3)</b> <b>8-140</b>	<b>66.8 (37.1)</b> <b>6-200</b>	<b>68.9 (51.6)</b> <b>15-181</b>	<b>48.0 (24.3)</b> <b>16-89</b>
Total high care clients <i>K-W X<sup>2</sup></i> = 24.402, <i>df</i> =3	<b>29.5 (25.0)</b> <b>0-140</b>	<b>44.5 (30.2)</b> <b>0-152</b>	<b>29.7 (34.5)</b> <b>0-145</b>	<b>20.5 (15.2)</b> <b>0-42</b>
Total low care clients	<b>18.5 (20.2)</b> <b>0-119</b>	<b>22.4 (28.2)</b> <b>0-150</b>	<b>39.3 (35.1)</b> <b>0-135</b>	<b>27.5 (20.2)</b> <b>0-58</b>
Client acuity				
High care clients				
Dementia <i>K-W X<sup>2</sup></i> = 16.477, <i>df</i> =3	<b>16.8 (14.8)</b> <b>0-72</b>	<b>27.2 (22.3)</b> <b>0-98</b>	<b>18.2 (22.3)</b> <b>0-82</b>	<b>15.5 (15.4)</b> <b>0-42</b>
Incontinent <i>K-W X<sup>2</sup></i> = 20.703, <i>df</i> =3	<b>23.17 (23.5)</b> <b>0-130</b>	<b>34.4 (27.9)</b> <b>0-150</b>	<b>19.5 (21.9)</b> <b>0-83</b>	<b>13.0 (13.4)</b> <b>0-42</b>
Low care clients				
Dementia <i>K-W X<sup>2</sup></i> = 13.749, <i>df</i> =3	<b>5.7 (8.8)</b> <b>0-44</b>	<b>7.1 (13.3)</b> <b>0-90</b>	<b>13.3 (14.3)</b> <b>0-45</b>	<b>12.1 (10.6)</b> <b>0-38</b>
Aggressive <i>K-W X<sup>2</sup></i> = 15.414, <i>df</i> =3	<b>1.8 (3.4)</b> <b>0-20</b>	<b>1.3 (2.9)</b> <b>0-19</b>	<b>4.8 (6.7)</b> <b>0-26</b>	<b>4.3 (4.8)</b> <b>0-14</b>
Total 'on the floor' care staff hours (RN+ C.W.+C.W. (Adv.)) <i>K-W X<sup>2</sup></i> = 15.051, <i>df</i> =3	<b>99.1 (67.5)</b> <b>8-393</b>	<b>138 (98.1)</b> <b>7-537</b>	<b>111.2 (113.6)</b> <b>15-448</b>	<b>87.3 (55.6)</b> <b>22-225</b>
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Task allocation				
Undertake assessments <i>linear by linear X<sup>2</sup></i> = 23.443, <i>df</i> =1	<b>47 (37.3)</b>	<b>122 (77.7)</b>	<b>7 (41.2)</b>	<b>7 (58.3)</b>
Writing care plans <i>linear by linear X<sup>2</sup></i> = 47.757, <i>df</i> =1	<b>64 (50.8)</b>	<b>122 (77.7)</b>	<b>11 (64.7)</b>	<b>6 (50.0)</b>
Evaluating care plans <i>linear by linear X<sup>2</sup></i> =31.887, <i>df</i> =1	<b>44 (34.9)</b>	<b>126 (80.3)</b>	<b>11 (64.7)</b>	<b>6 (50.0)</b>
Daily documentation <i>linear by linear X<sup>2</sup></i> = 15.287, <i>df</i> =1	<b>21 (16.7)</b>	<b>79 (50.3)</b>	<b>4 (23.5)</b>	<b>9 (75.0)</b>
RCS documentation <i>linear by linear X<sup>2</sup></i> =35.887, <i>df</i> =1	<b>82 (65.1)</b>	<b>88 (56.1)</b>	<b>8 (47.1)</b>	<b>7 (58.3)</b>

\* *n*=162 missing information on Case Manager.

As illustrated in Table 5.15, the size of the facility ( $p < 0.001$ ) and the number of high care clients ( $p < 0.001$ ) differed significantly by the type of staff member identified as a Case Manager. Type of staff member identified as a Case Manager was associated with the following client characteristics: acuity (dementia (high care;  $p < 0.001$  and low care;  $p < 0.001$ ), incontinence (high care;  $p < 0.001$ ), and aggression (low care;  $p = 0.001$ );

and care activities: client assessments ( $p < 0.001$ ), writing of care plan ( $p < 0.001$ ), evaluating the care plan ( $p < 0.001$ ), daily client documentation ( $p < 0.001$ ) and funding documentation ( $p < 0.001$ ). Staff type was also associated with ratios of care staff allocated to direct client care (RN + C.W. (adv) and C.W.;  $p < 0.001$ ). Of note, more than half of all Case Managers did not have case management duties / roles in their position descriptions (58%,  $n=177$  (Table F.6)).

Further analysis compared facilities where an RN was primarily responsible for case management to all other facilities (regardless of whether they were identified as using case management or not). Facilities with RN Case Managers were significantly larger ( $p < 0.001$ ), had more high care clients ( $p < 0.001$ ), and utilised more total 'direct care' staff hours ( $p = 0.001$ ; see Table 5.16). There were also significant differences in terms of high care client acuity (dementia;  $p < 0.001$ ; depression;  $p = 0.002$ ; incontinence;  $p < 0.001$ ; aggression;  $p = 0.005$ ; palliative;  $p = 0.004$ ).



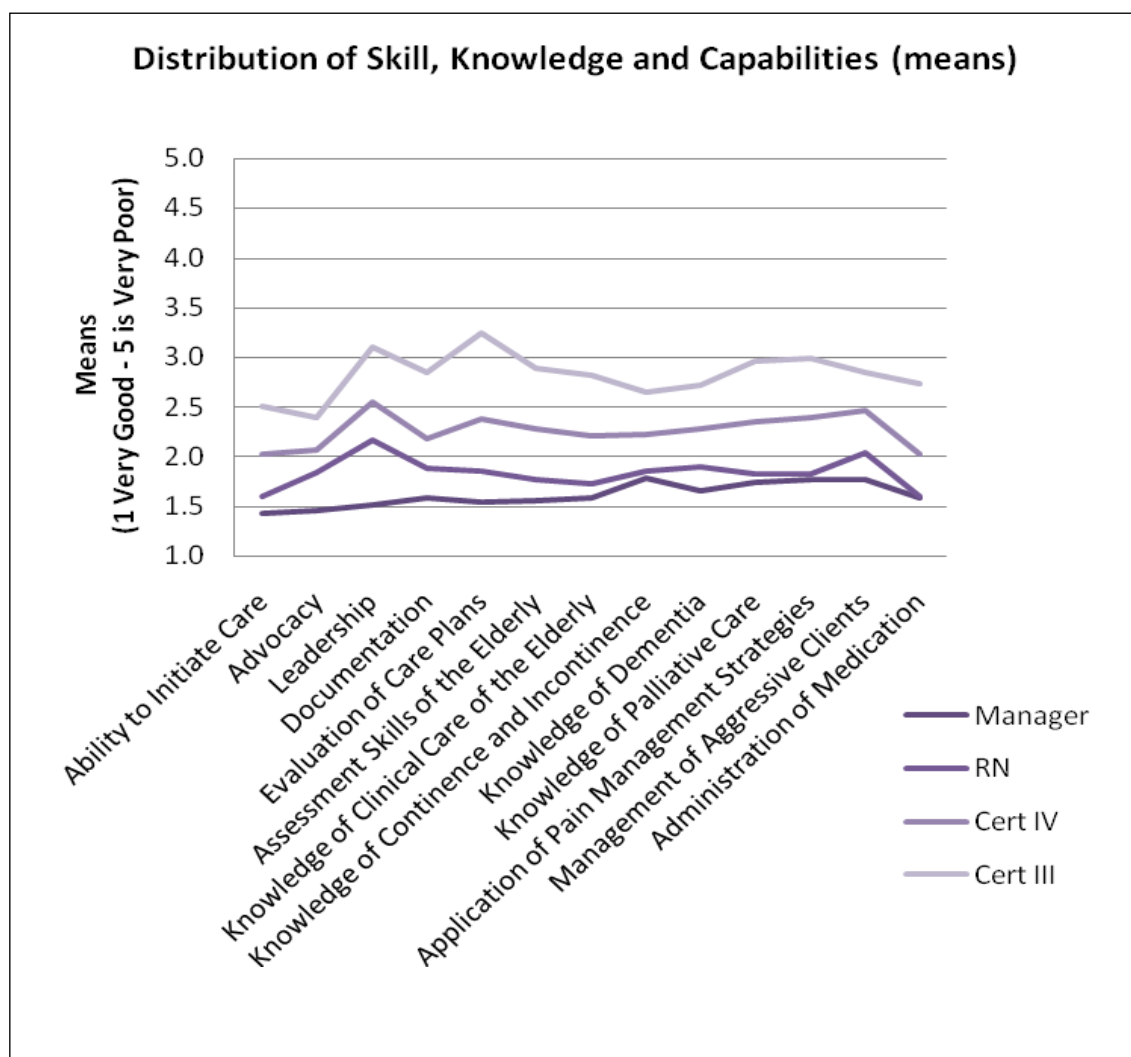
Table 5.16: RN Case Manager Compared to Remaining Facilities

<i>n</i> *	Item	RN Case Manager in Self Reported Case Managing Facility <i>n</i> =157 Mean (SD) Range	All other Facilities <i>n</i> =317 Mean (SD) Range
	Total client number	<b>72.1 (39.9)</b> <b>12-200</b>	<b>57.4 (34.0)</b> <b>8-181</b>
	<i>M-W U z = -4.580</i>		
	Total high care clients	<b>51.5 (31.1)</b> <b>0-152</b>	<b>38.5 (28.5)</b> <b>0-145</b>
	<i>M-W U z = -4.397</i>		
	Total low care clients	<b>20.7 (28.6)</b> <b>0-150</b>	<b>18.9 (23.9)</b> <b>0-135</b>
	High Care Clients		
	Dementia	<b>31.5 (22.1)</b> <b>0-98</b>	<b>22.3 (21.0)</b> <b>0-120</b>
	<i>M-W U z = -4.145</i>		
	Depression	<b>14.6 (13.7)</b> <b>0-52</b>	<b>8.8 (10.7)</b> <b>0-52</b>
	<i>M-W U z = -3.077</i>		
	Incontinence	<b>42.1 (29.7)</b> <b>0-150</b>	<b>29.8 (24.9)</b> <b>0-130</b>
	<i>M-W U z = -3.968</i>		
	Aggression	<b>13.2 (16.7)</b> <b>0-76</b>	<b>7.6 (12.5)</b> <b>0-120</b>
	<i>M-W U z = -2.824</i>		
	Palliative	<b>4.9 (11.5)</b> <b>0-81</b>	<b>3.8 (12.1)</b> <b>0-140</b>
	<i>M-W U z = 2.903</i>		
	Total ' Direct Care Staff Hours Worked /Day		
	RNs	<b>31.7 (16.0)</b> <b>5-76</b>	<b>24.8 (16.9)</b> <b>2-93</b>
	Care Worker (Advanced)	<b>25.3 (22.0)</b> <b>4-120</b>	<b>24.0 (21.1)</b> <b>2-120</b>
	Care Worker	<b>111.9 (86.7)</b> <b>7-439</b>	<b>78.5 (62.5)</b> <b>4-313</b>
	Total 'Direct care Hours (RN+ C.W. (Adv), C.W.),	<b>167.9 (101.2)</b> <b>24-513</b>	<b>127.3 (77.2)</b> <b>21-440</b>
	<i>M-W U z = -3.230</i>		

\* *n*=2 missing information on RN Case Managers.

#### 5.4.2.4 Competent Staff

Facility Managers reported perceptions of the skills and knowledge capabilities by classifications of Facility Manager, RN, Care Worker (Advanced) and Care Worker, using 13 items with a five point Likert scale from very good to very poor. Total scores for each of the four staff classifications were calculated based on each of these ratings and comparisons of Managers rating of staff competence (see Table F.4 and Figure 5.1).



Friedman  $\chi^2 = 604.953, df=3$

Figure 5.1: Distribution of Perceived Staffs' Skill and Knowledge

There was a significant difference ( $p < 0.001$ ) in perceived competency ratings between the staff classifications; Managers rated themselves highest and Care Workers the lowest (mean (SD) Manager: 1.61, RN: 1.83, Care Worker (Advanced): 2.27, Care Worker: 2.79; see Table F.4). Only one in two of care staff were reported as capable of initiating care (very good + good 49%,  $n = 212$ ) and advocating (very good + good 54%,  $n = 227$ ) for the client (Table F.4). Although three quarters of Registered Nurses (88%,  $n = 371$  (Table F.4)) and Care Workers (Advanced) (73%,  $n = 247$  (Table F.4)) had very good or good initiative capabilities. Care staff were least skilled in leadership (very poor + poor 32%,  $n = 227$  (Table F.4)); and ability to manage aggressive client behaviour (very poor + poor 23%,  $n = 101$  (Table F.4)).

Analysis of Managers' perceptions of care staff medication administration practices (often with minimal supervision) noted the following responses. Where Care Worker staff administered medications, 25% were considered to have very poor or poor medication administration practices (see Table F.4). There was also a significant relationship between Managers' perceptions of Care Worker (Advanced) staff's knowledge and medication administration competency ratings ( $p=0.003$ ) but not for Care Worker staff (see Table 5.17).

*Table 5.17: Medication Administration Compared with Clinical Care Knowledge*

	RN <i>n=417</i>	C.W. (Adv) <i>n=292</i>	C.W. <i>n=305</i>
<i>n*</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Medication administration	<i>Wilcoxon Signed Ranks test z = -2.971</i>		
Very good + good	<b>363 (87.1)</b>	<b>215 (73.6)</b>	<b>141 (46.2)</b>
Satisfactory	<b>47 (11.3)</b>	<b>56 (19.2)</b>	<b>89 (29.2)</b>
Very poor + poor	<b>7 (1.7)</b>	<b>21 (7.2)</b>	<b>75 (24.6)</b>

*\* missing information on medication administration*

There was a strong relationship between Managers' perceptions of aged care staff knowledge of palliative care and application of pain management strategies (RN;  $p<0.001$ , Care Worker (Advanced);  $p<0.001$ , Care Worker,  $p<0.001$ , see Table 5.18).

Table 5.18: Relationship between Palliative Care and Pain Management

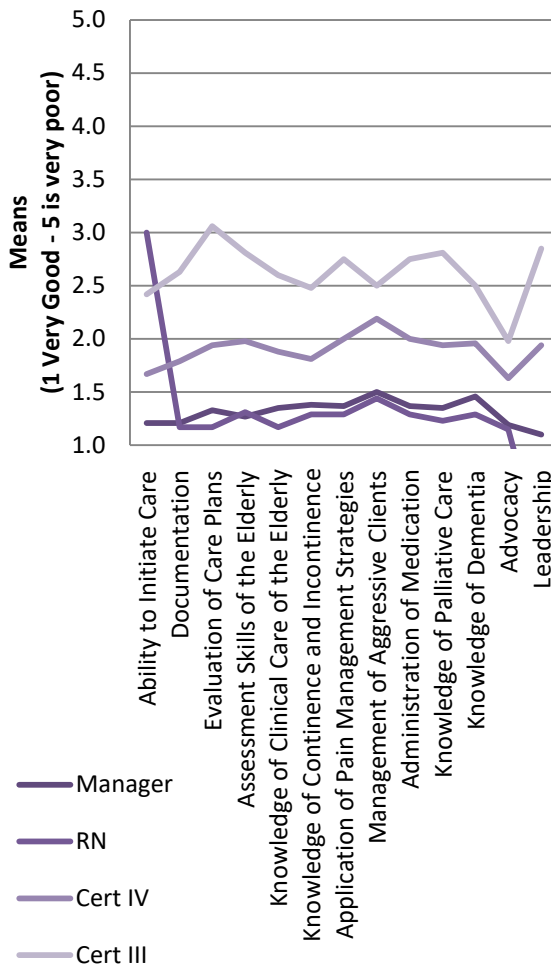
n*	Item	Knowledge of Palliative care		
		Very good + good n (%)	Satisfactory n (%)	Very poor + poor n (%)
<b>Application of Pain Management Interventions</b>				
<b>Manager</b>				
		Manager- Knowledge of palliative care		
	Very good + good	<b>345 (94.3)</b>	<b>19 (34.5)</b>	<b>1 (11.1)</b>
	Satisfactory	<b>19 (5.2)</b>	<b>30 (54.5)</b>	<b>4 (44.4)</b>
	Very poor + poor	<b>2 (0.5)</b>	<b>6 (10.9)</b>	<b>4 (44.4)</b>
<b>RN</b>				
		RN- Knowledge of palliative care		
	Very good + good	<b>301 (91.2)</b>	<b>27 (34.2)</b>	<b>1 (15.2)</b>
	Satisfactory	<b>28 (8.5)</b>	<b>47 (59.5)</b>	<b>3 (37.5)</b>
	Very poor + poor	<b>1 (0.3)</b>	<b>5 (6.3)</b>	<b>4 (50.0)</b>
		<i>linear by linear <math>\chi^2=224.041</math>, df=1</i>		
<b>Care Worker (Advanced) staff</b>				
		Care Worker (Advanced) - Knowledge of palliative care		
	Very good + good	<b>164 (83.2)</b>	<b>20 (17.9)</b>	<b>1 (3.7)</b>
	Satisfactory	<b>30 (15.2)</b>	<b>82 (73.2)</b>	<b>6 (22.2)</b>
	Very poor + poor	<b>3 (1.5)</b>	<b>10 (8.9)</b>	<b>20 (74.1)</b>
		<i>linear by linear <math>\chi^2=188.718</math>, df=1</i>		
<b>Care Worker staff</b>				
		Care Worker- Knowledge of palliative care		
	Very good + good	74 (64.3)	34 (16.9)	6 (5.9)
	Satisfactory	32 (27.8)	129 (64.2)	23 (22.5)
	Very poor + poor	9 (7.8)	38 (18.9)	73 (71.6)

\* missing information on pain management and palliative care

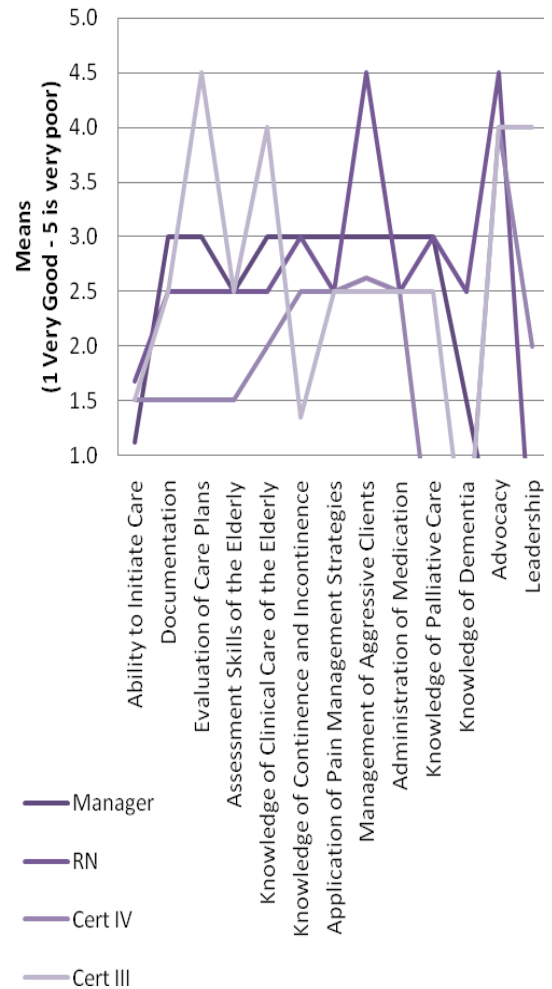
#### 5.4.2.4.1 Leadership Capabilities

As identified in the literature, leadership capabilities are important in case management, and the data presented in Appendix F can be further explored for RN leadership. Where Managers considered RNs had 'good / very good' leadership capabilities, there was an increased likelihood that actual care was more representative of the care plan ( $p=0.003$ ; Table F.8). Perceptions of 'good' RN leadership was also associated with decreased staff turnover ( $p=0.001$ ), improved staff morale ( $p<0.001$ ) and teamwork ( $p<0.001$ ) (see Table F.8). The Facility Manager also perceived RNs to be more skilled, knowledgeable and more capable (Table F.8 and Figure 5.1 and 5.2).

**Impact on Facilities when the RN has Very Good Leadership (means)**



**Impact on Facilities when the RN has Very Poor Leadership (means)**



*Figure 5.2: Impact on Facility where Managers Reported RNs had Very Good Leadership*

All associations between perceived leadership skills and care practices were significant for the Manager, RN, Care Worker (Advanced) and Care Worker. Therefore where an RN was considered by the Facility Manager to have good or very good leadership, all other care staff were also considered to have improved skills and knowledge capabilities in assessment skills, initiation of care, evaluation of care plans, documentation, leadership, advocacy, knowledge of clinical care for the elderly,

knowledge of dementia, knowledge of continence and incontinence, knowledge of palliative care, application of pain management strategies, management of aggressive clients, and administration of medication.

There was also a reported improved attendance of Medical Practitioners and more effective services provided by them and other health professionals (Table F.9);

- i. Medical Practitioner; Attendance:  $p < 0.001$ ; Effectiveness:  $p < 0.001$ ;
- ii. Pharmacist; Attendance:  $p < 0.001$ ; Effectiveness:  $p < 0.001$ ;
- iii. Physiotherapist; Effectiveness:  $p = 0.009$ ;
- iv. Podiatrist; Attendance:  $p < 0.001$ ; Effectiveness:  $p < 0.001$ ).

These Managers were also more likely to be working eight hours or less per day ( $p < 0.001$ ; Table F.9).

#### 5.4.3 Collaboration

While collaboration is central to the principles and model of case management, limitations of this cross-sectional descriptive design constrained exploration of the effectiveness of collaboration. Collaboration reflects holistic and regular engagement between clients, family, staff and other health professionals. As current practice in the sector includes case conferences as a means to communicate and disseminate information, this activity was also considered as collaboration.

One in every ten health professionals providing services were assessed as poor, or very poor, in attending to clients (9%,  $n = 157$ ) and effective (6%,  $n = 105$ ) (Table F.5) in meeting their health needs. Physiotherapists attended clients most frequently (very good + good 73%,  $n = 322$ ) and were considered to be most effective (very good + good 75%,  $n = 315$ ) (Table F.5) in meeting clients' needs. Compared with other health professionals, Medical Practitioners attended a client the least (very poor + poor 11%,  $n = 54$ ) and were considered least effective (6.4%,  $n = 29$ ) (Table F.5).

##### *5.4.3.1 Case Conferences*

The majority of all facilities conducted case conferences annually (57%,  $n = 266$ ), and over one-third implemented case conferences for all clients (new and existing) (37%,  $n = 175$ ) (Table F.3). Case conferences predominantly included care staff (25%,  $n = 385$ ), management staff (17%,  $n = 250$ ) and a Medical Practitioner (14%,  $n = 209$ ) (see Table F.3). Three out of every four facilities considered they were actively

undertaking case management (73%,  $n= 338$  (Table F.2)), and were planning to improve on this in the coming year (71%,  $n=325$  (Table F.2)). Variations in total responses were evident as respondents were able to select more than one response to question 18.

There was a positive association between facilities who reported undertaking case management (Item 9a) and case conferencing ( $p<0.001$ , see Table 5.19).

*Table 5.19: Reported Case Conferences in Case Managing Facilities*

<i>n</i> *	Item	Strongly Agree + Agree <i>n</i> (%)	Undecided <i>n</i> (%)	Strongly Disagree + Disagree <i>n</i> (%)
<b>Conduct of case conferences</b>				
		<i>K-W X<sup>2</sup> = 50.185, df=2</i>		
	No clients	<b>2 (16.7)</b>	<b>2 (16.7)</b>	<b>8 (66.7)</b>
	No clients as we communicate regularly	<b>24 (44.4)</b>	<b>9 (16.7)</b>	<b>21 (38.9)</b>
	Only with clients/families with challenging behaviours	<b>46 (58.2)</b>	<b>11 (13.9)</b>	<b>22 (27.8)</b>
	Try to do as many as possible, but aim for all	<b>93 (83.8)</b>	<b>6 (5.4)</b>	<b>12 (10.8)</b>
	All new clients	<b>25 (75.8)</b>	<b>3 (9.1)</b>	<b>5 (15.2)</b>
	All clients (new and existing)	<b>147 (85.0)</b>	<b>4 (2.3)</b>	<b>22 (12.7)</b>
<b>Frequency of case conferences</b>				
		<i>K-W X<sup>2</sup> = 80.259, df=2</i>		
	Never	<b>42 (39.3)</b>	<b>16 (15.0)</b>	<b>49 (45.8)</b>
	Annually	<b>209 (79.8)</b>	<b>16 (6.1)</b>	<b>37 (14.1)</b>
	At least twice a year	<b>38 (92.7)</b>	<b>1 (2.4)</b>	<b>2 (4.9)</b>
	At least four times a year	<b>28 (100.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>
	More than four times a year	<b>18 (90.0)</b>	<b>1 (5.0)</b>	<b>1 (5.0)</b>
<b>Staff involved in majority of case conferences **</b>				
		<i>K-W X<sup>2</sup> = 61.249, df=2</i>		
	Do not run case conferences	<b>20 (32.8)</b>	<b>8 (13.1)</b>	<b>33 (54.1)</b>
	Care staff (RN, C.W. and C.W. (Adv.))	294 (78.4)	25 (6.7)	56 (14.9)
	Activity staff	202 (81.8)	16 (6.5)	29 (11.7)
	Physiotherapist	123 (79.4)	11 (7.1)	21 (13.5)
	Medical Practitioner	165 (81.3)	13 (6.4)	25 (12.3)
	Pharmacist	69 (85.2)	6 (7.4)	6 (7.4)
	Management	193 (79.8)	13 (5.4)	36 (14.9)
	Administration staff	31 (81.6)	2 (5.3)	5 (13.2)
	Client	29 (85.3)	2 (5.9)	3 (8.8)
	Relative	57 (78.1)	7 (9.6)	9 (12.3)
	Catering	1 (33.3)	0 (0.0)	2 (66.7)
	Chaplain	2 (66.7)	0 (0.0)	1 (33.3)

\* missing information on case conferences.

\*\* Respondents were able to select more than one answer here

Facilities were compared on case conference activity (Item 18a; 13% did not conduct case conferences while 87% did). As noted in Table 5.20, facilities that conducted case conferences had more clients in their facility ( $p<0.001$ ), particularly high care clients ( $p=0.001$ ), and were more likely to be undertaking case management ( $p<0.001$ ).

Table 5.20: Facilities Which Conduct Case Conferences

Item	<i>n</i> *	Do conduct case conferences (Q18a)	Do not conduct case conference (Q18a)
		<i>n</i> =410 mean (SD) Range	<i>n</i> =61 mean (SD) Range
Total client number		<b>60.0 (36.8)</b> <b>5-212</b>	<b>49.4 (28.7)</b> <b>8-141</b>
Total high care clients	<i>M-W U z</i> = -3.852	<b>37.7 (29.4)</b> <b>0-152</b>	<b>31.4 (25.9)</b> <b>0-141</b>
Total low care clients	<i>M-W U z</i> = -3.343	<b>22.3 (26.0)</b> <b>0-150</b>	<b>18.0 (19.6)</b> <b>0-76</b>
		<i>n</i> (%)	<i>n</i> (%)
Actively participating in case management (self reported)		<i>M-W U z</i> = -7.768	
Strongly agree + agree		<b>316 (79.0)</b>	<b>20 (32.8)</b>
Undecided		<b>27 (6.8)</b>	<b>8 (13.1)</b>
Strongly disagree + disagree		<b>57 (14.3)</b>	<b>33 (54.1)</b>

\* *n*=57 missing information on case conferences.

## 5.5 Case Management Population Comparison

Through exploration of the case management elements (Chapter Three) included in the survey, this section distinguishes between two respondent groups; those undertaking case management and those not. Part III of the survey focused on self-reports by Facility Managers currently undertaking case management. Of the Facility Managers who completed this section, 66% indicated that their facility was actively participating in case management (see Table 5.21). Of the facilities not actively participating in case management, 23% of their Managers were planning to introduce/improve in case management in the next year (see Table 5.21). There was a statistically significant association ( $p<0.001$ , see Table 5.21) between facilities who self-reported as actively participating in case management and those identified as participating in case management (Item 9a) and also with Facility Managers planning on improving in case management (Item 9b).



Table 5.21: Self Reported Case Managing Facilities

<i>n</i> *	Item	Self Reported Case Management Facilities <i>n</i> =313 <i>n</i> (%)	Other Facilities <i>n</i> =161 <i>n</i> (%)
	Facilities that completed Part III	313 (66.0)	161 (34.0)
	Currently participating in case management <i>K-W X<sup>2</sup> =157.887, df=2</i>		
	Strongly agree + agree	<b>282 (91.3)</b>	<b>56 (36.4)</b>
	Undecided	<b>10 (3.2)</b>	<b>25 (16.2)</b>
	Strongly disagree + disagree	<b>17 (5.5)</b>	<b>73 (47.4)</b>
	Planning to improve in case management within the following year <i>K-W X<sup>2</sup> =59.190, df=2</i>		
	Strongly agree + agree	<b>251 (82.6)</b>	<b>74 (48.4)</b>
	Undecided	<b>36 (11.8)</b>	<b>46 (30.1)</b>
	Strongly disagree + disagree	<b>17 (5.6)</b>	<b>33 (21.6)</b>

#### 5.5.1 Study Criteria for Facilities Undertaking Case Management

The survey elements that distinguished facilities undertaking case management, included an organisational vision, utilising care plans/pathways, and ensuring all staff were satisfactory, or better, in areas such as assessment, evaluation, initiative, and documentation. Using the criteria listed in Table 5.22, 28% of respondents identified as actively participating in case management.

Table 5.22: Case Management Criteria within Survey

<i>n</i> *	Item	Total <i>n</i> =474 <i>n</i> (%)	Criteria Assessed Case Management Population <i>n</i> =132 <i>n</i> (%)	Criteria Assessed Non Case Management Population <i>n</i> =342 <i>n</i> (%)
	Number of Facilities	474 (100.0)	132 (27.8)	342 (72.2)
	Vision			
	Strongly agree + agree	217 (45.8)	132 (100.0)	85 (24.9)
	Undecided + SD +disagree	257 (54.2)	0 (0.0)	257 (75.1)
	Care Plan or Pathway			
	Care plan + pathway+ comb.	473 (99.8)	132 (100.0)	341 (99.7)
	Other	1 (0.2)	0 (0.0)	1 (0.3)
	Assessment skills of all care staff			
	Satisfactory + good+ VG	393 (82.9)	132 (100.0)	261 (50.4)
	Poor + very poor	81 (17.1)	0 (0.0)	81 (49.6)
	Ability to initiate care of all staff			
	Satisfactory + good+ VG	407 (85.9)	132 (100.0)	275 (80.4)
	Poor + very poor	67 (14.1)	0 (0.0)	67 (19.6)
	Evaluation of care plans of all staff			
	Satisfactory + good+ VG	333 (70.3)	132 (100.0)	201 (58.8)
	Poor + very poor	141 (29.7)	0 (0.0)	141 (41.2)
	Documentation abilities of all staff			
	Satisfactory + good+ VG	373 (78.7)	132 (100.0)	241 (70.5)
	Poor + very poor	101 (21.3)	0 (0.0)	101 (29.5)
	Comparison against self reported case management			
	Self reported case managing	313 (66.0)	75.0 (99)	214 (62.6)
	Self reported not case managing	161 (34.0)	25.0 (33)	128 (37.4)

Abbreviations: SD= Strongly Disagree  
VG= Very Good

Of note, there was no association between facilities that self-reported active case management and those meeting the criteria-based case management assessment ( $p > 0.05$ , see Table 5.23). Facilities meeting the criterion-assessment were more likely representative of religious organisations ( $p < 0.001$ ); have a case management role embedded in staff position descriptions ( $p < 0.001$ ); conduct case conferences ( $p < 0.001$ ); and had allocated care staff a caseload ( $p = 0.004$ ) (see Table 5.23).

Table 5.23: Case Management Criteria Population Comparison (1 or 4 pages)

<i>n</i> *	Item	Total <i>n</i> =474 <i>n</i> (%)	Criteria Assessed Case Management Population <i>n</i> =132 <i>n</i> (%)	Criteria Assessed Non Case Management Population <i>n</i> =342 <i>n</i> (%)
	Number of Facilities <i>M-W U z</i> = -2.558	<b>474 (100.0)</b>	<b>132 (27.8)</b>	<b>342 (72.2)</b>
	Religious Affiliation	<b>173 (36.6)</b>	<b>66 (50.4)</b>	<b>107 (31.3)</b>
	No Religious Affiliation <i>CC X<sup>2</sup></i> = 213.654, <i>df</i> =1	<b>300 (63.4)</b>	<b>65 (49.6)</b>	<b>235 (68.7)</b>
	Budget meets needs of clients <i>M-W U z</i> = -3.532			
	Strongly agree + agree	<b>250 (54.3)</b>	<b>77 (63.6)</b>	<b>173 (51.0)</b>
	Undecided	<b>57 (12.4)</b>	<b>16 (13.2)</b>	<b>41 (12.1)</b>
	Strongly disagree + disagree	<b>153 (33.3)</b>	<b>28 (23.1)</b>	<b>125 (36.9)</b>
	Staffing Workload <i>M-W U z</i> = -2.911			
	Very high + high	<b>147 (68.4)</b>	<b>77 (59.2)</b>	<b>245 (71.8)</b>
	Reasonable	<b>147 (31.2)</b>	<b>53 (40.8)</b>	<b>94 (27.6)</b>
	Very low + low	<b>2 (0.4)</b>	<b>0 (0.0)</b>	<b>2 (0.6)</b>
	Staff morale <i>M-W U z</i> = -3.444			
	Very poor + poor	<b>324 (68.8)</b>	<b>105 (80.8)</b>	<b>219 (64.2)</b>
	OK	<b>122 (25.9)</b>	<b>21 (16.2)</b>	<b>101 (29.6)</b>
	Very good + good	<b>25 (5.3)</b>	<b>4 (3.1)</b>	<b>21 (6.2)</b>
	Staff teamwork <i>M-W U z</i> = -3.241			
	Very poor + poor	<b>339 (72.1)</b>	<b>107 (82.3)</b>	<b>232 (68.2)</b>
	OK	<b>105 (22.3)</b>	<b>22 (16.9)</b>	<b>83 (24.4)</b>
	Very good + good	<b>26 (5.5)</b>	<b>1 (0.8)</b>	<b>25 (7.4)</b>

Table 5.23: Case Management Criteria Population Comparison (2 of 4 pages)

<i>n</i> *	Item	Total n (%)	Criteria Assessed Case Management Population n (%)	Criteria Assessed Non Case Management Population n (%)
	<b>RN</b>			
	Knowledge of clinical care for clients <i>M-W U z = -2.676</i>			
	Very good + good	<b>354 (83.9)</b>	<b>101 (91.8)</b>	<b>253 (81.1)</b>
	Satisfactory	<b>60 (14.2)</b>	<b>9 (8.2)</b>	<b>51 (16.3)</b>
	Very poor + poor	<b>8 (1.9)</b>	<b>8 (2.6)</b>	<b>8 (1.9)</b>
	<b>Care Worker (Advanced) Staff</b>			
	Evaluation of care plans <i>M-W U z = -4.683</i>			
	Very good + good	<b>173 (57.9)</b>	<b>57 (78.1)</b>	<b>116 (51.3)</b>
	Satisfactory	<b>91 (30.4)</b>	<b>16 (21.9)</b>	<b>75 (33.2)</b>
	Very poor + poor	<b>35 (11.7)</b>	<b>0 (0.0)</b>	<b>35 (15.5)</b>
	Documentation <i>M-W U z = -3.508</i>			
	Very good + good	<b>222 (66.7)</b>	<b>71 (80.7)</b>	<b>151 (61.6)</b>
	Satisfactory	<b>92 (27.6)</b>	<b>17 (19.3)</b>	<b>75 (30.6)</b>
	Very poor + poor	<b>19 (5.7)</b>	<b>0 (0.0)</b>	<b>19 (7.8)</b>
	Leadership <i>M-W U z = -3.830</i>			
	Very good + good	<b>151 (46.0)</b>	<b>51 (61.4)</b>	<b>100 (40.8)</b>
	Satisfactory	<b>134 (40.9)</b>	<b>30 (36.1)</b>	<b>104 (42.8)</b>
	Very poor + poor	<b>43 (13.1)</b>	<b>2 (2.4)</b>	<b>41 (16.7)</b>
	Knowledge of clinical care for clients <i>M-W U z = -3.109</i>			
	Very good + good	<b>222 (65.7)</b>	<b>68 (78.2)</b>	<b>154 (61.4)</b>
	Satisfactory	<b>95 (28.1)</b>	<b>0 (0.0)</b>	<b>76 (30.3)</b>
	Very poor + poor	<b>21 (6.2)</b>	<b>0 (0.0)</b>	<b>21 (8.4)</b>
	Knowledge of continence and incontinence <i>M-W U z = -2.887</i>			
	Very good + good	<b>215 (63.4)</b>	<b>65 (74.7)</b>	<b>150 (59.5)</b>
	Satisfactory	<b>100 (29.5)</b>	<b>0 (0.0)</b>	<b>78 (31.0)</b>
	Very poor + poor	<b>24 (7.1)</b>	<b>0 (0.0)</b>	<b>24 (9.5)</b>
	Knowledge of palliative care <i>M-W U z = -2.883</i>			
	Very good + good	<b>197 (58.1)</b>	<b>60 (68.2)</b>	<b>137 (54.6)</b>
	Satisfactory	<b>114 (33.6)</b>	<b>27 (30.7)</b>	<b>87 (34.7)</b>
	Very poor + poor	<b>28 (8.3)</b>	<b>1 (1.1)</b>	<b>27 (10.8)</b>
	Application of pain management strategies <i>M-W U z = -3.546</i>			
	Very good + good	<b>185 (54.9)</b>	<b>60 (68.2)</b>	<b>125 (50.2)</b>
	Satisfactory	<b>118 (35.0)</b>	<b>27 (30.7)</b>	<b>91 (36.5)</b>
	Very poor + poor	<b>34 (10.1)</b>	<b>1 (1.1)</b>	<b>33 (13.3)</b>
	Management of aggressive clients <i>M-W U z = -3.558</i>			
	Very good + good	<b>39 (51.3)</b>	<b>56 (65.1)</b>	<b>117 (46.6)</b>
	Satisfactory	<b>125 (37.1)</b>	<b>29 (33.7)</b>	<b>96 (38.2)</b>
	Very poor + poor	<b>39 (11.6)</b>	<b>1 (1.2)</b>	<b>38 (15.1)</b>
	Medication Administration <i>M-W U z = -3.489</i>			
	Very good + good	<b>217 (73.6)</b>	<b>68 (88.3)</b>	<b>149 (68.3)</b>
	Satisfactory	<b>57 (19.3)</b>	<b>8 (10.4)</b>	<b>49 (22.5)</b>
	Very poor + poor	<b>21 (7.1)</b>	<b>1 (1.3)</b>	<b>20 (9.2)</b>

Table 5.23: Case Management Criteria Population Comparison (3 of 4 pages)

<i>n</i> *	Item	Total n (%)	Criteria Assessed Case Management Population n (%)	Criteria Assessed Non Case Management Population n (%)
<b>Care Worker Staff</b>				
	Assessment skills of the clients <i>M-W U z = -6.264</i>			
	Very good + good	<b>121 (28.4)</b>	<b>121 (28.4)</b>	<b>49 (44.1)</b>
	Satisfactory	<b>217 (50.9)</b>	<b>62 (55.9)</b>	<b>155 (49.2)</b>
	Very poor + poor	<b>88 (20.7)</b>	<b>0 (0.0)</b>	<b>88 (27.9)</b>
	Ability to initiate care <i>M-W U z = -5.528</i>			
	Very good + good	<b>212 (49.3)</b>	<b>77 (68.8)</b>	<b>135 (42.5)</b>
	Satisfactory	<b>161 (37.4)</b>	<b>35 (31.3)</b>	<b>126 (39.6)</b>
	Very poor + poor	<b>57 (13.3)</b>	<b>0 (0.0)</b>	<b>57 (17.9)</b>
	Evaluation of care plans <i>M-W U z = -7.946</i>			
	Very good + good	<b>76 (22.5)</b>	<b>35 (44.9)</b>	<b>41 (15.8)</b>
	Satisfactory	<b>129 (38.2)</b>	<b>43 (55.1)</b>	<b>86 (33.1)</b>
	Very poor + poor	<b>133 (39.3)</b>	<b>0 (0.0)</b>	<b>133 (51.2)</b>
	Documentation <i>M-W U z = -6.890</i>			
	Very good + good	<b>146 (34.4)</b>	<b>62 (53.9)</b>	<b>84 (27.2)</b>
	Satisfactory	<b>186 (43.9)</b>	<b>53 (46.1)</b>	<b>133 (43.0)</b>
	Very poor + poor	<b>92 (21.7)</b>	<b>0 (0.0)</b>	<b>92 (29.8)</b>
	Leadership <i>M-W U z = -6.293</i>			
	Very good + good	<b>89 (22.7)</b>	<b>42 (42.0)</b>	<b>47 (16.1)</b>
	Satisfactory	<b>179 (45.7)</b>	<b>47 (47.0)</b>	<b>132 (45.2)</b>
	Very poor + poor	<b>124 (31.6)</b>	<b>11 (11.0)</b>	<b>113 (38.7)</b>
	Advocacy <i>M-W U z = -3.292</i>			
	Very good + good	<b>227 (53.9)</b>	<b>72 (63.7)</b>	<b>155 (50.3)</b>
	Satisfactory	<b>142 (33.7)</b>	<b>36 (31.9)</b>	<b>106 (34.4)</b>
	Very poor + poor	<b>52 (12.4)</b>	<b>5 (4.4)</b>	<b>47 (15.3)</b>
	Knowledge of clinical care for clients <i>M-W U z = -6.459</i>			
	Very good + good	<b>142 (32.8)</b>	<b>60 (51.7)</b>	<b>82 (25.9)</b>
	Satisfactory	<b>205 (47.3)</b>	<b>54 (46.6)</b>	<b>151 (47.6)</b>
	Very poor + poor	<b>86 (19.9)</b>	<b>2 (1.7)</b>	<b>84 (26.5)</b>
	Knowledge of dementia <i>M-W U z = -4.516</i>			
	Very good + good	<b>158 (35.9)</b>	<b>57 (48.7)</b>	<b>101 (31.3)</b>
	Satisfactory	<b>216 (49.1)</b>	<b>57 (48.7)</b>	<b>159 (49.2)</b>
	Very poor + poor	<b>66 (15.0)</b>	<b>3 (2.6)</b>	<b>63 (19.5)</b>
	Knowledge of continence and incontinence <i>M-W U z = -4.720</i>			
	Very good + good	<b>186 (42.0)</b>	<b>68 (57.6)</b>	<b>118 (36.3)</b>
	Satisfactory	<b>188 (42.4)</b>	<b>45 (38.1)</b>	<b>143 (44.0)</b>
	Very poor + poor	<b>69 (15.6)</b>	<b>5 (4.2)</b>	<b>64 (19.7)</b>
	Knowledge of palliative care <i>M-W U z = -5.507</i>			
	Very good + good	<b>119 (27.4)</b>	<b>49 (43.0)</b>	<b>70 (21.9)</b>
	Satisfactory	<b>210 (48.4)</b>	<b>56 (49.1)</b>	<b>154 (48.1)</b>
	Very poor + poor	<b>105 (24.4)</b>	<b>9 (7.9)</b>	<b>96 (30.3)</b>
	Application of pain management strategies <i>M-W U z = -4.636</i>			
	Very good + good	<b>115 (27.4)</b>	<b>43 (38.7)</b>	<b>72 (23.3)</b>
	Satisfactory	<b>185 (44.0)</b>	<b>55 (49.5)</b>	<b>130 (42.1)</b>
	Very poor + poor	<b>120 (28.6)</b>	<b>13 (11.7)</b>	<b>107 (34.6)</b>

Table 5.23: Case Management Criteria Population Comparison (4 of 4 pages)

<i>n</i> *	Item	Total n (%)	Criteria Assessed Case Management Population (Pop.) n (%)	Criteria Assessed Non Case Management Pop. n (%)
	<b>Care Worker Staff</b>			
	Management of aggressive clients <i>M-W U z = -4.804</i>			
	Very good + good	<b>149 (34.1)</b>	<b>56 (48.7)</b>	<b>93 (28.9)</b>
	Satisfactory	<b>187 (42.8)</b>	<b>49 (42.6)</b>	<b>138 (42.9)</b>
	Very poor + poor	<b>101 (23.1)</b>	<b>10 (8.7)</b>	<b>91 (28.3)</b>
	Medication Administration <i>M-W U z = -5.347</i>			
	Very good + good	<b>145 (46.8)</b>	<b>58 (70.7)</b>	<b>87 (38.2)</b>
	Satisfactory	<b>90 (29.0)</b>	<b>18 (22.0)</b>	<b>72 (31.6)</b>
	Very poor + poor	<b>75 (24.4)</b>	<b>6 (7.3)</b>	<b>69 (30.3)</b>
	<b>Medical Practitioner</b>			
	Attendance <i>M-W U z = -3.845</i>			
	Very good + good	<b>301 (63.8)</b>	<b>99 (75.6)</b>	<b>202 (59.2)</b>
	Satisfactory	<b>117 (24.8)</b>	<b>30 (22.9)</b>	<b>87 (25.5)</b>
	Very poor + poor	<b>54 (11.4)</b>	<b>2 (1.5)</b>	<b>52 (15.2)</b>
	Effectiveness <i>M-W U z = -3.622</i>			
	Very good + good	<b>307 (67.9)</b>	<b>102 (79.7)</b>	<b>205 (63.3)</b>
	Satisfactory	<b>116 (25.7)</b>	<b>25 (19.5)</b>	<b>91 (28.1)</b>
	Very poor + poor	<b>29 (6.4)</b>	<b>1 (0.8)</b>	<b>28 (8.6)</b>
	<b>Pharmacist</b>			
	Attendance <i>M-W U z = -3.292</i>			
	Very good + good	<b>304 (66.8)</b>	<b>97 (77.6)</b>	<b>207 (62.7)</b>
	Satisfactory	<b>117 (25.7)</b>	<b>24 (19.2)</b>	<b>93 (28.2)</b>
	Very poor + poor	<b>34 (7.5)</b>	<b>4 (3.2)</b>	<b>30 (9.1)</b>
	Effectiveness <i>M-W U z = -3.733</i>			
	Very good + good	<b>298 (67.9)</b>	<b>99 (80.5)</b>	<b>199 (63.0)</b>
	Satisfactory	<b>115 (26.2)</b>	<b>23 (18.7)</b>	<b>92 (29.1)</b>
	Very poor + poor	<b>26 (5.9)</b>	<b>1 (0.8)</b>	<b>25 (7.9)</b>
	<b>Podiatrist</b>			
	Attendance <i>M-W U z = -3.930</i>			
	Very good + good	<b>305 (66.4)</b>	<b>100 (79.4)</b>	<b>208 (65.8)</b>
	Satisfactory	<b>117 (25.5)</b>	<b>25 (19.8)</b>	<b>92 (27.6)</b>
	Very poor + poor	<b>37 (8.1)</b>	<b>1 (0.8)</b>	<b>36 (10.8)</b>
	Effectiveness <i>M-W U z = -3.037</i>			
	Very good + good	<b>306 (69.5)</b>	<b>98 (79.0)</b>	<b>208 (65.8)</b>
	Satisfactory	<b>105 (23.9)</b>	<b>24 (19.4)</b>	<b>81 (25.6)</b>
	Very poor + poor	<b>29 (6.6)</b>	<b>2 (1.6)</b>	<b>27 (8.5)</b>
	Case Management was in position descriptions <i>CC X<sup>2</sup> = 15.321, df=1</i>			
	Yes	<b>131 (42.5)</b>	<b>58 (59.2)</b>	<b>73 (34.8)</b>
	No	<b>177 (57.5)</b>	<b>40 (40.8)</b>	<b>137 (65.2)</b>
	Undertaking case conferences: <i>CC X<sup>2</sup> = 15.616, df=1</i>			
	Yes	<b>120 (25.4)</b>	<b>16 (12.2)</b>	<b>104 (30.4)</b>
	No	<b>353 (74.6)</b>	<b>115 (87.8)</b>	<b>238 (69.6)</b>
	Allocation of caseload within facility: <i>CC X<sup>2</sup> = 8.251, df=1</i>			
	Yes	<b>228 (48.1)</b>	<b>78 (59.1)</b>	<b>150 (43.9)</b>
	No	<b>246 (51.9)</b>	<b>54 (40.9)</b>	<b>192 (56.1)</b>

Facilities that met the study criteria for case management, had statistically significant associations with the following (from Table 5.23):

- i. Budget is more likely to meet the clients' needs ( $p < 0.001$ );
- ii. Reduced staff workload ( $p = 0.004$ );
- iii. Increased staff morale ( $p = 0.001$ ) and teamwork ( $p = 0.001$ );
- iv. Increased care staff skill, knowledge and capabilities, specifically;
  - a. Increased RN knowledge of clinical care in the elderly ( $p = 0.007$ )
  - b. Increased Care Worker (Advanced) knowledge and skill;
    - i. Improved ability to effectively evaluate care plans ( $p < 0.001$ )
    - ii. Improved ability to document effectively ( $p < 0.001$ )
    - iii. Improved leadership capabilities ( $p < 0.001$ )
    - iv. Increased knowledge of clinical care for clients ( $p = 0.002$ )
    - v. Increased knowledge of continence ( $p = 0.004$ )
    - vi. Increased knowledge of palliative care ( $p = 0.004$ )
    - vii. Improved pain management strategies ( $p < 0.001$ )
    - viii. Improved capability of managing aggressive clients ( $p < 0.001$ )
    - ix. Improved medication administration practices ( $p < 0.001$ )
  - c. Increased Care Worker knowledge and skill;
    - i. Improved client assessment skills ( $p < 0.001$ )
    - ii. Increased ability to initiate care ( $p < 0.001$ )
    - iii. Improved ability to effectively evaluate care plans ( $p < 0.001$ )
    - iv. Improved ability to document effectively ( $p < 0.001$ )
    - v. Improved leadership capabilities ( $p = 0.001$ )
    - vi. Improved advocacy capabilities ( $p < 0.001$ )
    - vii. Increased knowledge of clinical care for clients ( $p < 0.001$ )
    - viii. Increased knowledge of dementia ( $p < 0.001$ )
    - ix. Increased knowledge of continence ( $p < 0.001$ )
    - x. Increased knowledge of palliative care ( $p < 0.001$ )
    - xi. Improved pain management strategies ( $p < 0.001$ )
    - xii. Improved capability of managing aggressive clients ( $p < 0.001$ )
    - xiii. Improved medication administration practices ( $p < 0.001$ )
- v. Improved health professional efficiencies;
  - a. Increased attendance by Medical Practitioners ( $p < 0.001$ ), Pharmacist ( $p = 0.001$ ) and Podiatrist ( $p < 0.001$ )
  - b. Improved effectiveness of Medical Practitioners ( $p < 0.001$ ), Pharmacist ( $p < 0.001$ ) and Podiatrist ( $p = 0.002$ )

## 5.6 Conclusion

The survey completed by Managers in Australian residential aged care facilities identified that clients' require increased care needs and had higher acuity in some areas than reported in the literature. 'Extra service' and 'for profit' facilities utilised significantly more resources (care staff hours) than 'non extra service' and 'not for profit' facilities, respectively. The facility's years of accreditation reflected the degree to which actual care differed from documented care plans, and the amount of one-on-one time spent with clients. Reduction in staff turnover was associated with reports of increased staff morale, teamwork and reduced workload.

Of note, the concept of case management was not identified in these aged care organisations' vision/mission statements. The practice of case conferencing was not associated with undertaking case management. Ninety percent of Case Managers were RNs, who managed a caseload ratio of one full time RN managed 80 clients. From the perspective of the Managers who responded, RNs were considered to be more skilled and knowledgeable than Care Workers (Advanced), and they, in turn, were considered to be more skilled and knowledgeable than Certificate III staff. Where RNs were reported to have good or very good leadership, care practices were considered more representative of care plans, staff turnover decreased and morale and teamwork increased. As well, case management was associated with improvements in staff skill and knowledge.

Based on the survey criteria, case management accounted for one third of the sector sample, and this sub-group was assessed against data from the remaining facilities. The criteria-assessed study group was statistically different: more skilled and knowledgeable care staff, a budget more reflective of clients' needs, utilised an inter-professional team that attended more frequently and was more effective, and was operationally more sustainable with reduced staff workload and increased teamwork and staff morale.

The following Chapter contextualises the study findings, considers the implications of these findings for the residential aged care sector and discusses the study limitations and recommendations for future research. Based on these findings for case management elements identified in the 'draft' case management model and reflected in the survey, development of a revised 'final' Collaborative Care Case Management Model (CCCMM) is also presented in Chapter Six.



## Chapter 6

### Discussion

#### 6.1 Introduction

This study examined case management in Australian residential aged care facilities. This broadly assessed the presence, application and possible impact of case management, as perceived by Facility Managers. This is the first study to evaluate case management as a means to understand the conceptualisation of case management in this specific setting. The study provides affirmation of the challenges facing the sector including increasing acuity clients, widening scope of staff skill mix and need for review of practices and policies. The major findings of the study are identified within this Chapter, followed by strengths and limitations, and the conclusion.

#### 6.2 Major Findings

A cross sectional comparative analysis was undertaken to ascertain the scope of case management in the Australian residential aged care sector. To address the primary research aim, Facility Managers in all Australian residential aged care facilities were surveyed about their perceived views on the sector in relation to areas pertaining to the development of a case management strategy. The data provided an observed linearity of the facilities participating in the survey as compared to an Australian Institute of Health and Welfare (2008e) database accessed at the time of survey distribution (Commonwealth of Australia, 2007a). The major findings of the study revealed that residential aged care is in crisis, both in relation to addressing the complexity of client needs and managing workforce capability. Case management as a concept, whilst not well understood remains in its infancy. The study establishes a case for consideration of case management as a value-added model of care within the sector. Furthermore, the review of case management models identified that none of these models was entirely suitable to the needs of the residential aged care population and that a hybrid version would be a reasonable alternative. The outcome of the review process lead to the development of the Collaborative Care Case Management Model (CCCMM), which is later described in this Chapter. The major findings within the limitations of this study include;

- i. residential aged care sector is in crisis (*Objective i*),

- ii. no one model was entirely suitable for this specific setting and population (*Objective ii*),
- iii. lack of understanding about what case management is (*Objective iii*), and
- iv. presentation of the Collaborative Care Case Management Model (*Objective iv*).

The findings presented in this section are directly aligned to the research objectives and presented in Figure 6.1.

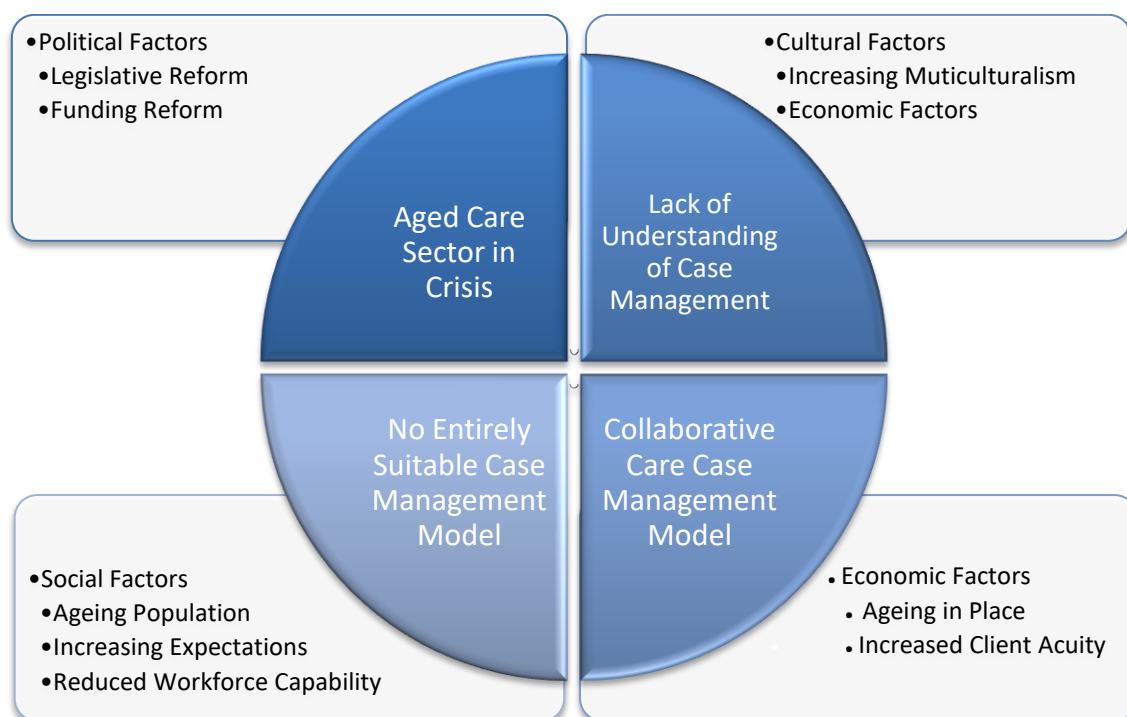


Figure 6.1 Major Findings

### 6.2.1 Examination of the Sector, Facility and Client Profiles (*Objective i*)

The Australian residential aged care sector remains in a crisis state (Braithwaite, 2001; Commonwealth of Australia, 2009c), and is viewed nationally as “a major challenge” (Commonwealth of Australia, 2010c, p. xxii). The data presented in this study, in relation to Objective one, presents aged care sector wide issues symbolic of a critical and fragile state requiring immediate action. These issues concern the disparate nature of the sector due to geographical variations and access to GP and allied health services, complex client needs and differences in ethos, a less than optimal funding allocation (Commonwealth of Australia, 2009b; Hogan, 2004) and lowered capacity of the sector to maintain capital investment (Thornton, 2009). A confounding issue includes the changing workforce capabilities (Commonwealth of Australia, 2009a;

Productivity Commission, 2008) and increasing client acuity (Australian Institute of Health and Welfare, 2008b). Addressing these issues requires a significant shift in policy and practice to ensure a sustainable, effective and efficient sector into the future. Case Management should be carefully considered as a suitable option to address the issues presented.

The literature confirmed that case management, while previously not explored in this Australian health sector, has the potential to increase a client's quality of life (Bjorkman & Hansson, 2007; Oshima, et al., 2004) and minimise disease exacerbation (Bjorkman & Hansson, 2007; Smith & Newton, 2007). Case management is also associated with increased staff skills and knowledge, supports more effective staffing profiles (Table 5.30), improves quality of care (Terra, 2007), reduces costs of care (Oeseburg, et al., 2009; Schraeder, et al., 2008) and maximises resource utilisation (Lim, et al., 2003). While only some of these outcomes were reported by study respondents to occur through case management practices, if a suitable case management model is adopted for the sector, this could provide a useful framework for positioning Australian residential aged care into the future.

#### *6.2.1.1 Nature of the Aged Care Sector Crisis*

Although the residential aged care sector is considered to be 'in crisis' it has undergone significant reform over the past few decades, resulting in a dramatic but partial shift in clinical care and transparency of systems which has continued to improve in both care outcomes and reputation. The Aged Care Act (1997) has remained largely unchanged for more than a decade and has been effective in standardising and improving quality processes (Commonwealth of Australia, 2009a; Hogan, 2004; Hunter & Levett-Jones, 2010). While the study findings are skewed by including only residential aged care facilities with accreditation status, it nevertheless revealed some of these quality processes and outcomes. For example, the 'actual' care delivered as identified in the clients' care plans, was more likely to be implemented as planned when achieving three-year accreditation status. While this study was able to provide data to support the Aged Care Act (1997) implementation, inconsistencies in care delivery remain across the country (Angus & Nay, 2003; Commonwealth of Australia, 2005b, 2009c; Productivity Commission, 2008). At the present time a national initiative is occurring to review both the Aged Care Act (1997) and the framework of service provision for the future (National Health and Hospital Reform Commission, 2009; Productivity

Commission, 2010). This might be the catalyst needed to mandate uniform system compliance in case management systems.

The study findings also confirmed substantial reports and research that residential aged care is grossly under-funded (Commonwealth of Australia, 2009c; Daskein, Moyle, & Creedy, 2009; Hogan, 2007; Hogan, 2004; National Health and Hospital Reform Commission, 2009; Productivity Commission, 2008; Thornton, 2009). This was revealed by one third of Facility Managers who reported that their current staffing budget did not meet the needs of their clients. Similarly, equal numbers of Managers reported that care plans were predominantly used as a funding tool rather than to individualise care planning. Arguments for increasing sector funding have been made by a number of consumer advocacy services, such as Alzheimer's Australia (2010). To date, none of these groups have substantially influenced Government financial policy, despite increased funding through annual bed allocation (Commonwealth of Australia, 2010a). However, the Government continues to offer nurses aged care scholarships to promote workforce growth in the sector (Commonwealth of Australia, 2010b). The Productivity Commission (2010) recently reported that the sector will require more services and greater funding to meet the growing demand for aged care beds, which is expected to double by 2030 (National Health and Hospital Reform Commission, 2009), and projected to account for a one percent of Gross Domestic Productivity increase by 2050 (Swan, 2010). Despite recommendations for significant structural changes to the sector, such as accommodation charges (Hogan, 2004), workforce capability incentives (Productivity Commission, 2005), increased bed capacity (Commonwealth of Australia, 2005b), deregulation (Commonwealth of Australia, 2010c) and user-directed funding (Commonwealth of Australia, 2010c), very few changes have occurred other than a revision of funding tools (Andrews-Hall, et al., 2007; Commonwealth of Australia, 2005b; De Bellis & Williams, 2008; Department of Health and Ageing, 2008; Productivity Commission, 2008; Thomas, 2008a), which have largely not addressed contemporary needs as indicated by this study's data. In light of the situation revealed by the study findings, case management is an option worth considering, particularly for its ability to increase the alignment of care planning and care practices.

The literature has revealed how the aged care sector has responded to the 'crisis' by being more resourceful and deliberate in their strategic development activities, evidenced by the growth in the size of new aged care facilities which range in size from 90 to 120 beds as a more viable option (Thornton, 2009). Only 20% of facilities had

more than 60 clients per facility in 1998 (Australian Institute of Health and Welfare, 1998), as compared with 35% in 2007 (Australian Institute of Health and Welfare, 2008e, p. 102) and 35.7% in this study. Further research into case management around capability and sustainability in the sector is required.

There has been little change in the geographical dispersion of residential aged care facilities throughout Australia. In 2007, one third of facilities were located in rural and remote areas (Australian Institute of Health and Welfare, 2002), and this allocation has remained constant over time, as supported by the study data (35%). However, this finding was not reflected by the Australian Institute of Health and Welfare (2009c, p. 12), which reported a reduction of 14% of aged care facilities being located in outer regional, remote and very remote areas in 2008. This is a concerning trend, as it would suggest a dramatic relocation of beds to metropolitan areas and reallocation of resources is currently occurring, possibly due to the recognised issues facing rural facilities with increased overheads and operating costs, workforce shortages, limited services and dispersed population (Commonwealth of Australia, 2009c; Henderson & Caplan, 2008; Productivity Commission, 2005). This trend is consistent with the study's findings that rural facilities tended to be smaller in bed size than regional and urban facilities. This study also identified an issue regarding the provision of allied health services for clients in rural areas, with physiotherapists and podiatrists providing less than satisfactory attendances in comparison to service provision in regional/metropolitan based facilities. This issue was raised in a recent Senate Inquiry (Commonwealth of Australia, 2009c), but is yet to be resolved. Case management therefore remains an option for improved care delivery and collaboration in more geographically isolated facilities, where allied health services are fewer.

Another change in service provision over the past decade has been the growth in the number of 'Extra Service' beds. This increase can possibly be attuned to the residential care option of charging additional daily fees for extra services, thereby adding to the pool of available funds for facility operations (Andrews-Hall, et al., 2007). 'Extra Service' facilities had significant differences in staffing levels on the day of data collection compared to other facilities, having almost 14 more RN hours a day, in a total of 25 more care staff hours per day than all other facilities. However, it must be noted that this study included only 18 of the 200 facilities in receipt of 'extra service' places (Commonwealth of Australia, 2006), which might have skewed the data. A further caution is that these 18 were larger facilities with higher numbers of high care clients

than the non 'extra service' facilities, and more representative of 'for profit' facilities. Consequently, variations in funding between aged care facilities highlights the need to consider a more equitable funding model, or for service providers to actively look for additional revenue alongside increasing community expectations. Given the funding anomalies uncovered, case management may improve resource utilisation and cost reduction through more targeted care planning and monitoring of care outcomes.

While religiously affiliated organisations were the largest providers of aged care facilities over the past decade, non-religiously affiliated and for-profit organisations have flourished, possibly as an outcome of needing to be financially sustainable. An investigation conducted by the Australian Institute of Health and Welfare (1998) showed an initially rapid and then a steady growth of non-religiously-affiliated aged care providers, with for-profit facilities making up four percent in 1997 (Australian Institute of Health and Welfare, 1998), 23% in 2003 (Richardson & Martin, 2004), 25% in 2007 and 27% in 2008 (Australian Institute of Health and Welfare, 2008e, p. 13). The study data displayed similar profiles for the for-profit facilities, with 'extra service' facilities being larger in size and having significantly more 'high care' clients, with strategies for ensuring they are more financially viable. The parallel between the extra service facilities and higher than average high care client numbers was also reflected in the study data. In larger facilities the majority of client documentation was undertaken by RNs as opposed to other care staff, and were assessed by their managers as undertaking more comprehensive documentation and assessments than in smaller facilities. This situation potentially creates difference in the larger facilities' abilities to provide more comprehensive client assessments and thus greater opportunities to align assessed need with adequate funding classification. The study findings support this potential, since almost one quarter of Care Workers were regarded by their managers to have poor or very poor client documentation and assessment capabilities, as opposed to more than 90% of RNs being reported by Managers to have very good or good assessment and documentation skills. Comprehensive assessment and documentation are pivotal to the skills needed to monitor and achieve individual client goal attainment, so it would seem that facilities with higher numbers of RNs available for client assessment and care planning are more likely to have the necessary conditions for a case management model.

The study also revealed that managers believed there was insufficient resource allocation to adequately cater for the current and future needs of the sector, a finding

supported by the literature (Allen, O'Connor, Chapman, & Francis, 2008; Giles, Hawthorne, & Crotty, 2009; Thomas, 2008a). Case management was identified in this study as one approach able to provide for individualised client care within resource-deprived circumstances. Given the financial constraints evident in the sector, case management is one possible strategy that can help to improve client care and outcomes, reduce workforce pressures, increase skill mix and enhance economic viability, despite insufficient funds for care services.

#### *6.2.1.2 Workforce issues*

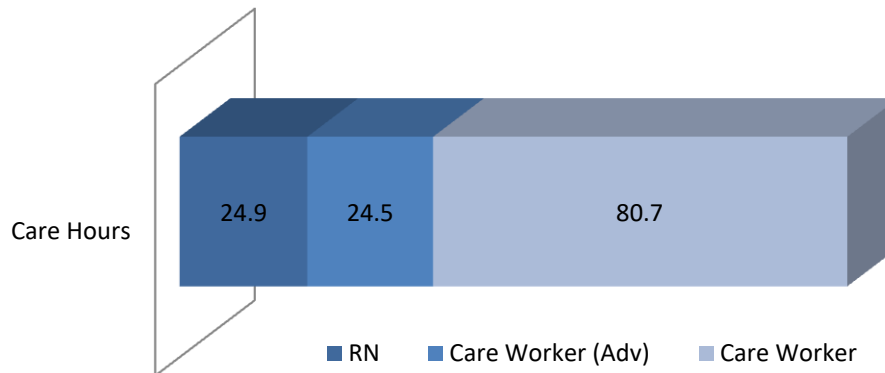
The aged care workforce is in a state of crisis (Chenoweth, Jeon, Merlyn, & Brodaty, 2010a; National Institute of Labour Studies, 2004; Productivity Commission, 2005, 2010). This is in relation to utilising a reduced skilled workforce (Access Economics, 2009; Commonwealth of Australia, 2005b; Productivity Commission, 2005), reduced number of Registered Nurses available (National Institute of Labour Studies, 2008), lack of training in aged care (Productivity Commission, 2010), lack of funding to attract and indeed sustain the costs endured with an increasingly regulated workforce (Access Economics, 2009; Commonwealth of Australia, 2005b; Productivity Commission, 2010). One glaring gap in legislation was evident subsequent to a comprehensive review of the sector (Hogan, 2004). This review led to a repeal of the Nursing Homes Act (1988) in 2004, thereby discarding the requirement for Registered Nurse coverage in high care aged care facilities as was evident under Section 39. While facilities must continue to prove that suitably qualified staff are meeting the needs of the clients (Australian Institute of Health and Welfare, 2009c; Commonwealth of Australia, 2005a) this has led to a blurring of the term 'RN responsibility for staff supervision' (National Institute of Labour Studies, 2004). The study sample revealed that one in five of the facilities did not have RN coverage at all in residential aged care facilities on the day of data collection. This is of serious concern given that Managers identified that many of their Care Workers had poor or very poor preparation for a senior role, in terms of clinical initiative (14%), leadership (32%) and knowledge of clients' clinical care needs (20%). A similar concern was raised by more than one quarter of Queensland aged care nurses responding to a 2004 state-wide survey, many of whom did not believe these staff had sufficient knowledge and skills to meet the needs of their clients (Eley et al., 2007). In this study there was a positive association between increased competence and job classification, according to the Managers, who reported that RNs were more likely to have greater skill and knowledge than Care Worker's (Adv.) and Care Worker's. Nevertheless, Managers reported care staff had good knowledge and

skill capability when they had met the case management criteria indicated by Table 5.23.

Staffing skill mix aligns with quality care and improved client outcomes in the acute sector (Aiken, Clarke, Silber, & Sloane, 2003; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Duffield et al., 2007) and has been shown to hold true in the residential aged care sector (Harrington, 2004). This potential is seriously compromised in the Australian residential aged care sector which remains significantly stressed by resource availability, and is becoming increasingly complex to manage given the dissonance between staff and client profiles (Andrews-Hall, et al., 2007; Australian Institute of Health and Welfare, 2009c). A suitable case management model might provide a framework to redress the inadequate staff skill mix currently besetting the sector (Australian Institute of Health and Welfare, 2008d; Productivity Commission, 2005) and the formidable pressures of national policy (Tuckett, et al., 2009).

De Bellis (2010, p. 102) recently stated that reduced staff skill mix is one factor contributing to “substandard and negligent nursing care”. Care Workers in this study consumed two thirds of the care staffing hours (see Figure 6.2) and on average only one third of this staff had good or very good knowledge of dementia, continence, palliative care, pain management and ability to manage aggressive clients. Furthermore, one quarter of care staff were reported by Facility Managers to have very poor or poor practices in medication administration. The study data suggests that aged care workforce knowledge and skills remain under-developed in the sector. This was supported by the Hogan Report (2004) where recent shifts in staffing skill mix impacted on care outcomes, resulting in the need for workforce education and skill development. This speaks to the heart of case management being a potential vehicle for increased staff capability to meet client needs, and critical for consideration in future research.





*Figure 6.2 Care Staffing Hours per Day (Mean)*

A quantitative survey of Queensland residential aged care nurses reported that their workload was very heavy (Eley, et al., 2007). More than half of residential aged care nurses felt pressure to work harder (National Institute of Labour Studies, 2004) which was confirmed in interviews conducted by a Senate Inquiry into quality and equity in aged care (Commonwealth of Australia, 2005b). Similar findings were reported in this study, where more than two thirds of Facility Managers perceived staff workload to be high or very high. Facility Managers were reported to be working long days (m=9.5hrs/day) and utilised more RN hours per day, although they considered their RNs had less leadership capabilities than those who worked eight hours or less each day. Furthermore, an Access Economics (2009) report indicated that residential aged care nurses work intensity (supervision of clients and staff) was expected to double in the coming decade. Eley et .al. (2007) documented that staff had low morale; this was in contradiction to this study where more than two thirds of Managers viewed their staff morale as good or very good. This study was able to provide evidence to support the positive association between case management and the reduction of workload and turnover along with increased morale and teamwork as reported by Managers.

The Australian residential aged care sector faces ongoing staffing shortages due to the high turnover of staff (Jackson, et al., 2003). Both nurses and care staff working in the sector were on average older than nurses working in the acute sector, and the majority of staff were care workers with no professional qualifications (Australian Institute of Health and Welfare, 2008d; Productivity Commission, 2005). Recent turnover data indicated that one in five care worker staff will leave the sector annually (National Institute of Labour Studies, 2008), which is more evident in rural areas (Lea &

Cruickshank, 2005; National Institute of Labour Studies, 2008). This finding was not supported by the study data with two out of three Facility Managers reporting low staff turnover and no significant difference in turnover geographically. However, the data suggested that there was a strong link between reduced workload and turnover, and increased teamwork and morale where Facility Managers reported that clients needs were being met through good or very good staffing allocation. The study findings supported changing staff profiles in the sector through the replacement of qualified nurses with care workers, making it more difficult to adopt case management.

Leadership is pivotal in case management (Conway, 2007; Cooper & Mitchell, 2006; Thomas, 2008b) and is central to quality care (Cunningham & Whitby, 1997; Jeon, Merlyn, & Chenoweth, 2010), which is critical when considering the capabilities of the sector and opportunities for service improvement. Facility Managers considered care staff to have inadequate leadership capability, a finding supported by Horner and Boldy (2006). Care Worker (Adv) staff, traditionally not expected to take a leadership role, are now frequently placed into leadership positions given the shortages of qualified nurses (Duffield, et al., 2007). These under-qualified staff are expected to plan, provide and supervise care for increasingly more complex clients (De Bellis, 2010; Hegney, et al., 2003). Despite these leadership role developments, the study data indicated that Care Worker (Advanced) staff perform least well in this. Care Worker staff were also rated poorly as leaders, yet many are required to take on these roles, raising further concerns where they are often the most senior staff onsite. Where the Facility Manager identified an RN as having good leadership capabilities, the client care plan was considered to be more consistently implemented, and this is an essential goal and outcome of effective case management. Good leadership among all staff was linked with improved skills and greater knowledge, but Managers did not identify if these were essential ingredients in better case management. Case management has been previously identified as needing to work in a collaborative environment (Carr, 2003; Fain, 1997). This study demonstrated a link between good RN leadership capacity and Managers reporting improved attendance and effectiveness of allied health professionals identified in the study. The use of case management was associated with increased care staff skills, knowledge and leadership capability as was identified in the study data.

The goal for workforce capability in the sector, was best summarised as “the provision of quality care requires adequate staffing levels with an appropriate skill mix”

(Productivity Commission, 2008, p. 147). In an environment where staffing represented an average of 70% of aged care providers budgets (Thornton, 2008a), this is inevitably a significant issue when considering the state of crisis of the sector. Furthermore, this goal for improved quality of care (Blegen, et al., 1995; Terra, 2007), cost minimisation (Lim, et al., 2003; Oeseburg, et al., 2009; Schraeder, et al., 2008) and reduction in staffing hours (Zimmer, et al., 1990) has been previously supported in this study as outcomes of case management implementation.

#### *6.2.1.3 Client-related issues*

Clients admitted to residential aged care have continued to have increased acuity. They are staying in care for longer for a number of reasons including increased services at home (Courtney et al., 2009; Productivity Commission, 2010), improved technology to enhance quality and longevity of life (Pilotto et al., 2010; Tyrer et al., 2006; Wiet, 2005), and the changing role of the sector in the community to support a frailer and more complex client profile (Henderson & Caplan, 2008). The Australian Health and Welfare reported that the split between high and low care clients in 2007 (2008e, p. 46) and in 2008 (2009c, p. 44) was 70:30, similar with this study's findings of 65:35. The average length of stay has only increased by 11 weeks in the period of 2000 to 2008 from 137 to 148 (Australian Institute of Health and Welfare, 2009c, p. 19). In 2001, four out of five clients were separated from residential aged care due to death and four percent returned to the community (Australian Institute of Health and Welfare, 2002, p. 60) compared with 2008 when 89% died and only 3% returned to the community (Australian Institute of Health and Welfare, 2009c, p. 20). Residential aged care clients now require more sub-acute care than ever before (Productivity Commission, 2010), and therefore might benefit from a case management model suited to the aged care setting. To provide a model suitable for this setting, case management staff need to be competent in assessing, planning, supporting and evaluating dynamic care needs; elements critical to case management (Vasquez, 2009).

Case Management is highly relevant to aged care given the increasing prevalence of dementia in this setting (Australian Institute of Health and Welfare, 2007b). Half of the 27,015 residential aged care clients in this study had a diagnosis of dementia, which is consistent with 2008 ACFI data depression (Australian Institute of Health and Welfare, 2009c, p. 130), and this number is expected to double by 2031 (Access Economics, 2010). The study data also revealed that four out of every five high care clients in the

study sample displayed aggression or had a history of aggressive behaviour, equating to one in five clients overall (~25,500 nationally), confirming published findings that three of every five clients in a high care facility demonstrated indirect harmful behaviour at least weekly (Draper, Brodaty, & Low, 2002). Given that the Managers reported that Care Workers only had satisfactory knowledge of dementia and one in four had poor or very poor capabilities to manage aggressive clients, these findings need to be considered when recommending a case management model for the aged care sector. Pursuing this model will be unsuccessful unless there is a re-conceptualisation of aged care staffing levels, education levels and (Snowdon, Vaughan, & Miller, 1995; Snowdon, 2001). Facilities where case management was occurring indicated they had higher numbers of care staff with significantly better knowledge of dementia and higher capabilities to manage challenging behaviours (Table 5.30), revealing Managers' acknowledgement of these requirements to mount and sustain case management in residential aged care.

Case management for clients with palliative care needs has not been well published, although limited reports are consistent with its overarching goals including; resource minimisation (Back, Li, & Sales, 2005), improved quality of life (Aiken et al., 2006), and improved access to services (Mahony et al., 2008). In residential aged care facilities palliative care is constant among clients, with this study affirming that approximately six percent of clients were receiving palliative care intervention at the time of data collection. Almost three quarters of low care Facility Managers in the Hunter region of New South Wales reported to have had up to ten clients receiving palliative care at one time (Rohr, et al., 2003), and this was not associated with the size of facility. One quarter of Care Workers at the time of the survey had to assess client's need for breakthrough medication out of normal business hours (Rohr, et al., 2003). This is concerning when only one quarter of this study's Care Workers were identified as having very good or good knowledge of pain management strategies or palliative care, combined with poor capabilities to initiative care. The implementation of case management for highly specific target groups such as this has been successful in the past (Bjorkman & Hansson, 2007; Hutt, et al., 2004; Leung, Yau, et al., 2004; Sadowski, et al., 2009; Schraeder, et al., 2008), however the skill capabilities of this workforce will need to be improved exponentially in order to enhance the likelihood of better client and system outcomes.

Given that the acuity and needs of the aged care population are continuing to grow in an environment of diminishing resources, the sector remains in a state of crisis (Cheek, et al., 2003). This is a situation that impacts on care quality (Marshall, 2006; Tuckett, et al., 2009), and was confirmed by study respondents. A substantial policy shift is therefore required to drive realistic funding allocation for the provision of care through policy reform including that of case management strategies. Despite this, one should share Bruen's (2005) optimism about the future of the sector as recognising the enthusiastic and innovative staff and their capability to endure significant change.

### 6.2.2 Critique of Case Management Models as Relevant to the Sector (Objective ii)

The research on case management is extensive, however there are a number of methodological limitations identified in the reports of effective case management models which inhibit their applicability to the residential aged care sector. The majority of studies were conducted in the acute and community care sectors and none were directly relevant to the residential aged care population, or within an Australian context. Chapter Three identified the limitations of the case management studies reported, with the majority of them revealing higher than acceptable bias (Higgins & Green, 2009) in sampling and data interpretation (Bernabei, et al., 1998; Bond, et al., 1988), recognition of study limitations (Bjorkman & Hansson, 2007; Schraeder, et al., 2008), variable levels of methodological rigor (Oshima, et al., 2004) and poor description of the case management implementation (Browne & Braun, 2001; Yau, et al., 2005). Quality studies of case management were listed in Table 3.4, being well designed with minimal risk of bias, and reporting a positive impact on the target population and the system in which case management was occurring. These studies revealed similar factors present in effective case management models, including elements of a caseload, the presence of a Case Manager, inter-professional and client engagement in case management, crisis intervention and allocation of resources for case management (Table 3.6), and confirmed by a review of RCTs of case management (Table 3.8). The RCTs illuminated common themes and outcomes reported in other studies, providing strong evidence for case management in a range of health contexts. Better outcomes of case management included trends in reduced hospital presentation and admissions, length of stay and overall cost of treatment (Table 3.7). Improvements in outcomes through case management align well with Australian governments' agendas for more effective health and aged care systems and are further enhanced by positive outcomes for health care consumers (Table 3.9). Some of the reported improvements arising from case management were quality of care, quality of life, client satisfaction,

medication compliance, functional capabilities, and active engagement in the provision of care, as well as decreased mortality and severity of condition (Table 3.9).

Of the 21 case management Models reviewed, only four specialised in the needs of the frail older person, and each of these four were used for episodic care events, thereby limiting the scope for a continuum of care model. The EverCare Model was reported as episodic, but was applicable to a continuum of care model if required. Further analysis of better known case management models identified six others suitable for use in the residential aged care setting. Section 3.5.7 summarised the case management models and their elements that have some applicability for residential aged care. While each of these models provided information to recommend case management design and application for Australian residential aged care not one of them was entirely suitable because of the structural, funding and workforce characteristics unique to the Australian context. The synthesis of Chapter Three case management findings informed the study survey design and the development of the proposed case management model suitable for Australian residential aged care. In the process of developing a suitable case management model a cross sectional survey of the issues influencing the Australian, residential aged care sector was undertaken.

### 6.2.3 Investigation into Case Management Used by the Sector (Objective iii)

The third research objective was to identify the extent to which case management was occurring in the aged care sector. The sector is distinguished by a largely a frail, unwell and complex older population which is inadequately supported by available funding, where client to staff ratios are excessively high and staff skills are inadequate for the work required of them, and policy dictums drive the allocation of resources. While the sector might benefit from a case management model, the identified structural barriers (including; funding, workforce capability and retention, and allied health and medical practitioner engagement) will first need to be addressed. It is, therefore, understandable that only half of all facilities were practising elements of case management.

Case management appears to be largely misunderstood by the residential aged care managers surveyed. Seven out of every ten Facility Managers stated that case management was being employed in their facilities, but when reviewed against the case management profile adopted for this study, very few of the case management models being employed included all the criteria.

According to the study criteria, the principles of case management were practised in almost one third of Australian residential aged facilities. This cohort of facilities were identified to be financially more effective and were more capable of managing a more skilled workforce, where workload was reduced and staff had increased morale and cohesion as a team. These facilities employed care staff with increased skills and knowledge capabilities. Additionally, in a sector where resource maximisation and support is paramount, these facilities demonstrated increased inter-professional collaboration. While the notion of case management is becoming common knowledge in the aged care sector, considerable effort to standardise these practices is needed, given the Facility Manager's misunderstanding of the essential case management elements. Leadership, vision and guidelines on what a comprehensive assessment of case management should include have been identified as areas for further development.

One of the reasons why there is such a discrepancy between Managers' perceptions of case management achievement relates to the common misunderstanding that case conferencing is the essentially the same as case management. Nine out of ten facilities undertook case conferences, many as a substitute for case management, compared with a small number of facilities employing case management according to the study criteria. Aside from an increase in the number of high care clients able to be accommodated by the facility. There was no confirmation in the study that case conferences had any more positive outcomes for clients than case management. While the benefit of case conferencing was the opportunity to evaluate client need and care requirements, and to liaise more fully with stakeholders, it was identified that regular communication with key stakeholders including clients is likely to be far more effective than case conferences, a finding supported by Cudney and VanTuyle (2001), and Halcomb et.al. (2006). The communication processes among the health team, including allied health professionals and Medical Practitioners, as advocated through case management, is a key ingredient for positive care outcomes.

Facilities employing case management procedures that met the criteria had budgets that were more reflective of clients' needs, reduced staff workloads and increased staff teamwork and morale. According to study respondents, RNs in these facilities also had better knowledge of clinical care for clients. Care and Care Workers (Advanced) were more skilled in assessment, evaluation, documentation, medication administration,

managing challenging behaviours, more knowledgeable about clinical care, continence, palliative care and pain management, and demonstrated increased initiative and leadership capabilities, compared to the 'non-case management' cohort. This supported the proposition that case management was associated with having more skilled and knowledgeable staff. They also had more frequent and effective inter-professional client attendance, supporting case management as a strategy to improve staff collaboration (Geary, Cale, Quinn, & Winchell, 2009; Goode, 1995).

Another disadvantage of reliance on case conferencing is that Medical Practitioners are not fully committed to the benefits as an effective means for addressing clients' needs. Only three of every five Medical Practitioners were reported by Facility Managers to be attending case conferences in order to meet clients' needs (Table 5.6). This is a disappointing finding given the Australian Government has supported Medical Practitioners to be more involved in inter-professional case conferences in residential aged care facilities for over a decade through the Enhanced Primary Care initiatives (Royal College of General Practitioners, 2005). Medical Practitioners have been able to charge the Government between \$85.60 and \$171.15 for each case conference attended, with up to 85% claimable through Medicare rebates (Commonwealth of Australia, 2008a). This incentive has not achieved the desired outcome of encouraging medical practitioners' participation in case conferences in the sector (Royal College of General Practitioners, 2005). This may be because of time limitations (Olbort et al., 2009) and also the cost of taking time away from their practices to discuss a client's assessed needs and plan for care. While Medical Practitioners may need to collaborate more with key stakeholders to achieve improved client care outcomes (Harris, 2002), the study found that case management might have more attraction to GPs, so long as there are mechanisms established for more flexible and regular effective communication approaches.

#### 6.2.4 Identification of a Potential Model of Case Management (Objective iv)

As noted above, case management as defined by the study criteria was only being practised in a small number of participating residential aged care facilities. Implementation and execution of case management was varied and there were misinterpretations around the terms case conferencing and case management. Subsequent to the analysis of a variety of case management models in Chapter Three and in consideration of the unique environment of Australian residential aged care, a distinctive model is required to ensure acceptance, relevance and viability. One of the



essential elements of a suitable case management model is that it must be flexible enough to be adopted within frequently inflexible, yet dynamic and challenging settings. The Model needs to be well communicated and developed within a strong change process to ensure its processes are rigorous, adaptable and self-supporting. As previously identified in Table 3.10, a variety of case management models were examined against elements highlighted in Table 3.12.

Within the context of the integrative review within this study (Chapter Two), case management (Chapter Three) and the data presented (Chapter Five) a synthesis of ideas and concepts emerged, as illustrated in Figure 6.3. The Collaborative Case Management Model (CCCMM) was subsequently developed as suitable for this setting, using a continuum of care principle. This Model seeks to provide a viable and evidenced-based framework for care planning, delivery and evaluation. The subsequent section draws together previous literature with particular relevance to the sector and to this Model.



Figure 6.3: Collaborative Care Case Management Model

#### 6.2.5.1 Collaboration

Central to all case management models is the client at the centre, with outcomes focused on and directly involving the client and/or carers where possible (Clemens, et

al., 1994; Fricke, 2006). Many models exist with the client and key stakeholders being central however there needs to be a firm commitment to this strategy in practice (Table 3.5). Without effective and considered involvement of clients and key stakeholders the necessary individualised plan of care is at risk of becoming routine and habitual. Effective staff collaboration will meet the client's expectations of care continuity and individualised approaches (McCormack, Mitchell, Cook, Reed, & Childs, 2008). Client and carer satisfaction were significantly improved in one interprofessional acute care study (Lindhardt, Nyberg, & Hallberg, 2008). Other studies have demonstrated linkages between collaboration, and reduced morbidity (Davenport, Henderson, Mosca, Khuri, & Mentzer, 2007), improved quality of care (Davies & Cripacc, 2008) and client safety (Grossman & Bautista, 2002).

An inter-professional approach is necessary (Flicker, 2000; Hickman, et al., 2007), with the Case Manager or Coordinator communicating with clients and their carer at least weekly, and with key stakeholders at least monthly. Where clients are hospitalized or not in routine care for an extended period, the Case Manager should make contact more frequent contact (Schraeder, et al., 2008). Effective and regular communication is likely to reduce the number of grievances expressed by family carers and clients (Spooner & Yockey, 1997) and ensure a more collaborative approach in care services. Where facilities prefer to conduct case conferences, these should be in addition to these regular collaboration approaches. Each of the key case management elements identified must work in unison to achieve planned client outcomes in the most effective way (Anderson & Tredway, 1999; Mateo & Newton, 1996; Oshima, et al., 2004). While the Case Manager is central to implementing case management, all staff will need to support the model to achieve success (Craig & Huber, 2007) given the pressures and limitations occurring in the residential aged care sector (Cameron, 2003; Jeon, Glasgow, Merlyn, & Sansoni, 2010; Truscott, 2007).

#### *6.2.5.2 Preparation*

Preparation remains pivotal to any change management strategy, and this is highlighted in case management as being a key component to its development and successful outcomes. Aspects of preparation that have been flagged throughout this study include organisational vision, residential aged care pathways and case outcomes and measures. It is these elements that will promote improved service provision to the frail and elderly in residential aged care facilities.

There was a great deal of uncertainty among Facility Managers regarding their knowledge of organisational vision and its alliance with case management. One quarter of the sector demonstrated no firm commitment in their vision/mission statements to case management, despite the need for close articulation between the two (Aliotta, 1996; Intagliata, 1982; Johnson & Proffitt, 1995; Powell, 2003). A vision should be both well articulated and realistic (Horner & Boldy, 2006; Terra, 2007), and supported by short and long term goals (Aliotta, 1996; Powell, 2003).

Care plans are an integral component in residential aged care facilities, and the majority of facilities surveyed were using care plans. Limitations exist however with care plans in demonstrating evidenced-based practices and variance tracking (Ireson, 1997; Rotter, et al., 2008), hence the move towards Residential Aged care Pathways (RAPs). Pathways are a mechanism for improving quality and continuity of care, effective inter-professional and client/carer collaboration and cost reduction (Hyett, Podosky, Santamaria, & Ham, 2007; Ignatavicius & Hausman, 1995; Schriefer & Botter, 2001; Sesperez, et al., 2001; Yaksic, et al., 1996). Pathways (such as wound management, challenging behavioural management and weight loss) are a valuable component to case management, as they inform contemporary evidenced based care practices and ensure implementation of organisational procedures.

Within the case management literature, the importance of developing outcomes with baseline comparisons has been highlighted (Cesta & Falter, 1999; Dewing, 1997; Powell, 2000), and a specific foci within the Collaborative Care Case Management Model (CCCMM) is Case Outcomes and Measures (COMs). Developing outcomes with baseline comparisons is necessary both for evaluation and monitoring purposes (Cesta & Falter, 1999; Dewing, 1997; Powell, 2000). The COM element indicates that outcomes need to be focused and measurable to achieve case management goals, and aligned to the organisational vision (Powell, 2000; Taylor, 1999), following the trend in 'outcomes management'. Outcomes and measures need to be developed, agreed upon, and evaluated prior to the commencement of a case management model to benchmark for later reference and comparison. Case Outcomes and Measures need to focus on more than cost reduction and shortening clients' length of stay as emphasised in Chapter Three. Notable COMs include clinical, functional, satisfaction and financial (Aliotta, 2000; Dewing, 1997; McGettigan, 2003; Powell, 2000; Salazar & Graham, 1999; Zhan & Miller, 2003a). Clinical COMs may include: prevalence of restraints, pressures areas, skin tears, medication errors, client changes in weight,

frequency of case conferences, phone conversations and Medical Practitioner visits. Functional COMs such as pain scores, range of movement, independence and activities of daily living are useful indications of client outcomes available within the scope of case management. Staff client and family satisfaction surveys, staff turnover, client activities, education levels staff, number of complaints, time take to answer call/buzzer systems may be considered to assess the success of COMs. COMs with financial implications may include: number of bed days, time spent with clients, time spent with family, accreditation and documentation review results, staffing hours, number of absences, adherence to care plans and facility policies. Data gathering and evaluation should be built into roles and systems, while remaining with the Case Manager to report and act upon. Strategic benchmarking of outcomes seek to assist Case Managers and staff to recognise client needs and weaknesses within established, systems to improve client care (Davies & Cripacc, 2008).

#### *6.2.5.3 Implementation*

The Case Management Model needs to be suitable for use within a particular environment rather than the environment manipulated to fit it. Hence, there is a need for flexibility within the Collaborative Care Case Management Model (CCCMM). Roles, procedures and resources should be well embedded in case management practices and communicated prior to implementation (Cox & Albisu, 2001; Gibbs, 1999; Muller, 2004; Sinnen & Schifalacqua, 1991). An organisational case management committee should be implemented with scheduled meetings at least quarterly, and monthly in the implementation stage. Frequent staff meetings and client/key stakeholder meetings prior to and during implementation will facilitate discussion of ideas and grievances (Devine, 2004).

A change in job title and role is simply not enough to implement an effective case management model as recruitment and selection of the right person to take on the Case Manager role is critical. This is one of the most significant conflicting areas for case management implementation where best practice (ideal person, adequate supervision and education, highly skilled Case Managers, sufficiently resourced with time and equipment, recruitment through peer evaluation, clear role and reporting mechanisms) is challenged with the reality (budget limitations on time, high workload, role is in addition to current, resourcing, recruitment and less than ideal skill capabilities) (Henning & Cohen, 2008; Shefter, 2006; Smith & Spinella, 1995; Strzelecki & Brobst, 1997; Taylor, 1999). In consideration of the reality of structural

limitations, what is proposed within this Model is somewhat idealistic. The recommended Model needs to be flexible enough to allow goal setting approaches to work towards improved practice while remaining realistic to current and imminent limitations. Fundamentally, whether resourced from inside or outside the facility, Case Managers must demonstrate a commitment to the position, be willing to continue skill and knowledge development, including good leadership (Aliotta, 1996) and assessment capability (Huston, 2002; Jensen & Bowman, 2002).

Client assessment and care planning, implementation and evaluation provide a foundation for holistic client care. A comprehensive assessment completed on admission, with re-evaluation and re-assessment over time, is necessary to ensure continued quality of care (Marek & Rantz, 2000; Zink, 2005). This study (Chapter 5.4.2.1 and Table F.4) identified the lack of care evaluation occurring in residential aged care, a finding not isolated to the sector (Evans, et al., 2005; Rothman, 1991). The underpinning success of such an assessment rests solely with a Case Manager's ability to conduct and interpret the data obtained from client assessment, regardless of the tools/assessment processes used. Case Managers must demonstrate comprehensive assessment, planning, implementation and evaluation skills (Case Management Society of America, 2002; Evans, et al., 2005; Intagliata, 1982; Roberts, et al., 2007; Schaefer & Davis, 2004; Yau, et al., 2005). Importantly, this study identified that 80% of RNs had very good or good assessment and evaluation skills, documentation and initiation of care. This reduced to only two out of three Care Workers (Adv.) in all of these areas. This study therefore asserts that there are competent staff already working in the sector.

The allocation of caseload is common practice within facilities actively conducting case management. This occurred in three out of five facilities that reported case management practices in their facility, and was principally undertaken by an RN. Registered Nurse staff were typically allocated two clients each hour they worked, and were allocated 30 minutes per client per week 'off the floor' to case manage. Within the proposed Collaborative Care Case Management Model, there should be a minimum of three Case Managers allocated per facility, where a Case Manager would be allocated a maximum of 20 clients (Rapp & Goscha, 2004), requiring a minimum of 20 hours per week off the floor for the case management role. While this is an ideal condition, current practice as reflected in the study shows the ideal is not unrealistic, or unachievable. Given the acuity levels of clients, the unique milieu of residential aged

care and the skill mix challenges already presented in this study, all clients should be case managed to ensure their complete care needs are planned for and met. Minimal use of part-time staff would be advantageous, however this may be unrealistic in light of workforce trends (Australian Institute of Health and Welfare, 2008d). Small caseloads do not predicate success (Rapp & Goscha, 2004), however large caseloads can lead to adverse outcomes (Aliotta, 1996; King, et al., 2004; Simpson, et al., 2003). Each Case Manager should be accountable for two Case Coordinators (minimum Certificate III qualification (Taylor, 1999)) who would each support a caseload of ten clients each and assist with implementation of care implementation and collaboration mechanisms. Where this is unable to be directly implemented, mechanisms such as allocation of resources, mentoring to increase skill and leadership capability should be considered. Furthermore, a reduction in both caseload and its intensity must be adequately planned for where less than ideal circumstances occur.

Caseload intensity factor is a concept considered within the case management literature (Craig & Huber, 2007; King, et al., 2004; Muir-Cochrane, 2001) as a means of expressing the fluctuating care needs of clients and resource or administrative requirements; hence not all clients at any one time should require intensive daily case management interventions. Caseload intensity takes into account: contact frequency, client acuity, caseload maturity, administrative roles and data reporting processes and the Case Manager's competency (Craig & Huber, 2007; King, et al., 2004; Simpson, et al., 2003; Strassner, 1996; Waite, et al., 1997). Muir-Cochrane's (2001) caseload intensity figures for an Australian mental health case management model, were adapted for residential aged care facilities based on this study's findings. Sector intensity should be: 30% intensive (daily visits for new admissions, unstable/unwell and palliative care); 65% maintenance (weekly visits for clients who require ongoing monitoring and are progressing towards long term goals); and five percent low maintenance (monthly visits for long term and very stable clients). According to the study (Chapter 5.4.2.2 and Table F.6 and F.7) Managers the percentages aligned to the caseload presented above are realistic for the sector and Case Manager capability. Awareness and monitoring of caseload are relevant to Case Manager outcomes and the case management model adopted.

The discipline most involved in providing and supervising care should be the one that is case managing (Zink, 2001). In residential aged care, case management would be best suited to either the RN or Facility Manager, as reflected in the study data. This

becomes complicated where the Manager is the only RN available, as multiple role responsibilities are required. In the present study, three-quarters of facilities utilised the RN staff to case manage, so their workload would be impacted by the role. In these cases taking on the case management role would be an additional non-budgeted responsibility, which may not be achievable without allocation of additional staff resources. Consequently, Case Managers may fail to undertake the role effectively because they are juggling many competing roles (Aliotta, 1996; Beilman, et al., 1998; McGettigan, 2003; Perry, et al., 2003; Reimanis, et al., 2001). A number of useful research publications (>40%) identified in Table 3.3, presented the RN as the Case Manager, who is strongly recommended to have a Bachelor degree (Bryan, Dickerson, Fleming, Gholston, & Thompson, 1994; Cesta & Tahan, 2003; Cohen & Cesta, 2005; Dunn, et al., 2001; Schmitt, 2005; Weiss, 1998). A previous Australian study reported that only one out of ten RN/EN staff had completed post registration education in aged care (Richardson & Martin, 2004), so clearly the majority of RNs and ENs working in aged care would be considered ill-equipped to take on the case management role. The lack of RN preparation for the role suggests a need to both research and upgrade the level of training in case management for those suited to the role. The EverCare Model supported the utilisation of a Nurse Practitioner role in community settings and residential aged care facilities. While this could be a desirable goal for Australia, this would be unachievable given the few nurses who have obtained this qualification for the aged care sector. As well should this model be pursued by aged care facilities, it would be costly for aged care facilities, and would need careful planning if implemented (Gravelle, et al., 2007; Kane, et al., 2001). Hence, in the Collaborative Care Case Management Model (CCCMM), it is suggested that case management be provided by RNs, rather than Nurse Practitioners. Nevertheless, these RNs would need to have sufficient education and supervision in the case management role.

Based on a systematic review of RNs in aged care it was evident that the sector was viewed by them to be a step down from the acute care sector and aligned to a transition to retirement (Chenoweth et al, 2009). This barrier is further emphasised by challenges in filling these roles currently (National Institute of Labour Studies, 2008), let alone a Case Manager role. An ideal position description is attached in Appendix G, however the outcome specific indicators (Peterson, 2004; Strassner, 1996; Whywialowski, 2004) may be a deterrent for the 'rare' available RN entering the sector. This is further complicated by a possible expectation that this role is more than what is required by a more traditional RN role in residential aged care. Whilst a facility budget

would not normally support additional remuneration for the case management role, in the United States this role has been recognised as requiring greater skills and frequently paid at a Clinical Nurse Specialist level (Conger & Craig, 1998; Conger, 1996; Sullivan et al., 1992). Whilst appointing at this staff level would encourage recruitment of suitably qualified staff and foster research, evidence-based practice / practice development initiatives, there remains budget challenges given that more than a third of Managers had a budget that did not meet their clients' needs.

Case presentation meetings are recommended as an initiative to develop a learning organisation and support active learner engagement and leadership development (Philip, Unruh, Lachman, & Pawlina, 2008). Active participation in case presentation meetings has been shown to assist Case Managers and staff to question practice, argue for particular care processes, and positively influence a learning environment. In an interesting study conducted by Scherer, Bruce and Runkawatt (2007), case presentation was tested with a control group to compare outcomes with a treatment group using a clinical simulation activity in managing a cardiac event. While the clinical simulation group reported increased confidence, both groups had very similar outcomes related to knowledge and confidence. Nevertheless, the case presentation group benefited from the problem solving process which supported critical thinking behaviours, skills necessary for case management. When conducting case presentation meetings staff would be able to share in client assessment and planning activities through access to meeting minutes and action plans. Meetings and minutes would focus on a variation of client need, which may be supported by inviting an expert in the area for advice and to mediate ideas (for example: aggression management, settling new clients, resistance to care, wound management). To progress this approach, care staff could be encouraged to develop a professional portfolio to develop critical decision making skills, support evidenced-based practices, and actively engage in their areas of expertise (Cangelosi, 2008; Scholes et al., 2004). Given the limitations identified with implementing case management in the Australian residential aged care sector, case presentations might be more feasible over the longer term, however these may be best viewed as a part of the education calendar to address specific care issues.

In summary, the recommended CCCMM is an ideal model to utilise as a goal for care planning and management, and a focused strategy for continuous improvement in care delivery. The benefits of case management as identified by comparing the criteria-



based case management populations (Table 5.23) indicated that these facilities operated with a budget more likely to address clients needs, and with reduced staff workload, increased staff morale and teamwork, overall improved care staff skill and knowledge (particularly notable was improved leadership capability), and increased attendance and effectiveness of health professionals to meet clients needs. Individually and/or combined, these factors support the development of a quality care model. Therefore, case management is considered a reasonable strategy to improve care planning, management and client outcomes in the aged care sector. However the challenge of implementing the case management model in the sector is real, given the sector is distinguished by inadequate resourcing, reduced staff numbers and skill sets and very high staff workloads for managers, RNs and care staff. Despite this, three quarters of the study population reported that they were planning to improve in case management within the subsequent year, thereby supporting the inherent passion and dedication of this sector to actively seek opportunities to improve.

### **6.3 Strengths and Limitations of the Study**

This is the first study to undertake a cross sectional comparative analysis of a population using a criteria-based assessment on case management implementation in residential aged care facilities in Australia. Very few studies have identified the key elements of case management suitable for use in health care (Rapp & Goscha, 2004; Thornicroft, 1991), and none has previously been conducted in the Australian residential aged care sector. This study has drawn upon data from a large sample of Australian aged care facilities and highlighted an extensive list of issues and pressures influencing the sector. Aside from accessing the voices of study respondents the strengths of this study are that the survey occurred at a time when the concept of case management in the residential aged care sector was rapidly gaining interest and many facilities were considering implementation. Strength lies in the data obtained relating to workforce characteristics, work practices and pressures, client characteristics and evidence for rising client acuity in these facilities. These data both support and extend official reports about the sector.

There are also methodological limitations to consider when examining the study findings, namely; the lack of qualitative data to confirm responses, survey design, low response rate, and lack of measurable clinical data however the latter was not the aim of the study. The main limitation was reliance on empirical data to investigate the characteristics of staff, client and management from the point of view of Facility

Managers. The study design and related survey instrument revealed some flaws as the findings were analysed. A number of changes to the survey instrument are therefore, recommended and include:

- rewording the case ratio and loading question as it was too confusing and had too many different interpretations despite specific changes made in the pilot
- surveying a wider variety of key stakeholders, including the client, in the case conferencing questions, as indicated in Table 5.4
- making the case management training more specific to indicate numbers of staff with qualifications and what was included in their training, including orientation
- aligning geographical locations to current Aged Care Accreditation and Standards Agency classifications for improving assessment of national representation; and including the Aged Care Funding Instrument (ACFI) numbers
- breaking down specific types of challenging behaviours occurring with clients
- identifying staff's knowledge of depression
- excluding the question of amount of one-on-one time spent with clients because of anomalies in responses provided
- including an item on specific information about staff turnover and amount of over time worked (paid and unpaid)
- allocating more space for respondent comments and posing open ended questions.

The inclusion of more outcome-based questions would have assisted in further interpretation of the data. Although not aligned with the study objectives, the inclusion of these variables would have enabled a series of correlation analyses, subsequent evaluation or comparative analysis. Further to this, a mixed method approach to data collection, such as Facility Manager interviews and observational approaches may have assisted to verify, clarify and extend survey responses in order to develop a more comprehensive insight into the sector and the factors that support and inhibit the use of case management.

The second study limitation was the low response rate, considered a bias in the data generated. The smaller than hoped for dataset could not be increased due to anonymity of aged care Facility Manager respondents, preventing any follow-up of non-

responders. Only a few national surveys within the residential aged care sector, each supported by Commonwealth funding and resources, have reported better response rates - 31%- (Hogan, 2004); 62.5%- (National Institute of Labour Studies, 2004); 24%- (Thornton, 2008b). Ideally, surveys should be coded for facility location to assist with follow-up. The response rate along with a lack of generalisability across many demographic data sets has therefore limited the analysis of data. Limitations also existed with obtaining data about residential aged care accreditation status due to the small numbers of facilities who reported only one and two year accreditation. With consideration given to these missing data, analyses of data continued because of the value that this information provided for the Australian residential aged care sector.

The third issue was that an evaluation of the cost benefits of case management was not obtained (although this was not a study aim). On reflection, this data would have been of value. Despite this lack of data, hypothesised cost calculations were conducted and compared with nationally available data sets. This study does not claim any financial modelling analysis or validity assessment of the sector. Rather, the data and cost calculations presented intend to highlight resource issues and support a platform for further research in the area of staffing profiles and client costing.

Overall, the reliability of the data should be carefully considered, especially in light that future studies need to ensure a mixed methodology framework to clarify meaning of data and evaluate implementation of the Model. Despite these limitations, this study has added to the knowledge base of a complex and unique area of health care that is facing ongoing complexities including the possibility of case management in the future, and has contributed new information, recommendations for further research and suggested guidelines for enabling quality residential aged care services.

#### **6.4 Recommendations for Future Research**

Future research of case management opportunities and practices should consider the inclusion of qualitative methods combined with surveys, for example interviews with 'on the floor' care staff and clients, observations of case management in action and document review of care plans and evaluation reports. Other designs of research would also aid in the conceptualisation of case management to develop a capability framework for the sector; these include case study and pre-post test designs. Due to the less than ideal response rate, and inability to follow-up non-responders, future survey research should consider strategies to increase the response rate such as

coding surveys for follow-up, follow-up mail outs and considering more flexible data collection methods, such as telephone interviews and/or online survey completion. These data sources would have provided a more complete data set, enabling greater understanding of the salient issues impacting on and supporting a case management model for the aged care sector. Additional data sets might have also facilitated further communication with respondents to clarify or elaborate on issues, which would have informed and therefore, given strength to the preferred model of case management.

This cross sectional analysis of the residential aged care sector provided some of the most recent trends in client acuity, staffing and skill mix. While the data indicated shortcomings in skill and knowledge areas for care staff, supplementary research is required to explore what makes for good or poor documentation, staff leadership, and evaluation processes. As these findings were limited in scope, further research needs to be undertaken on 'extra service' facilities, not only client and care outcomes, but also to identify characteristics and staff ratios.

'Ageing in Place' as a policy trend has seen much interest and resource focused initiatives, as highlighted in Chapter Two, however the study suggests that 'Ageing in Place' has not been rigorously evaluated. Skill mix and ratio of care to clients remain under much discussion in the sector. These have supported management concerns that 'Ageing in Place' is not sustainable given staff and resource inadequacies. An area of interest and concern is the self-reported over-estimation of one-on-one time staff spent with clients. Further research in this area using appropriate observational methods should be considered a priority, since care outcomes are strongly associated with opportunities for individualised care (Cohen-Mansfield, 1997).

Overall, more research needs to be undertaken into case management practices and outcomes in residential aged care, for example in relation to client care and functional capabilities. The data on caseloads further supports the previous research undertaken in this field, and it would be fruitful to validate these findings with further research. It is, therefore, recommended that the study be re-engaged with a longitudinal design for greater application of findings and trend analysis of the sector and case management implementation. The elements of the Collaborative Care Case Management Model (CCCMM) presented here should be considered for the sector given the international and national support for case management principles. Future research is recommended to implement and test the model in a range of residential aged care

settings to assess its applicability under different circumstances and the outcomes relevant to client care and quality of life.

## 6.5 Conclusion

Case management remains in its infancy as a framework for client care in Australian residential aged care facilities. Case management processes, as recommended within the Model outlined, has the potential to positively impact on care, standards, workplace practices and the staff skill base. It is however, a continuous and dynamic evolutionary process of achieving planned goals for the sector. Case management implementation is currently limited by the structural and policy frameworks that shape residential aged care and the many limitations identified by study respondents. Areas for improvement were identified at both functional and operational levels, including the lack of resources needed to support case management processes in the sector. From a financial perspective, Australian residential aged care has a limited lifespan in its current form if resourcing, education and support for increasing client acuity are not managed better into the near future. More research is needed in the sector to examine the impact of policy changes on client, staff and management outcomes, and resource requirements.

The study data confirmed that Australian residential aged care is under-resourced, and the majority of care staff lack the required skills and knowledge capabilities across many areas of practice, particularly in relation to assessing and meeting the client's complex care needs, in medication administration and in leadership. These skills will need to be improved to sustain the sector into the future, given the increasing acuity of clients, increasing size of facilities, growing documentation requirements and operational costs in providing care to our future ageing population. 'Ageing in Place' needs to be carefully evaluated prior to further policy initiatives in this direction, given the considerable concern expressed by Facility Managers for growing care service requirements for this ageing population. High client to staff ratios, high care needs and insufficient funding to meet these needs give rise to significant pressures in the sector, with potential impacts on the wider community. Inequities in staff resourcing were also noted, with 'extra service' facilities being resourced with significantly more care staff and operating with a richer skill mix than 'non extra service' facilities. These services were more likely to receive the full three-year accreditation. Since the Australian residential aged care accreditation process supports improved outcomes for facilities awarded the maximum three years accreditation, this is more likely to occur where there are lower client to staff ratios and greater staff skill mix; this anomaly needs further investigation.

Although residential aged care lacks many of the basic requirements to embed case management, the model that is the 'best fit' in principal for the sector is the Collaborative Care Case Management Model (CCCMM). To ensure this model has every opportunity to prove effective, the model's core elements need to be implemented and include: assessment, planning, implementation and evaluation; vision; caseload; the Case Manager; competence; collaboration opportunities, Case Outcomes and Measures (COMs); and Residential Aged care Pathways (RAPs) which can be further grouped under the domains of collaboration, preparation and implementation. Case management in the Australian residential aged care sector offers many opportunities for a staged implementation in the sector and future research opportunities both to evaluate practice and benchmark best practice.

# Chapter 7

## Conclusion

### 7.1 Introduction

Case management has been utilised across health systems internationally, in a wide range of environments, with varying levels of implementation, support and evaluation. Case management is an integrative and collaborative process of coordinating individual care through assessment, planning, implementation and evaluation. It is a behavioural and system intervention that can be regarded as value adding. In Australia, case management remains in its infancy, but could be considered in the future as the backbone of residential aged care.

The thesis initially provided context of residential aged care in Australia. A review of published case management models was then presented to explore the core elements of a model of care suitable for this health sector. An evaluation of a range of case management models was undertaken to identify an appropriate existing model relevant to residential aged care facilities in Australia, and/ or to more clearly locate the core elements that would inform the development of a suitable model. A draft case management model was subsequently developed and analysed for acceptability through a large national survey. The results of this survey were outlined and discussed with regard to the relevance of the selected case management model (CCCMM) in a sector identified as struggling to meet client care needs with inadequate resources.

This concluding chapter provides a brief overview of the issues arising from the study, as presented by summaries of each Chapter and implications for policy planning and development. Finally, a direction for case management in residential aged care is presented.

### 7.2 Summary of Major Findings

Chapter Two introduced the residential aged care sector as complex and challenging with significant internal and external pressures. An unprecedented ageing population will continue to present challenges for the sector. While the Aged Care Act (1997) has been in place for over 12 years, it remains a contemporary and evolving piece of legislation, and a review of accreditation frameworks and guidelines would be valuable



in light of funding revisions, and changing consumer and societal expectations. 'Ageing in Place' has been embraced by the health system, yet has not been rigorously evaluated for its impact on client outcomes or facility practices. The incidence of dementia in the older population is increasing and influencing the care provided to this client group, including growing exposure to challenging behaviours. Assessment and diagnosis of depression in older persons is also gaining recognition as an issue of concern, however remains largely unreported in the research literature. Research on incontinence is also sparse, but its relationship with quality of care requires a strategic commitment to ensure staff are suitably skilled. The development of a multicultural staffing and client population in the sector places enormous pressure on quality care initiatives and resourcing, particularly to ensure have the knowledge and skills to be culturally sensitivity. A dramatic revision of workforce structure is therefore necessary so that inadequate levels of funding do not continue to give rise to decreased staff skill mix and increased care staff to client ratios. The sector therefore faces a large number of pressures, some of which should be considered in light of case management initiatives and outcomes.

Chapter Three drew together the case management literature and published models of case management to develop a draft case management model for inclusion in the study survey. An integrative review of 44 case management studies and a systematic review of 13 randomised controlled trials of case management models indicated that case management is effective in reducing hospital length of stay and admissions, reducing healthcare costs, increasing clients' functional status and decreasing their service usage. The review also presented a thematic synthesis of other positive outcomes of case management, many of which were supported by statistically significant findings. A wide variety of case loads was noted across the case management models evaluated, although positive outcomes were more likely where the case load was less than 20. Case management was generally carried out by Registered Nurses; however there is a trend for utilisation of allied health professionals depending on the target population and the model employed. Collaboration between client and key stakeholders was viewed as paramount, and the strategies to develop these relationships varied. While case conferences were commonly utilised in the residential aged care setting, the critical element is for effective and regular communication between stakeholders. The implementation of case management requires a carefully planned and well-communicated lead-in time supported by a

comprehensive orientation program and policies and procedures, as well as critical pathways and outcome data.

The study method was described in Chapter Four. The study used a cross sectional comparative design and a criteria-based assessment, to examine associations between criteria and case management outcomes in the sector. The survey was distributed to Facility Managers of all federally funded residential aged care facilities in Australia. Many elements of the case management model were applied to the survey in order to draw through the application of case management in facilities.

Survey data were presented in Chapter Five, and highlighted the following major findings. Clients in residential aged care facilities have significant acute needs which require competent care staff; half of all clients had dementia, one fifth had challenging behaviours, one quarter had a diagnosis of depression, and four fifths of the clients were incontinent. Sixty-three percent of clients were classified as high care. A residential aged care facility's years of accreditation status, was associated with increased divergence between care plans and actual care practices and increased attendance by Medical Practitioners. Facilities with three years accreditation were also more likely to have increased staff morale and spent more one-on-one time with clients. Medical Practitioners were reported by Facility Managers to attend the least of other health professionals and be the least effective in meeting the needs of their clients.

A higher designation and qualification was statistically associated with an improved skill and knowledge capability in this sector. One in four Care Worker and Care Worker (Advanced) staff had poor medication administration practices. Care staff were reported by Facility Managers to be least skilled in the areas of leadership and managing aggressive behaviours. Care staff's knowledge of clinical care was statistically associated with improved medication administration practices. Where Facility Managers reported that their RNs demonstrated good leadership capabilities, the facility had increased congruency between care plans and actual care practices, decreased staff turnover and increased morale and teamwork. Additionally, in these facilities, staff were statistically better skilled and more knowledge across all areas assessed, compared to facilities with less than good leadership. Knowledge of palliative care was associated with application of pain management strategies.

Three out of four facilities were planning on improving in the area of case management. Three quarters of facilities conducted case conferences, the majority being undertaken annually. Facilities that reported case management in organisational vision statements, were more likely to have a budget that met the needs of facility clients. Seventy percent of facilities allocate RN qualified staff to Case Manager positions, but almost all allocated RNs lacked any formal education in case management.

The criteria-based assessment was used to explore the relationship between the case management cohort and those that were not. Less than one third of all facilities met the study criteria for case management. Managers in the case management group indicated that case management was in their organisation vision, utilised care plans or pathways, and had staff with satisfactory or better assessment, initiative, evaluation and documentation skills. The criteria-based case management cohort also had a budget more likely to reflect the clients' needs, reduced workload and increased staff morale and teamwork. The facility had an increased attendance and effectiveness of visiting health professionals to the facility, including Medical Practitioners. Registered Nurse staff had increased knowledge of clinical care in the elderly, and the Care Worker (Advanced) and Care Worker staff were statistically more skilled and knowledgeable in areas of; assessment, evaluation, documentation, leadership, knowledge of clinical care, continence, palliative care, pain management and improved medication administration practices. Undertaking case management was not associated with undertaking case conferences. These findings have direct implications on policy and planning decisions for both residential aged care in Australia, and for case management internationally.

### **7.3 Implications for Policy and Resourcing in Residential Aged Care**

The increasing acuity of clients residing in residential aged care facilities requires continued re-evaluation. Further financial support needs to support facilities identifying themselves as dementia-specific, and more education needs to cover dementia and aggression management in all facilities. Effective behaviour management strategies requires significant national commitment, both in resourcing and operationally, to address an increasing trend in difficult behaviours. Government funding needs to be reconsidered in light of a sector that is seemingly unable to continue to support an adequately skilled and staffed workforce given current funding arrangements. Further funding initiatives also need to evaluate 'extra service' facilities in light of their increased staffing and skill profiles evident from the study data. Sector commitment to

up-skilling residential care staff is critical, along with re-incorporating an increased utilisation of RNs. Given the data on medication practices of care staff, the effectiveness of current practices in medication administration must be questioned. Additional education should focus on increasing leadership capabilities in care staff. Facility Managers also need further support to better manage and delegate their high workload to achieve better work / life balance; this would indicate increased leadership and professional responsibility in their RN staff.

Case conferencing was not associated with improved facility outcomes, as presented in this study, as compared to the advantages of regular communication. This, combined with data indicating less than satisfactory attendance and effectiveness of Medical Practitioners in the sector, suggests that the case conferencing incentives currently utilised are not effective, nor efficient in addressing clients and facility needs. Financial initiatives for regular communication are therefore recommended.

#### **7.4 Recommendations for Progressing Case Management in Residential Aged Care**

The elements for effective implementation of case management as presented in the Collaborative Care Case Management Model (CCCMM) include collaboration, preparation and implementation. These explore more specifically: the effective utilisation of client and key stakeholders; comprehensive assessment and evaluation processes; strategic vision; allocation of case load; presence of a competent Case Manager and staff; Case Outcomes and Measures (COMs); and Residential Aged care Pathways (RAPs). The following strategic recommendations are presented to enable the implementation of case management in the Australian residential aged care sector, and the promotion of case management outcomes to improve care and facility practices in the sector (these are in addition to those presented in Chapter Six).

A re-evaluation of accreditation standards should include a commitment to assessing facilities leadership capacity, skill mix and effective collaboration with clients and key stakeholders. Facilities need to further develop their staff's leadership capabilities. There also needs to be a commitment to increasing the utilisation of RN staff in residential aged care facilities, for both high and low care clients. More effective communication mechanisms need to be considered within facilities, aside from case conferencing.

Registered Nurses need further support and resources to develop capabilities in delivering case management services and care to clients within residential aged care facilities. Registered Nurses need to be accountable for no more than twenty clients at a time, and need to be ensured of time and resources to undertake a Case Manager role.

Overall, case management in residential aged care facilities in Australia needs further commitment as a reliable and viable strategy for cost minimisation and maximising resources. Case Managers should be supported to seek national certification and develop specific competencies in the field. Further, education into case management needs to be rolled out at vocational and university sectors in flexible delivery modes to encourage uptake and completion of professional qualifications.

## **7.5 Conclusion**

Australian residential aged care continues to engage in significant and constant change. The older population are reported to have more acute health needs and are increasingly frail, whilst being more vigilant in asserting their rights as health consumers. The growing national ageing population is a reality and the Government continues to invest resources to meet their health and social needs, but the level of allocated resources does not appear to align with actual or expected needs of clients living in a residential aged care facility.

One Facility Manager wrote on a returned survey cover letter: "We have a staff shortage +++. Skill level is poor ... We need better funding and increased wages, as well as greater skilled staff". This quote illustrates both perspective and insight into the challenges faced on a daily basis within the residential aged care sector.

Case management is a strategy that can potentially improve the quality of care and outcomes for older persons in residential aged care facilities. Case management will also offer career pathways for non-regulated staff if they receive the right education and support to undertake the role, and professional career opportunities. Increased ratios of RNs and the instigation of Case Manager positions are needed to increase the profile and support the acuity evident in residential aged care sector clients. Higher levels of staff skill and proficiency are therefore also required. Case Management encourages increased client and carer involvement and makes better use of allied

health professionals, hence offering a more comprehensive and better informed level of service. While theories of case management continue to arouse interest, little has been done to evaluate case management within the Australian healthcare system. This study addressed this gap by investigating Facility Managers' reports of the incidence, application and outcomes of case management within the context of the Australian residential aged care sector.

## Reference List

- Abdallah, L., Fawcett, J., Kane, R., Dick, K., & Chen, J. (2005). Development and psychometric testing of the EverCare Nurse Practitioner Role and Activity Scale (ENPRAS). *J Am Acad Nurse Pract*, 17(1), 21-26.
- Abdallah, L. M. (2005). EverCare nurse practitioner practice activities: similarities and differences across five sites. *J Am Acad Nurse Pract*, 17(9), 355-362.
- Access Economics. (2008). Dementia Economic Impact Report. New Zealand: Alzheimers New Zealand Inc.
- Access Economics. (2009). Nurses in Residential Aged Care. Melbourne: Australian Nursing Federation.
- Access Economics. (2010). Caring Places: Planning for aged care and dementia 201-2050; Report for Alzheimers Australia: Alzhiemers Australia.
- Adams, V. (2009). Residential aged care nurses caring for dementia residents from culturally and linguistically diverse backgrounds. Adelaide: University of South Australia.
- Aged Care Standards and Accreditation Agency. (2007). Audit handbook for assessors (Agency, Aged Care Standards and Accreditation, Trans.). Sydney.
- AIDS Clinical Trials Group (ACTG) Outcome Committee. (1999). ACTG QOL 601-602 (QOL 601-2) Health Survey Manual (revised) Retrieved 16th September, 2009, from <https://www.fstrf.org/apps/cfm/apps/actg/html/QOLForms/manualql601-2799.pdf> >
- Aiken, L. H., Clarke, S. P., Silber, J. H., & Sloane, D. (2003). Hospital nurse staffing, education, and patient mortality. *LDI Issue Brief*, 9(2), 1-4.
- Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA*, 288(16), 1987-1993.
- Aiken, L. H., Havens, D. S., & Sloane, D. M. (2000). The Magnet Nursing Services Recognition Program. *Am J Nurs*, 100(3), 26-35; quiz 35-26.
- Aiken, L. S., Butner, J., Lockhart, C. A., Volk-Craft, B. E., Hamilton, G., & Williams, F. G. (2006). Outcome evaluation of a randomized trial of the PhoenixCare intervention: program of case management and coordinated care for the seriously chronically ill. *J Palliat Med*, 9(1), 111-126.
- Aksayan, S. (1990). *A study on the factors affecting the job satisfaction of the nurses working at preventative and curative health services and the related factors*. Doctorate, Istanbul University, Istanbul.

- Aliotta, S. L. (1995). Case management programs: investment in the future. *HMO Pract*, 9(4), 174-178.
- Aliotta, S. L. (1996). Components of a successful case management program. *Manag Care Q*, 4(2), 38-45.
- Aliotta, S. L. (2000). Focus on case management: linking outcomes and accountability. *Top Health Inf Manage*, 20(3), 11-16.
- Aliotta, S. L., Aubert, R. E., & Kirby, H. B. (1998). A managed care approach to high-risk screening and case management in the elderly. *Eff Clin Pract*, 1(2), 93-94.
- Allen, S., Chapman, Y., O'Connor, M., & Francis, K. (2008). The evolution of palliative care and the relevance to residential aged care: understanding the past to inform the future. *Collegian*, 15(4), 165-171.
- Allen, S., O'Connor, M., Chapman, Y., & Francis, K. (2008). Funding regimes and the implications for delivering quality palliative care nursing within residential aged care units in Australia. *Rural Remote Health*, 8(3), 903.
- Allred, C. A., Arford, P. H., Michel, Y., Dring, R., Carter, V., & Veitch, J. S. (1995). A cost-effectiveness analysis of acute care case management outcomes. *Nurs Econ*, 13(3), 129-136.
- Alzheimer's Australia. (2010). Budget Submission 2011.
- American Association of Colleges of Nursing. (2003). White Paper on the role of the Clinical Nurse Leader.
- American Healthcare Consultants. (2001). Case Management Case Load: Results of a National Survey. Chicago.
- American Nurses Association. (1988). Nursing Case Management (Vol. NS. 32). Kansas City.
- Amity Group. (2007). Vision Statement Retrieved 24th July, 2007, from [www.amitygroup.com.au](http://www.amitygroup.com.au)
- Anderson, C. A. (2002). Cultural competency (also known as nursing competency). *Nurs Outlook*, 50(5), 175.
- Anderson, M. A., & Tredway, C. A. (1999). Communication: an outcome of case management. *Nurs Case Manag*, 4(3), 104-111.
- Andreasen, N. C. (1982). Negative symptoms in schizophrenia. Definition and reliability. *Arch Gen Psychiatry*, 39(7), 784-788.
- Andrews-Hall, S., Howe, A., & Robinson, A. (2007). The dynamics of residential aged care in Australia: 8-year trends in admission, separations and dependency. *Aust Health Rev*, 31(4), 611-622.



- Andrews, G., & Sunderland, M. (2009). Telephone case management reduces both distress and psychiatric hospitalization. *Aust N Z J Psychiatry*, 43(9), 809-811.
- Andrews, Gavin, & Teesson, Maree. (1994). Smart versus dumb treatment: services for mental disorders. *Current Opinion in Psychiatry*, 7(2), 181-185.
- Angus, J., & Nay, R. (2003). The paradox of the Aged Care Act 1997: the marginalisation of nursing discourse. *Nursing Inquiry*, 10(2), 130-138.
- Arnold, D. (1987). The brokerage model of long-term care: a rose by any other name. *Home Health Care Serv Q*, 8(2), 23-43.
- Asberg, M., Perris, C., & Schalling, D. (1978). The CPRS - development and applications of a psychiatric rating scale. *Acta Psychiatrica Scandinavica*(Supplementary), 271.
- Aslan, E., Beji, N. K., Erkan, H. A., Yalcin, O., & Gungor, F. (2009). Urinary incontinence (UI) and quality of life (QoL) of the elderly residing in residential homes in Turkey. *Arch Gerontol Geriatr*, 49(2), 304-310.
- Astrom, S., Karlsson, S., Sandvide, A., Bucht, G., Eisemann, M., Norberg, A., & Saveman, B. I. (2004). Staff's experience of and the management of violent incidents in elderly care. *Scand J Caring Sci*, 18(4), 410-416.
- Attkisson, C. C., & Zwick, R. (1982). The client satisfaction questionnaire. Psychometric properties and correlations with service utilization and psychotherapy outcome. *Eval Program Plann*, 5(3), 233-237.
- Atwal, A., & Caldwell, K. (2002). Do multidisciplinary integrated care pathways improve interprofessional collaboration? *Scand J Caring Sci*, 16(4), 360-367.
- Australian Bureau of Statistics. (2006). *Population Projections: Australia 2006-2101*. (3222.0). Canberra.
- Australian Bureau of Statistics. (2007). *Census Tables: Australia (20680 - Industry of Employment by Year of Arrival in Australia by Proficiency in English)* Retrieved 19th May, 2008, from <http://www.censusdata.abs.gov.au>
- Australian Bureau of Statistics. (2008). *Population Projections: Australia 2006-2101*. (3222.0). Canberra.
- Australian Bureau of Statistics. (2009). *Australian Social Trends: Using statistics to paint a picture of Australian society*. (4102.0). Canberra.
- Australian Government. (2007). *National Statement on Ethical Conduct in Human Research*.
- Australian Institute of Health and Welfare. (1998). *Hostels in Australia 1996-97: A statistical overview*. Canberra.

- Australian Institute of Health and Welfare. (2000). *Disability and Ageing: Australian Population Patterns and Implications*. (DIS 19). Canberra.
- Australian Institute of Health and Welfare. (2002). Residential Aged Care Services in Australia 2000-01: A statistical overview. Canberra.
- Australian Institute of Health and Welfare. (2003). *Nursing labour force 2002* (HWL 29). Canberra.
- Australian Institute of Health and Welfare. (2007a). *Dementia in Australia; National data analysis and development*. (AGE 53). Canberra.
- Australian Institute of Health and Welfare. (2007b). *Older Australians at a Glance*. (AGE 532). Canberra.
- Australian Institute of Health and Welfare. (2007c). *Residential Aged Care in Australia 2005-2006: A statistical overview*. (AGE 54). Canberra.
- Australian Institute of Health and Welfare. (2008a). *Australia's Welfare 2007*. (AUS 93). Canberra.
- Australian Institute of Health and Welfare. (2008b). *Australians Health 2008*. (AUS 99). Canberra.
- Australian Institute of Health and Welfare. (2008c). *Movement from Hospital to Residential Aged Care: Preliminary Results*. (CSI 4). Canberra.
- Australian Institute of Health and Welfare. (2008d). *Nursing and Midwifery Labour Force 2005*. (HWL 40). Canberra.
- Australian Institute of Health and Welfare. (2008e). *Residential Aged Care in Australia 2006-2007: A statistical overview*. (AGE 56). Canberra.
- Australian Institute of Health and Welfare. (2009a). *Health and Community Services Labour Force 2006*. (HWL 43). Canberra.
- Australian Institute of Health and Welfare. (2009b). *Hospitalisations due to falls by older people, Australia 2005-06*. Adelaide: Australian Institute of Health and Welfare
- Australian Institute of Health and Welfare. (2009c). *Residential Aged Care in Australia 2007-2008: A statistical overview*. (AGE 58). Canberra: Retrieved from <http://www.aihw.gov.au/publications/age/age-58-10709/age-58-10709.pdf>.
- Australian Nursing and Midwifery Council. (2002). Principles for the Assessment of National Competency Standards for Registered and Enrolled Nurses. Canberra: ANMC.
- Back, A. L., Li, Y. F., & Sales, A. E. (2005). Impact of palliative care case management on resource use by patients dying of cancer at a Veterans Affairs medical center. *J Palliat Med*, 8(1), 26-35.

- Backus, L., Weinkove, J., Lucas, M., & Jespersen, S. (2008). Outcome of planned discharge from case management: a 3 year retrospective study. *Australas Psychiatry, 16*(1), 33-38.
- Bagley, H., Cordingley, L., Burns, A., Mozley, C. G., Sutcliffe, C., Challis, D., & Huxley, P. (2000). Recognition of depression by staff in nursing and residential homes. *J Clin Nurs, 9*(3), 445-450.
- Bailey, M. L. (1998). Care coordination in managed care. Creating a quality continuum for high risk elderly patients. *Nurs Case Manag, 3*(4), 172-180.
- Baker, F., & Intagliata, J. (1984). The New York State community support system: a profile of clients. *Hosp Community Psychiatry, 35*(1), 39-44.
- Baker, Roger, & Hall, John N. (1988). REHAB: A New Assessment Instrument for Chronic Psychiatric Patients. *Schizophr Bull, 14*(1), 97-111.
- Balstad, A., & Springer, P. (2006). Quantifying case management workloads: Development of the PACE tool. *Lippincotts Case Manag, 11*(6), 291-302; quiz 303-294.
- Baptist Community Services. (2007). BCS Mission and Values Retrieved 24th July, 2007, from [www.bcs.org.au](http://www.bcs.org.au)
- Barry, R., & Stein, I. (2005). Strategic workforce planning: residential aged care. [Journal]. *Geriatrics, 23*(1), 23-25.
- Beanland, C., Schneider, Z., LoBiondo-Wood, G., & Haber, J. (1999). *1st Australasian Edition Nursing Research: Methods, Critical Appraisal and Utilisation* (1st ed.). Sydney: Mosby.
- Beck, A., Rush, A., & Shaw, B. (1979). *Cognitive Therapy of Depression*. New York: Guilford Press.
- Bedell, J. R., Cohen, N. L., & Sullivan, A. (2000). Case management: the current best practices and the next generation of innovation. *Community Ment Health J, 36*(2), 179-194.
- Beeforth, M., Conlan, E., & Graley, R. (1994). Have We Got Views for You: User Evaluation of Case Management (pp. 20). London.
- Beilman, J. P., Sowell, R. L., Knox, M., & Phillips, K. D. (1998). Case management at what expense? A case study of the emotional costs of case management. *Nurs Case Manag, 3*(2), 89-95.
- Berger, M. L. (1988). Traits and Skills of the Nursing Case Management Team. In Howe, R.S. (Ed.), *Case Management for Healthcare Professionals*. Chicago: Precept Press.

- Bernabei, R., Landi, F., Gambassi, G., Sgadari, A., Zuccala, G., Mor, V., Rubenstein, L. Z., & Carbonin, P. (1998). Randomised trial of impact of model of integrated care and case management for older people living in the community. *BMJ*, *316*(7141), 1348-1351.
- Beyerman, K. (2001). Case management: finding the problem early. *Lippincotts Case Manag*, *6*(4), 169-176.
- Biala, K. Y. (2002). Case conferencing for wound care patients. *Home Healthc Nurse*, *20*(2), 120-125; quiz 126.
- Bigby, C. (2008). Beset by obstacles: a review of Australian policy development to support ageing in place for people with intellectual disability. *J Intellect Dev Disabil*, *33*(1), 76-86.
- Birmingham, J. (2004). Documentation: a guide for case managers. *Lippincotts Case Manag*, *9*(3), 155-157.
- Bjorkman, T., & Hansson, L. (2007). Case management for individuals with a severe mental illness: a 6-year follow-up study. *Int J Soc Psychiatry*, *53*(1), 12-22.
- Blaha, C., Robinson, J. M., Pugh, L. C., Bryan, Y., & Havens, D. S. (2000). Longitudinal nursing case management for elderly heart failure patients: notes from the field. *Nurs Case Manag*, *5*(1), 32-36.
- Blass, T. C., & Reed, T. L. (2003). Consider case management. *Nurs Manage*, *34*(10), 81-83.
- Blegen, M. A., Reiter, R. C., Goode, C. J., & Murphy, R. R. (1995). Outcomes of hospital-based managed care: a multivariate analysis of cost and quality. *Obstet Gynecol*, *86*(5), 809-814.
- Bond, G. R., Miller, L. D., Krumwied, R. D., & Ward, R. S. (1988). Assertive case management in three CMHCs: a controlled study. *Hosp Community Psychiatry*, *39*(4), 411-418.
- Boockvar, K. S., Gruber-Baldini, A. L., Burton, L., Zimmerman, S., May, C., & Magaziner, J. (2005). Outcomes of infection in nursing home residents with and without early hospital transfer. *J Am Geriatr Soc*, *53*(4), 590-596.
- Borland, A., McRae, J., & Lycan, C. (1989). Outcomes of five years of continuous intensive case management. *Hosp Community Psychiatry*, *40*(4), 369-376.
- Bourdeaux, L., Matthews, L., Richards, N. L., SanAgustin, G., Thomas, P., & Veltigian, S. (2005). Comparative study of case management program for patients with syncope. *J Nurs Care Qual*, *20*(2), 140-144.
- Bowler, M. (2008). Evaluating palliative care skills for community matrons. *Nurs Times*, *104*(38), 28-30.

- Bowler, M., Mayne, G., & Gamlin, R. (2009). Recognizing the importance of palliative care skills for community matrons. *Int J Palliat Nurs*, 15(2), 94-100.
- Bowling, A. (2005). Quantitative Social Science: The Survey. In Bowling, A. & Ebrahim, S. (Eds.), *Handbook of Health Research Methods: Investigation, Measurement and Analysis* U.S.A: McGraw Hill International
- Bradburn, N. M. (1963). Affect Balance Scale (pp. 2 p): Bradburn NM. The structure of psychological well-being. Chicago: Aldine Publishing Company; 1969. Available from Paul B. Sheatsley Library, NORC/University of Chicago, 1155 East Sixtieth Street, Chicago, IL 60637; (312)753-7679/7678/7500.
- Bradley, A. . (1995). Clinical Pathways - The Magic Formula to Quality or to the Confusion of the Buzzword Bandwagon. In Wilkinson, P. (Ed.), *Managed Care, Case Management and Nursing Australia* (pp. 178-186). Victoria: Australian Nursing Federation.
- Braithwaite, John. (2001). Regulating nursing homes: The challenge of regulating care for older people in Australia. *BMJ*, 323(7310), 443-446.
- Braithwaite, John (1998). Regulation and Quality in Aged Care: a Cross-National Perspective. *Australasian Journal on Ageing*, 17(4), 172-176.
- Brettell, A., Hill, A., & Jenkins, P. (2008). Counselling in primary care: a systematic review of the evidence. *Counselling & Psychotherapy Research*, 8(4), 207-214.
- Brewin, C. R., Wing, J. K., Mangen, S. P., Brugha, T. S., & MacCarthy, B. (1987). Principles and practice of measuring needs in the long-term mentally ill: the MRC needs for care assessment. *Psychol Med*, 17(4), 971-981.
- Brodaty, H., Draper, B. M., & Low, L. F. (2003). Behavioural and psychological symptoms of dementia: a seven-tiered model of service delivery. *Med J Aust*, 178(5), 231-234.
- Brodaty, H., & Low, L. F. (2003). Aggression in the elderly. *J Clin Psychiatry*, 64 Suppl 4, 36-43.
- Brodaty, H., Low, L. F., Gibson, L., & Burns, K. (2006). What is the best dementia screening instrument for general practitioners to use? *Am J Geriatr Psychiatry*, 14(5), 391-400.
- Browne, Colette V., & Braun, Kathryn L. (2001). When a Case Management Program Closes: Impact as Perceived by Frail Elders and Their Family Caregivers. *Journal of Applied Gerontology*, 20(3), 338-355.
- Bruen, W. (2005). Policy update. Aged care in Australia: Past, present and future. *Australasian Journal on Ageing*, 24(3), 130-133.

- Bryan, B., Dickerson, D., Fleming, M. A., Gholston, L., & Thompson, L. (1994). Nursing case management: affecting quality and cost. *Hosp Mater Manage Q*, 16(2), 63-75.
- Bryant, C. D. (2007). Demand management and case management: a conservation strategy. *Prof Case Manag*, 12(5), 272-280; quiz 281-272.
- Burholt, V., Windle, G., Ferring, D., Balducci, C., Fagerstrom, C., Thissen, F., Weber, G., & Wenger, G. C. (2007). Reliability and validity of the Older Americans Resources and Services (OARS) social resources scale in six European countries. *J Gerontol B Psychol Sci Soc Sci*, 62(6), S371-379.
- Burns, B. J., & Santos, A. B. (1995). Assertive community treatment: an update of randomized trials. *Psychiatr Serv*, 46(7), 669-675.
- Burns, T. (1996). Care management. Case management confers substantial benefits. *BMJ*, 312(7045), 1540.
- Burns, T. (1997). Case management, care management and care programming. *Br J Psychiatry*, 170, 393-395.
- Burns, T. (2002). The UK700 trial of Intensive Case Management: an overview and discussion. *World Psychiatry*, 1(3), 175-178.
- Burns, T., White, I., Byford, S., Fiander, M., Creed, F., & Fahy, T. (2002). Exposure to case management: relationships to patient characteristics and outcome. Report from the UK700 trial. *Br J Psychiatry*, 181, 236-241.
- Bush, C. T., Langford, M. W., Rosen, P., & Gott, W. (1990). Operation outreach: intensive case management for severely psychiatrically disabled adults. *Hosp Community Psychiatry*, 41(6), 647-649; discussion 649-651.
- Calhoun, J., & Casey, P. (2002). Redesigning case management in managed care: an eclectic approach: from city to ranch. *Lippincotts Case Manag*, 7(5), 180-188; quiz 189-191.
- Callaway, M. M. (1997). Integration in the real world. Practical aspects of integration in three diverse markets. *Healthc Forum J*, 40(2), 20-27.
- Cameron, I. D. (2003). Aged care issues and services in Australia. *Ann Acad Med Singapore*, 32(6), 723-727.
- Cangelosi, P. R. (2008). Learning portfolios: giving meaning to practice. *Nurse Educ*, 33(3), 125-127.
- Cantrell, M. A., & Lupinacci, P. (2007). Methodological issues in online data collection. *J Adv Nurs*, 60(5), 544-549.

- Carneal, G., & Gervais, M. E. (2006). Linking the power of information technology and case management interventions: an assessment of recent medical-management trends. *Case Manager*, 17(3), 38-44.
- Carr, D. D. (2000). Case management for the subacute patient in a skilled nursing facility. *Nurs Case Manag*, 5(2), 83-92.
- Carr, D. D. (2003). Case management as a triad in long-term care: a collaborative approach. *Lippincotts Case Manag*, 8(5), 224-227.
- Carretero, M. D., Burgess, A. P., Soler, P., Soler, M., & Catalan, J. (1996). Reliability and validity of an HIV-specific health-related quality-of-life measure for use with injecting drug users. *AIDS*, 10(14), 1699-1705.
- Carrigan, C. (2009). Who cares for the elderly? Aged care nurses do. *Aust Nurs J*, 16(11), 24-27.
- Case Management Society of America. (2002). National Standards of Practice for Case Management (Revised ed.). Little Rock: CMSA.
- Case Management Society of Australia. (2004). National Standards of Practice for Case Management. Victoria: Case Management Society of Australia.
- Case Management Society of Australia. (2006). Case Management and Community Care; A Discussion Paper.
- Castle, D. J. (2000). Comments on the UK700 case management trial. *Br J Psychiatry*, 177, 370-371.
- Catholic Healthcare. (2007). Mission Retrieved 24th July, 2007, from [www.chcs.com.au/about/mission](http://www.chcs.com.au/about/mission)
- Caudrey, David, & Dissinger, Marguerite. (2007). Health Support of People with Disabilities in South Australia: Innovations in Policy and Practice. *Disease Management and Health Outcomes*, 15(6), 341-353.
- Cesta, T. G., & Falter, E. J. (1999). Case Management. Its value for staff nurses. *Am J Nurs*, 99(5), 48-51.
- Cesta, T.G , & Tahan, H.A. . (2003). *The Case Manager's Survival Guide: Winning Strategies for Clinical Practice* (2nd ed.). St Louis: Mosby.
- Challis, D., Clarkson, P., Williamson, J., Hughes, J., Venables, D., Burns, A., & Weinberg, A. (2004). The value of specialist clinical assessment of older people prior to entry to care homes. *Age Ageing*, 33(1), 25-34.
- Chan, S., MacKenzie, A., Ng, D. T., & Leung, J. K. (2000). An evaluation of the implementation of case management in the community psychiatric nursing service. *J Adv Nurs*, 31(1), 144-156.

- Chan, S., & Yu, W. . (1993). Report on Clients Satisfaction with Community Psychiatric Nursing Services in Hong Kong. Hong Kong: Kong Kong Polytechnic University.
- Chandler, M. (2007). Managers in the low band residential aged care sector in NSW: A demographic profile. *Geriatrics*, 25(3), 21-28.
- Chapman, A.D. (2005). Principles and Methods of Data Cleaning (Vol. 1.0). Copenhagen: Report for the Global Biodiversity Information Facility.
- Cheek, J., Ballantyne, A., Jones, J., Roder-Allen, G., & Kitto, S. (2003). Ensuring excellence: an investigation of the issues that impact on the registered nurse providing residential care to older Australians. *Int J Nurs Pract*, 9(2), 103-111.
- Chenoweth, L., Jeon, Y. H., Goff, M., & Burke, C. (2006). Cultural competency and nursing care: an Australian perspective. *Int Nurs Rev*, 53(1), 34-40.
- Chenoweth, L., Jeon, Y. H., Merlyn, T., & Brodaty, H. (2010a). A systematic review of what factors attract and retain nurses in aged and dementia care. *J Clin Nurs*, 19(1-2), 156-167.
- Chenoweth, L., Jeon, Y., Merlyn, T., & Brodaty, H. (2010b). A systematic review of what factors attract and retain nurses in aged and dementia care. *Journal of Clinical Nursing*, 19(1-2), 156-167.
- Chenoweth, L., King, M. T., Jeon, Y. H., Brodaty, H., Stein-Parbury, J., Norman, R., Haas, M., & Luscombe, G. (2009). Caring for Aged Dementia Care Resident Study (CADRES) of person-centred care, dementia-care mapping, and usual care in dementia: a cluster-randomised trial. *Lancet Neurol*, 8(4), 317-325.
- Cherry, J. C., Colliflower, S. J., & Tsiperfal, A. (2000). Meeting the challenges of case management with remote patient monitoring technology. *Lippincotts Case Manag*, 5(5), 191-198.
- Chi, I., Lam, T.P., & Lam, K.F. (1997). Validation study on the minimum data set for home care assessment instrument (MDS-HC) for elderly in Hong Kong (Administration, Department of Social Work and Social, Trans.). Hong Kong: University of Hong Kong.
- Chu, Paul, Edwards, Joy, Levin, Ron, & Thomson, Jim. (2000). The use of clinical case management for early stage Alzheimer' patients and their families. *American Journal of Alzheimer's Disease and Other Dementias*, 15(5), 284-290.
- Chui, Y. Y., Donoghue, J., & Chenoweth, L. (2005). Responses to advanced cancer: Chinese-Australians. *J Adv Nurs*, 52(5), 498-507.
- Churches of Christ Queensland. (2007). Strategic Plan 2005-2008 Retrieved 24th July, 2007, from [www.care.cofcql.com.au](http://www.care.cofcql.com.au)
- Chussil, J. T. (1998). Cultural competency in nursing. *Dermatol Nurs*, 10(6), 393.



- Clare, J., & De Bellis, A. (1997). Palliative care in South Australian nursing homes. *Aust J Adv Nurs*, 14(4), 20-28.
- Clemens, E., Wetle, T., Feltes, M., Crabtree, B., & Dubitzky, D. (1994). Contradictions in case management: client-centered theory and directive practice with frail elderly. *J Aging Health*, 6(1), 70-88.
- Coakes, S.J. . (2009). *SPSS: Analysis without Anguish: Version 16 for Windows*. China: John Wiley and Sons.
- Cohen-Mansfield, J. (1997). Turnover among nursing home staff. A review. *Nurs Manage*, 28(5), 59-62, 64.
- Cohen, E.L., & Cesta, T. G. (2005). *Nursing Case Management: From Essentials to Advanced Practice Applications* (4th ed.). St. Louis: Mosby.
- Cohen, S. L., Merelsterin, R., Kamarack, T., & Hoberman, M. (1985). Measuring the functional components of social service. In Sarason, I.G. & Sarason, B.R. (Eds.), *Social Support Theory, Research and Applications* (pp. 182-203). Boston: Martinus Nijhoff Publishers.
- Coile, R. C., Jr., & Matthews, P. (1999). Nursing case management in the millennium. Two perspectives. *Nurs Case Manag*, 4(6), 244-251; quiz 252-244.
- Coleman, E. A., Smith, J. D., Frank, J. C., Min, S. J., Parry, C., & Kramer, A. M. (2004). Preparing patients and caregivers to participate in care delivered across settings: the Care Transitions Intervention. *J Am Geriatr Soc*, 52(11), 1817-1825.
- Coleman, M. . (1975). *Care of the Aged - Australian Government Social Welfare Commission on Care of the Aged*. Canberra.
- National Health Act (1953).
- Aged or Disabled Persons Care Act (1954).
- Nursing Homes Act (Recinded) (1988).
- Aged Care Act (1997).
- Aged Care Amendment Bill (2004).
- Commonwealth of Australia. (2005a). *A Literature Review and Description of the Regulatory Framework*. (P3-2088). Canberra
- Commonwealth of Australia. (2005b). *Quality and Equity in Aged Care*. Canberra: Senate Printing Unit, Parliament House.
- Commonwealth of Australia. (2006). *Aged Care in Australia*. Canberra
- Commonwealth of Australia. (2007a, 7th November 2007). Aged Care Services Lists for Downloads Retrieved 21st December, 2007, from

<http://www.health.gov.au/internet/wcms/publishing.nsf/Content/ageing-rescare-servlist-download.htm>

- Commonwealth of Australia. (2007b). *Evaluation of the impact of accreditation on the delivery of quality of care and quality of life to residents in Australian Government subsidised residential aged care homes: Final Report*. (P3-2094). Canberra
- Commonwealth of Australia. (2007c). IT Readiness Survey of the Aged Care Sector Site Retrieved 23rd August, 2008, from [http://www.health.gov.au/internet/main/publishing.nsf/Content/23D4B48C3B08BC0ECA2570FF000FA773/\\$File/itsurvey06.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/23D4B48C3B08BC0ECA2570FF000FA773/$File/itsurvey06.pdf)
- Commonwealth of Australia. (2008a, 22nd January 2008). Multidisciplinary case conference item description Retrieved 4th November, 2008, from <http://www.health.gov.au/internet/main/publishing>
- Commonwealth of Australia. (2008b). *Residential Care Manual*. Canberra
- Commonwealth of Australia. (2009a). *Report on the Operation of the Aged Care Act 1997; 1 June 2008-30 June 2009*. Retrieved from <http://www.health.gov.au/internet/main/publishing.nsf/Content/ageing-reports-acarep-2009.htm>.
- Commonwealth of Australia. (2009b). *Residential and Community Aged Care in Australia*. Canberra: Senate Printing Unit, Parliament House.
- Commonwealth of Australia. (2009c). *Standing Committee on Finance and Public Administration; Residential and Community Aged Care in Australia*. Canberra: Retrieved from [www.aph.gov.au/senate\\_fp](http://www.aph.gov.au/senate_fp)
- Commonwealth of Australia. (2010a). *2009-10 Aged Care Approval Round Commences; Media Release*. Retrieved from [http://www.health.gov.au/internet/ministers/publishing.nsf/Content/914066D7C61F9436CA2576B300198B79/\\$File/je005.pdf](http://www.health.gov.au/internet/ministers/publishing.nsf/Content/914066D7C61F9436CA2576B300198B79/$File/je005.pdf).
- Commonwealth of Australia. (2010b). *Aged Care Education and Training Incentive Program; Media Release*. Canberra: Retrieved from <http://www.health.gov.au/internet/main/publishing.nsf/Content/ageing-rescare-aceti.htm>.
- Commonwealth of Australia. (2010c). *Australia's Future Tax System: Report to the Treasurer Henry Review*. Canberra: Commonwealth of Australia.
- Conger, M., & Craig, C. (1998). Advanced nurse practice. A model for collaboration. *Nurs Case Manag*, 3(3), 120-127.

- Conger, M. M. (1996). Integration of the clinical nurse specialist into the nurse case manager role. *Nurs Case Manag*, 1(5), 230-234.
- Conway, J. (2007). The changing skill mix and scope of practice of health care workers in New South Wales: implications of education and training reforms for registered nurse practice, performance and education. *Contemp Nurse*, 26(2), 221-224.
- Cook, T. H. (1998). The effectiveness of inpatient case management. Fact or fiction? *J Nurs Adm*, 28(4), 36-46.
- Coombs, T., & Byrne, M. K. (2003). Evaluating case management: the outcomes of medication alliance. *Aust NZ J Psychiatry*, 37(5), 628-629.
- Cooper, B. J., & Yarmo Roberts, D. (2006). National case management standards in Australia--purpose, process and potential impact. *Aust Health Rev*, 30(1), 12-16.
- Cooper, J., & Mitchell, P. . (2006). Exploring the position of the Registered Nurse in residential aged care *Geriatrics*, 24(1), 5-9.
- Courtney, M., Edwards, H., Chang, A., Parker, A., Finlayson, K., & Hamilton, K. (2009). Fewer emergency readmissions and better quality of life for older adults at risk of hospital readmission: a randomized controlled trial to determine the effectiveness of a 24-week exercise and telephone follow-up program. *J Am Geriatr Soc*, 57(3), 395-402.
- Cowin, L., & Jacobson, D. (2003). Addressing Australia's Nursing Shortage: Is the Gap Widening Between Workforce Recommendations and the Workplace? *Collegian*, 10(4), 20-25.
- Cox, C., & Albisu, K. . (2001). The Alzheimer's connections demonstration program: Instituting a national case management program *American Journal of Alzheimer's Disease and Other Dementias* 16(5), 279-284.
- Craig, K., & Huber, D. L. (2007). Acuity and case management: a healthy dose of outcomes, part II. *Prof Case Manag*, 12(4), 199-210; quiz 211-192.
- Creditor, M. C. (1993). Hazards of hospitalization of the elderly. *Ann Intern Med*, 118(3), 219-223.
- Crilly, Julia, Chaboyer, Wendy, Wallis, Marianne, Thalib, Lukman, & Green, David. (2008). Predictive outcomes for older people who present to the emergency department. 11(4), 178-183.
- Crombie, A., Ham, J., Masman, K., & Mills, T. M. (2008). Planning for transition care. *Aust Health Rev*, 32(3), 505-508.

- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *J Consult Psychol*, 24, 349-354.
- Cubit, Katrina , Farrell, Gerry , Robinson, Andrew , & Myhill, Marion (2007). A survey of the frequency and impact of Behaviours of Concern in dementia on residential aged care staff. *Australasian Journal on Ageing*, 26(2), 64-70.
- Cudney, A., & VanTuyle, L. (2001). A fine line on the front line. *Nurs Manage*, 32(6), 34-35.
- Cullen, D., Waite, A., & Oliver, N. (1997). Case management for the mentally ill: a comparative evaluation of client satisfaction. *Health and Social Care in the Community*, 5, 106-115.
- Cunningham, G., & Whitby, E. . (1997). Power Redistribution Health Management. In Hyde, J. & Cook, M.J. (Eds.), *Managing and Supporting People in Healthcare: Six Steps to Effective Management*. Royal College of Nursing.
- Cutler, D. L., Tatum, E., & Shore, J. H. (1987). A comparison of schizophrenic patients in different community support treatment approaches. *Community Ment Health J*, 23(2), 103-113.
- Daly, J., Davidson, P., Chang, E., Hancock, K., Rees, D., & Thompson, D. R. (2002). Cultural aspects of adjustment to coronary heart disease in Chinese-Australians: a review of the literature. *J Adv Nurs*, 39(4), 391-399.
- Daniels, S. (2003). Designing a hospital case management program. *Lippincotts Case Manag*, 8(2), 83-87.
- Daniels, S. (2009). Advocacy and the hospital case manager. *Prof Case Manag*, 14(1), 48-51.
- Daskein, R., Moyle, W., & Creedy, D. (2009). Aged-care nurses' knowledge of nursing documentation: an Australian perspective. *J Clin Nurs*, 18(14), 2087-2095.
- Davenport, D. L., Henderson, W. G., Mosca, C. L., Khuri, S. F., & Mentzer, R. M., Jr. (2007). Risk-adjusted morbidity in teaching hospitals correlates with reported levels of communication and collaboration on surgical teams but not with scale measures of teamwork climate, safety climate, or working conditions. *J Am Coll Surg*, 205(6), 778-784.
- Davidson, J. U. (1999). Blending case management and quality outcomes management into the family nurse practitioner role. *Nurs Adm Q*, 24(1), 66-74.
- Davidson, P., Halcomb, E., Hickman, L., Phillips, J., & Graham, B. (2006). Beyond the rhetoric: what do we mean by a 'model of care'? *Aust J Adv Nurs*, 23(3), 47-55.

- Davidson, S., Koritsas, S., Clarke, D., O'Connor, D., & Liddell, M. (2005). Recognising and Screening for Depression Among Older People Living in Residential Care: Department of General Practice.
- Davies, A. , & Ware, J. . (1991). GHAA's consumer satisfaction survey and user's manual: Washington.
- Davies, S., & Cripps, C. G. (2008). Supporting quality improvement in care homes for older people: the contribution of primary care nurses. *J Nurs Manag*, 16(2), 115-120.
- Day, C. (1996). The evolution of case management. One organization's experience. *Nurs Case Manag*, 1(2), 54-58.
- De Bellis, A. (2010). Opinion piece: Australian residential aged care and the quality of nursing care provision. *Contemp Nurse*, 35(1), 100-113.
- De Bellis, A., & Williams, J. (2008). The Cornell Scale for Depression in Dementia in the context of the Australian Aged Care Funding Instrument: a literature review. *Contemp Nurse*, 30(1), 20-31.
- de la Rosa, I. A., Perry, J., & Johnson, V. (2009). Benefits of increased home-visitation services: exploring a case management model. *Fam Community Health*, 32(1), 58-75.
- De Laine, C., Scammell, J., & Heaslip, V. (2003). Continuing professional development: older people. Continence care and policy initiatives... This CPD was previously published in Nursing Standard vol 17, no 7, 2002. *Primary Health Care*, 13(1), 43-50.
- Deci, P. A., Santos, A. B., Hiott, D. W., Schoenwald, S., & Dias, J. K. (1995). Dissemination of assertive community treatment programs. *Psychiatr Serv*, 46(7), 676-678.
- Department of Health and Ageing. (2008, 27th August 2008). Rates of payment for residential care subsidies and supplements Retrieved 1st October, 2009, from [http://www.health.gov.au/internet/main/publishing.nsf/Content/A819AE0ED922C8E9CA2574B2001AF955/\\$File/ACFIsubsidyRate010708.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/A819AE0ED922C8E9CA2574B2001AF955/$File/ACFIsubsidyRate010708.pdf)
- Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: an outpatient psychiatric rating scale--preliminary report. *Psychopharmacol Bull*, 9(1), 13-28.
- DeVaus, D.A. . (2002). *Surveys in Social Research* (5th ed.). USA: Allen and Unwin.
- Devine, R. (2004). Issues of documentation. *Lippincotts Case Manag*, 9(1), 52-53.
- Dewing, J. (2008). Personhood and dementia: revisiting Tom Kitwood's ideas. *Int J Older People Nurs*, 3(1), 3-13.

- Dewing, K. C. (1997). Case management information needs. Effective tools in the management of patient care and cost containment. *Nurs Case Manag*, 2(4), 168-172.
- Dincin, J. (1990). Assertive case management. *Psychiatr Q*, 61(1), 49-55.
- Dingwall, L. (2008). Promoting effective continence care for older people: a literature review. *Br J Nurs*, 17(3), 166-172.
- Dixon-Woods, M, Agarwal, S, Jones, D, Young, B, & Sutton, A. (2005). Synthesising qualitative and quantitative evidence: a review of possible methods. *J Health Serv Res Policy*, 10, 45 - 53.
- Dixon, L. (2000). Assertive community treatment: twenty-five years of gold. *Psychiatr Serv*, 51(6), 759-765.
- Donoghue, A., Hodgins, G., Judd, F., Scopelliti, J., Grigg, M., Komiti, A., & Murray, G. (2004). Training case managers to deliver focused psychological strategies. *Int J Ment Health Nurs*, 13(1), 33-38.
- Doull, L., & Campbell, F. (2008). Human resources for health in fragile states. *Lancet*, 371(9613), 626-627.
- Dow, B., & McDonald, J. (2007). The invisible contract: shifting care from the hospital to the home. *Aust Health Rev*, 31(2), 193-202.
- Draper, B., Brodaty, H., & Low, L. F. (2002). Types of nursing home residents with self-destructive behaviours: analysis of the Harmful Behaviours Scale. *Int J Geriatr Psychiatry*, 17(7), 670-675.
- Draper, B., Brodaty, H., Low, L. F., Richards, V., Paton, H., & Lie, D. (2002). Self-destructive behaviors in nursing home residents. *J Am Geriatr Soc*, 50(2), 354-358.
- Draper, B., & Low, L. (2004). What is the effectiveness of old-age mental health services? (pp. 29). Copenhagen: World Health Organisation Regional Office for Europe (Health Evidence Network Report).
- Drenkard, K., & Cohen, E. (2004). Clinical nurse leader: moving toward the future. *J Nurs Adm*, 34(6), 257-260.
- Drennan, V., & Goodman, C. (2004). Nurse-led case management for older people with long-term conditions. *Br J Community Nurs*, 9(12), 527-533.
- Du Moulin, M. F.M.T. , Hamers, J. P. H., Paulus, A., Berendsen, C. , & Halfens, R. (2005). The Role of the Nurse in Community Continence Care: A Systematic Review. [Research Article - quantitative]. *International Journal of Nursing Studies*, 42(4), 479 - 492.

- Duchene, P. M. (2010). Magnet recognition: one hospital's journey. *Health Prog*, 91(3), 29-33.
- Duffield, C., Forbes, J., Fallon, A., Roche, M., Wise, W., & Merrick, E. T. (2005). Nursing skill mix and nursing time: the roles of registered nurses and clinical nurse specialists. *Aust J Adv Nurs*, 23(2), 14-21.
- Duffield, C., Roche, M., O'Brien-Pallas, L., Diers, D., Aisbett, C., King, M., Aisbett, K., & Hall, J. (2007). *Glueing it Together: Nurses, Their Work Environment and Patient Safety*. Sydney,: University of Technology, Sydney; Centre for Health Services Management,.
- Dunn, S. A., Sohl-Kreiger, R., & Marx, S. (2001). Geriatric case management in an integrated care system. *J Nurs Adm*, 31(2), 60-62.
- Dzyacky, S. C. (1998). An acute care case management model for nurses and social workers. *Nurs Case Manag*, 3(5), 208-215.
- Edwards, H., Courtney, M., & Spencer, L. (2003a). Consumer expectations of residential aged care: reflections on the literature. *Int J Nurs Pract*, 9(2), 70-77.
- Edwards, H., Courtney, M., & Spencer, L. (2003b). Development and evaluation of a consumer's guide to residential aged care. *Aust Health Rev*, 26(1), 145-152.
- Eley, R., Hegney, D., Buikstra, E., Fallon, T., Plank, A., & Parker, V. (2007). Aged care nursing in Queensland - the nurses' view. *J Clin Nurs*, 16(5), 860-872.
- Elkan, R., Kendrick, D., Dewey, M., Hewitt, M., Robinson, J., Blair, M., Williams, D., & Brummell, K. (2001). Effectiveness of home based support for older people: systematic review and meta-analysis. *BMJ*, 323(7315), 719-725.
- Elliott, D., & Hayes, L. (Eds.). (2007). *Observational Designs and Methods* (3rd ed.). Australia: Elsevier
- Elwyn, G., Williams, M., Roberts, C., Newcombe, R. G., & Vincent, J. (2008). Case management by nurses in primary care: analysis of 73 'success stories'. *Qual Prim Care*, 16(2), 75-82.
- Epstein, R. M., & Hundert, E. M. (2002). Defining and assessing professional competence. *JAMA*, 287(2), 226-235.
- Ersek, M., Kraybill, B. M., & Hansberry, J. (2000). Assessing the educational needs and concerns of nursing home staff regarding end-of-life care. *J Gerontol Nurs*, 26(10), 16-26.
- Esterman, A. J., & Ben-Tovim, D. I. (2002). The Australian coordinated care trials: success or failure? The second round of trials may provide more answers. *Med J Aust*, 177(9), 469-470.

- Evans, C., Drennan, V., & Roberts, J. (2005). Practice nurses and older people: a case management approach to care. *J Adv Nurs*, 51(4), 343-352.
- Evers, W., Tomic, W., & Brouwers, A. (2002). Aggressive behaviour and burnout among staff of homes for the elderly. *Int J Ment Health Nurs*, 11(1), 2-9.
- Fahey, C. . (2003). Culture change in long-term care facilities: changing the facility or changing the system?. *Journal of Social Work in Long-Term Care*, 2, 35-51.
- Fain, J. A. (1997). A journey into collaborative case management. *Diabetes Educ*, 23(5), 507.
- Feldman, C., Olberding, L., Shortridge, L., Toole, K., & Zappin, P. (1993). Decision making in case management of home healthcare clients. *J Nurs Adm*, 23(1), 33-38.
- Ferguson, J. A., & Weinberger, M. (1998). Case management programs in primary care. *J Gen Intern Med*, 13(2), 123-126.
- Ferri, C. P., Prince, M., Brayne, C., Brodaty, H., Fratiglioni, L., Ganguli, M., Hall, K., Hasegawa, K., Hendrie, H., Huang, Y., Jorm, A., Mathers, C., Menezes, P. R., Rimmer, E., & Sczufca, M. (2005). Global prevalence of dementia: a Delphi consensus study. *Lancet*, 366(9503), 2112-2117.
- Fillenbaum, G. G., & Smyer, M. A. (1981). The development, validity, and reliability of the OARS multidimensional functional assessment questionnaire. *J Gerontol*, 36(4), 428-434.
- Fisher, G., Landis, D., & Clark, K. (1988). Case management service provision and client change. *Community Ment Health J*, 24(2), 134-142.
- Fitzgerald, J. F., Smith, D. M., Martin, D. K., Freedman, J. A., & Katz, B. P. (1994). A case manager intervention to reduce readmissions. *Arch Intern Med*, 154(15), 1721-1729.
- Flicker, L. (2000). Healthcare for older people in residential care--who cares? *Med J Aust*, 173(2), 77-79.
- Foley, William J., & Schneider, Donald P. (1980). A Comparison of the Level of Care Predictions of Six Long-Term Care Patient Assessment Systems. *American Journal of Public Health*, 70(11), 1152-1161.
- Forbes, M. A. (1999). The practice of professional nurse case management. *Nurs Case Manag*, 4(1), 28-33.
- Ford, P., Wynne, M., Rice, M., & Grogan, C. (2008). A partnership approach to leadership development for Directors of Nursing in Older People's services in Ireland - articulating the impact. *J Nurs Manag*, 16(2), 159-166.



- Fowler, F.J. . (1995). *Improving Survey Questions: Design and Evaluation* USA: SAGE Publications.
- Fowler, F.J. . (2002). *Survey Research Methods* (3rd ed.). USA: SAGE Publications.
- Franklin, J. L., Solovitz, B., Mason, M., Clemons, J. R., & Miller, G. E. (1987). An evaluation of case management. *Am J Public Health, 77*(6), 674-678.
- Fraser, A., Howard, M., Alder, J., Boobier, S., Burke, V., & Chambers, J. (2005). Across cultures: implementing the Evercare model. *Nurs Older People, 17*(7), 16-19.
- Fraser, K. D., & Strang, V. (2004). Decision-making and nurse case management: a philosophical perspective. *ANS Adv Nurs Sci, 27*(1), 32-43.
- Frazier, S. C. (2003). Magnet home care agencies: a professional way to impact quality and retention. *Home Healthc Nurse, 21*(9), 603-610.
- Fricke, K. (2006). Patient-centered case management in today's healthcare. *Lippincotts Case Manag, 11*(2), 112-114.
- Fritzen, S.A. . (2007). Strategic Management of the Health Workforce in Developing Countries: What Have We Learned? . *Human Resources for Health 5*(4). Retrieved from <http://uwp.edu/~crooker/786-SHRM/articles/indust-hc-hrfh-022607.pdf>
- Gabbay, R. A., Lendel, I., Saleem, T. M., Shaeffer, G., Adelman, A. M., Mauger, D. T., Collins, M., & Polomano, R. C. (2006). Nurse case management improves blood pressure, emotional distress and diabetes complication screening. *Diabetes Res Clin Pract, 71*(1), 28-35.
- Gaboury, I., Bujold, M., Boon, H., & Moher, D. (2009). Interprofessional collaboration within Canadian integrative healthcare clinics: Key components. *Soc Sci Med, 69*(5), 707-715.
- Gagnon, A. J., Schein, C., McVey, L., & Bergman, H. (1999). Randomized controlled trial of nurse case management of frail older people. *J Am Geriatr Soc, 47*(9), 1118-1124.
- Ganong, L. H. (1987). Integrative reviews of nursing research. *Res Nurs Health, 10*(1), 1-11.
- Garcia, J. A., Crocker, J., Wyman, J. F., & Krissovich, M. (2005). Breaking the cycle of stigmatization: managing the stigma of incontinence in social interactions. *J Wound Ostomy Continence Nurs, 32*(1), 38-52.
- Garling, P. . (2008a). Final Report of the Special Commission of Inquiry; Acute Care Services in NSW Public Hospitals (Vol. III).

- Garling, P. . (2008b). Final Report of the Special Commission of Inquiry; Acute Care Services in NSW Public Hospitals, (Vol. I).
- Garling, P. . (2008c). Final Report of the Special Commission of Inquiry; Acute Care Services in NSW Public Hospitals, (Vol. III).
- Geary, S., Cale, D. D., Quinn, B., & Winchell, J. (2009). Daily rapid rounds: decreasing length of stay and improving professional practice. *J Nurs Adm*, 39(6), 293-298.
- George, L. K., & Fillenbaum, G. G. (1985). OARS methodology. A decade of experience in geriatric assessment. *J Am Geriatr Soc*, 33(9), 607-615.
- Gibbs, A. . (1999). The assessment, case management and evaluation system. *Probation Journal* 46, 182-186.
- Gibbs, G. (1995). Nurses in private nursing homes: a study of their knowledge and attitudes to pain management in palliative care. *Palliat Med*, 9(3), 245-253.
- Giles, L. C., Hawthorne, G., & Crotty, M. (2009). Health-related Quality of Life among hospitalized older people awaiting residential aged care. *Health Qual Life Outcomes*, 7, 71.
- Gillham, B. . (2000). *Case Study Research Methods*. London: Continuum
- Ginther, S.D., Webber, P., Fox, P.J., & Miller, L. (1993). Predictors of case management for persons with Alzheimer's disease *The Journal of Applied Gerontology* 12(2), 139-154
- Glasson, J., Chang, E., Chenoweth, L., Hancock, K., Hall, T., Hill-Murray, F., & Collier, L. (2006). Evaluation of a model of nursing care for older patients using participatory action research in an acute medical ward. *J Clin Nurs*, 15(5), 588-598.
- Goddard-Jones, M., & Gevers, L. . (2002). Getting it right: meeting the aged care accreditation standards. *Health Information Management Journal*, 31(2).
- Goering, P. N., Wasylenki, D. A., Farkas, M., Lancee, W. J., & Ballantyne, R. (1988). What difference does case management make? *Hosp Community Psychiatry*, 39(3), 272-276.
- Gonzalez-Calvo, J., Jackson, J., Hansford, C., Woodman, C., & Remington, N. S. (1997). Nursing case management and its role in perinatal risk reduction: development, implementation, and evaluation of a culturally competent model for African American women. *Public Health Nurs*, 14(4), 190-206.
- Goode, C. J. (1995). Impact of a CareMap and case management on patient satisfaction and staff satisfaction, collaboration, and autonomy. *Nurs Econ*, 13(6), 337-348, 361.

- Goold, S. (2001). Transcultural nursing: can we meet the challenge of caring for the Australian Indigenous person? *J Transcult Nurs*, 12(2), 94-99.
- Gorey, K. M., Leslie, D. R., Morris, T., Carruthers, W. V., John, L., & Chacko, J. (1998). Effectiveness of case management with severely and persistently mentally ill people. *Community Ment Health J*, 34(3), 241-250.
- Gournay, K., & Thornicroft, G. (2000). Comments on the UK700 case management trial. *Br J Psychiatry*, 177, 371.
- Gournay, K., & Thornicroft, G. (2002). A UK perspective of case management. *Aust N Z J Psychiatry*, 36(5), 701-702; author reply 702.
- Grachek, M. K. (2000). Joint Commission accreditation: a framework for coordinating care for older adults. *Geriatr Nurs*, 21(6), 326-327.
- Gravelle, H., Dusheiko, M., Sheaff, R., Sargent, P., Boaden, R., Pickard, S., Parker, S., & Roland, M. (2007). Impact of case management (Evercare) on frail elderly patients: controlled before and after analysis of quantitative outcome data. *BMJ*, 334(7583), 31.
- Gray, L. . (2001). *Two year review of aged care reforms*. Canberra: Commonwealth of Australia.
- Gray, M. L. (2003). Gender, race, and culture in research on UI: sensitivity and screening are integral to adequate patient care. *Am J Nurs, Suppl*, 20-25.
- Grealy, J. . (2005). *Prevention and Management of Resistance to Care Project: Final Report* Sydney.
- Gregory, R. . (1993). *Review of the Structure of Nursing Home Funding Arrangements - Stage 1*. Canberra: Australian Government Publishing Service.
- Gregory, R. . (1994). *Review of the Structure of Nursing Home Funding Arrangements - Stage 2*. Canberra: Australian Government Publishing Service.
- Grenade, L., & Boldy, D. . (2002). The accreditation experience; Views of residential aged care providers *Geriatricion*, 20(1), 5-9.
- Grossman, S., & Bautista, C. (2002). Collaboration yields cost-effective, evidence-based nursing protocols. *Orthop Nurs*, 21(3), 30-36.
- Guttman, R. (1999). Case management of the frail elderly in the community. *Clin Nurse Spec*, 13(4), 174-178; quiz 179-181.
- Hader, R. (2010). Magnet recognition--excellence is the standard. *Nurs Manage*, 41(6), 6.
- Haesler, E.J., Nay, R., O'Donnell, M., & McAuliffe, L. . (2007). Effectiveness of staffing Models in residential /subacute /extended aged care settings (Protocol) *Cochrane Database of Systematic Reviews*(2).

- Haig, K. M., Sutton, S., & Whittington, J. (2006). SBAR: a shared mental model for improving communication between clinicians. *Jt Comm J Qual Patient Saf*, 32(3), 167-175.
- Halcomb, E.J., Davidson, P.M., Phillips, J.L., & Hickman, L. . (2006). Evaluation of Multidisciplinary Case Management Sydney: University of Western Sydney.
- Hangan, C. (2006). Introduction of an intensive case management style of delivery for a new mental health service. *Int J Ment Health Nurs*, 15(3), 157-162.
- Hansson, L., & Hoglund, E. (1995). Patient satisfaction with psychiatric services. *Nordic Journal of Psychiatry*, 49, 257-262.
- Harrington, C. (2004). Saving Lives Through Quality of Care: A Blueprint for Elder Justice. *Alzheimer's Care Today*, 5(1), 24-38.
- Harris, M. F. (2002). Case conferences in general practice: time for a rethink? *Med J Aust*, 177(2), 93-94.
- Harvey, J., Gursansky, D., & Kennedy, R. (2001). Case management in Australia: application of Moxley's scenarios. *Care Manag J*, 3(2), 50-54.
- Hassall, S., & Gill, T. (2008). Providing care to the elderly with depression: the views of aged care staff. *J Psychiatr Ment Health Nurs*, 15(1), 17-23.
- Hawthorne, G., Richardson, J., & Osborne, R. (1999). The Assessment of Quality of Life (AQoL) instrument: a psychometric measure of health-related quality of life. *Qual Life Res*, 8(3), 209-224.
- Health and Community Services. (1994). *Nursing Home Type and Nursing Home Patient Fees, Hospital Circular*. Melbourne: Health and Community Services,.
- Healy, A., & Elliott, E. P. (1999). Developing case management in a nursing home environment. *Nurs Case Manag*, 4(3), 112-121.
- Healy, J., & Braithwaite, J. (2006). Designing safer health care through responsive regulation. *Med J Aust*, 184(10 Suppl), S56-59.
- Hegney, D. (2007). Practice nursing in rural Australia. *Contemp Nurse*, 26(1), 74-82.
- Hegney, D., Plank, A., & Parker, V. (2003). Nursing workloads: the results of a study of Queensland Nurses. *J Nurs Manag*, 11(5), 307-314.
- Hellwig, S. D., Yam, M., & DiGiulio, M. (2003). Nurse case managers' perceptions of advocacy: a phenomenological inquiry. *Lippincotts Case Manag*, 8(2), 53-63; quiz 64-55.
- Henderson, E. J., & Caplan, G. A. (2008). Home sweet home? Community care for older people in Australia. *J Am Med Dir Assoc*, 9(2), 88-94.

- Henderson, S., Duncan-Jones, P., Byrne, D. G., & Scott, R. (1980). Measuring social relationships. The Interview Schedule for Social Interaction. *Psychol Med*, 10(4), 723-734.
- Henning, S. E., & Cohen, E. L. (2008). The competency continuum: expanding the case manager's skill sets and capabilities. *Prof Case Manag*, 13(3), 127-148; quiz 149-150.
- Henson, J., & Daniels, S. (2002). Don't squander case management resources. *Lippincotts Case Manag*, 7(2), 59-60.
- Hesse, M., Vanderplasschen, H.M., Rapp, R., Broekaert, E., & Fridell, M. (2009). Case management for persons with substance use disorders. *Cochrane Database of Systematic Reviews*, 4.
- Hickey, P., Gauvreau, K., Connor, J., Sporing, E., & Jenkins, K. (2010). The relationship of nurse staffing, skill mix, and Magnet recognition to institutional volume and mortality for congenital heart surgery. *J Nurs Adm*, 40(5), 226-232.
- Hickman, L., Newton, P., Halcomb, E. J., Chang, E., & Davidson, P. (2007). Best practice interventions to improve the management of older people in acute care settings: a literature review. *J Adv Nurs*, 60(2), 113-126.
- Higgins, J., & Green, S. (Eds.). (2009). *Cochrane Handbook for Systematic Reviews of Interventions* (Version 5.0.2 ed.): The Cochrane Collaboration, .
- Hocker, S. M., & Trofino, J. (2003). Transformational leadership: the development of a model of nursing case management by the army nurse corps. *Lippincotts Case Manag*, 8(5), 208-213.
- Hogan, P., Moxham, L., & Dwyer, T. . (2007). Human resources management strategies for the retention of nurses in acute care settings in hospitals in Australia *Contemporary Nurse* 24, 189-199.
- Hogan, W. (2007). Outcomes from the Aged Care Review. *Australasian Journal on Ageing*, 26(3), 104-108.
- Hogan, W.P. (2004). *Review of Pricing Arrangements in Residential Aged Care Final Report*. Canberra: Commonwealth of Australia.
- Hollander, M. J., & Pallan, P. (1995). The British Columbia Continuing Care system: service delivery and resource planning. *Aging (Milano)*, 7(2), 94-109.
- Holloway, F., & Carson, J. (1998). Intensive case management for the severely mentally ill. Controlled trial. *Br J Psychiatry*, 172, 19-22.
- Holloway, F., Murray, M., & Squire, C. (1996). Intensive Case Management: Putting it into practice. *Psychiatric Bulletin*, 20, 395-397.

- Holmes, A. (1997). *Report of the Committee on Care of the Aged and the Infirm*. Canberra: Australian Government Publishing Service.
- Horner, B., & Boldy, D. P. (2008). The benefit and burden of "ageing-in-place" in an aged care community. *Aust Health Rev*, 32(2), 356-365.
- Horner, B., & Boldy, D.P. . (2006). Leadership in aged care *Geriatrics*, 24, 23-29.
- Horvath, A., & Greenberg, L. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counselling Psychology*, 36, 223-233.
- Howe, R. (2006). What's next in disease management? *Lippincotts Case Manag*, 11(6), 331-334.
- Howgego, I. M., Yellowlees, P., Owen, C., Meldrum, L., & Dark, F. (2003). The therapeutic alliance: the key to effective patient outcome? A descriptive review of the evidence in community mental health case management. *Aust N Z J Psychiatry*, 37(2), 169-183.
- Huber, D. L. (2000). The diversity of case management models. *Lippincotts Case Manag*, 5(6), 248-255.
- Huber, D. L., & Craig, K. (2007). Acuity and case management: a healthy dose of outcomes, part I. *Prof Case Manag*, 12(3), 132-144; quiz 145-136.
- Huber, D. L., Hall, J. A., & Vaughn, T. (2001). Dose of case management interventions. *Lippincotts Case Manag*, 6(3), 119-126.
- Huber, D. L., Sarrazin, M. V., Vaughn, T., & Hall, J. A. (2003). Evaluating the impact of case management dosage. *Nurs Res*, 52(5), 276-288.
- Hunter, S., & Levett-Jones, T. (2010). The practice of nurses working with older people in long term care: an Australian perspective. *J Clin Nurs*, 19(3-4), 527-536.
- Hurley, R.E., & Fennell, M.L. (1990). Managed Care Systems as Governance Structures: A Transaction-Cost Interpretation. In Mick, S.S. (Ed.), *Innovations in Healthcare Delivery: Insights for Organisation Theory*. San-Francisco: Jossey-Bass Publishers.
- Huston, C. J. (2001). The role of the case manager in a disease management program. *Lippincotts Case Manag*, 6(5), 222-227.
- Huston, C. J. (2002). The role of the case manager in a disease management program. *Lippincotts Case Manag*, 7(6), 221-227.
- Hutt, R., Rosen, R., & McCauley, J. . (2004). *Case Managing Long-Term Conditions: What Impact Does it have in the Treatment of Older People?* . London.
- Hyett, K. L., Podosky, M., Santamaria, N., & Ham, J. C. (2007). Valuing variance: the importance of variance analysis in clinical pathways utilisation. *Aust Health Rev*, 31(4), 565-570.

- Hyland, B., Judd, F., Davidson, S., Jolley, D., & Hocking, B. (2003). Case managers' attitudes to the physical health of their patients. *Aust N Z J Psychiatry*, 37(6), 710-714.
- Ignatavicius, D.D., & Hausman, K.A. . (1995). *Clinical Pathways for Collaborative Practice* Philadelphia W.B. Saunders Company.
- Illawarra Retirement Trust. (2007). About IRT Retrieved 24th July, 2007, from [www.irt.org.au/about](http://www.irt.org.au/about)
- Intagliata, J. (1982). Improving the quality of community care for the chronically mentally disabled: the role of case management. *Schizophr Bull*, 8(4), 655-674.
- Ireson, C. L. (1997). Critical pathways: effectiveness in achieving patient outcomes. *J Nurs Adm*, 27(6), 16-23.
- Isgur, B. . (2008). Healing the healthcare staffing shortage *Trustee*, 19-21.
- Issakidis, C., Sanderson, K., Teesson, M., Johnston, S., & Buhrich, N. (1999). Intensive case management in Australia: a randomized controlled trial. *Acta Psychiatr Scand*, 99(5), 360-367.
- Jackson, D., Mannix, J., & Daly, J. (2003). Nursing staff shortages: issues in Australian residential aged care. *Australian Journal of Advanced Nursing*, 21(1), 42-45.
- Jackson, D., & Raftos, M. (1997). In uncharted waters: confronting the culture of silence in a residential care institution. *Int J Nurs Pract*, 3(1), 34-39.
- Jensen, S., & Bowman, J. (2002). Community assessment for the case manager. *Case Manager*, 13(6), 59-62.
- Jeon, Y. H., & Chenoweth, L. (2007). Working with a culturally and linguistically diverse (CALD) group of nurses. *Collegian*, 14(1), 16-22.
- Jeon, Y. H., Glasgow, N. J., Merlyn, T., & Sansoni, E. (2010). Policy options to improve leadership of middle managers in the Australian residential aged care setting: a narrative synthesis. *BMC Health Serv Res*, 10, 190.
- Jeon, Y. H., Merlyn, T., & Chenoweth, L. (2010). Leadership and management in the aged care sector: a narrative synthesis. *Australas J Ageing*, 29(2), 54-60.
- Jeong, S., & Stein, I. . (2003). Literature review: ageing in place. *Geriatrics*, 21(3), 24-27.
- Jeong, S. Y., & Keatinge, D. (2004). Innovative leadership and management in a nursing home. *J Nurs Manag*, 12(6), 445-451.
- Johnson, K., & Proffitt, N. M. (1995). A decentralized model for case management. *Nurs Econ*, 13(3), 142-151, 165.
- Jordan, Z. (2009). Magnet recognition and practice development: two journeys towards practice improvement in health care. *Int J Nurs Pract*, 15(6), 495-501.

- Kane, R. L., Flood, S., Keckhafer, G., & Rockwood, T. (2001). How EverCare nurse practitioners spend their time. *J Am Geriatr Soc*, 49(11), 1530-1534.
- Kane, R. L., & Huck, S. (2000). The implementation of the EverCare demonstration project. *J Am Geriatr Soc*, 48(2), 218-223.
- Kane, R. L., Keckhafer, G., Flood, S., Bershadsky, B., & Siadat, M. S. (2003). The effect of Evercare on hospital use. *J Am Geriatr Soc*, 51(10), 1427-1434.
- Kanter, J. (1989). Clinical case management: definition, principles, components. *Hosp Community Psychiatry*, 40(4), 361-368.
- Kanter, J. S. (1991). Integrating case management and psychiatric hospitalization. *Health Soc Work*, 16(1), 34-42.
- Katz, B. P., & Lyerlie. (1963). Methods for measuring adjustment and social behaviour in the community: Rationale, description, discrimination, validity and scale development. *Psychological Reports*, 13, 503-507.
- Katz, J., Komaromy, C., & Sidell, M. . (1999). Research study. Understanding palliative care in residential and nursing homes. . *International Journal of Palliative Nursing*, 5(2), 58.
- Katz, J. S. (2005). Palliative care in residential care facilities: a brief review. *Int J Palliat Nurs*, 11(3), 130-131.
- Kendig, H, & McCallum, J. (1990). Grey Policy: Australian Policies for an Ageing Society (pp. 216). Sydney.
- Kendig, H. . (1989). *Directions on Ageing in New South Wales*. Sydney.
- Kerr, M. H., & Birk, J. M. (1988). A client-centered case management model. *QRB Qual Rev Bull*, 14(9), 279-283.
- Kesby, S. G. (2002). Nursing care and collaborative practice. *J Clin Nurs*, 11(3), 357-366.
- Kim, Y. J., & Soeken, K. L. (2005). A meta-analysis of the effect of hospital-based case management on hospital length-of-stay and readmission. *Nurs Res*, 54(4), 255-264.
- King, R. (2009). Caseload management, work-related stress and case manager self-efficacy among Victorian mental health case managers. *Aust N Z J Psychiatry*, 43(5), 453-459.
- King, R., Meadows, G., & Le Bas, J. (2004). Compiling a caseload index for mental health case management. *Aust N Z J Psychiatry*, 38(6), 455-462.
- Kitwood, T. (1997). The experience of dementia. *Ageing and Mental Health*, 1(1), 13-22.



- Klineberg, I. (2008). Australian dental journal. Oral implant rehabilitation: a state-of-the-art overview of case management. Guest editorial. *Aust Dent J*, 53 Suppl 1, S1.
- Kramer, M., & Schmalenberg, C. E. (2003). Magnet hospital staff nurses describe clinical autonomy. *Nurs Outlook*, 51(1), 13-19.
- Krawiecka, M., Goldberg, D., & Vaughan, M. (1977). A standardized psychiatric assessment scale for rating chronic psychotic patients. *Acta Psychiatr Scand*, 55(4), 299-308.
- Kuklierus, A., Mayer, G., & Wortham, J. (2000). Five steps to reinventing case management. *Lippincotts Case Manag*, 5(3), 117-119.
- Kvarnstrom, S. (2008). Difficulties in collaboration: a critical incident study of interprofessional healthcare teamwork. *J Interprof Care*, 22(2), 191-203.
- Kwan, C. W., Chi, I., Lam, T. P., & Chou, K. L. (2000). Validation of minimum data set for home care assessment instrument (MDS-HC) for Hong Kong Chinese Elders. *Clinical Gerontologist*, 21(4), 35-48.
- Lake, E. T., Shang, J., Klaus, S., & Dunton, N. E. (2010). Patient falls: Association with hospital Magnet status and nursing unit staffing. *Res Nurs Health*, 33(5), 413-425.
- Lash, A. A., & Munroe, D. J. (2005). Magnet Recognition Program 2005: an update. *Medsurg Nurs*, 14(5), 325-328.
- Lawhorne, L. W., Ouslander, J. G., Parmelee, P. A., Resnick, B., & Calabrese, B. (2008). Urinary incontinence: a neglected geriatric syndrome in nursing facilities. *J Am Med Dir Assoc*, 9(1), 29-35.
- Lea, J., & Cruickshank, M. (2005). Factors that influence the recruitment and retention of graduate nurses in rural health care facilities. *Collegian*, 12(2), 22-27.
- Lee, D. T., Mackenzie, A. E., Dudley-Brown, S., & Chin, T. M. (1998). Case management: a review of the definitions and practices. *J Adv Nurs*, 27(5), 933-939.
- Leff, E. W. (1990). Using importance-performance analysis. *Nurs Manage*, 21(5), 20-22.
- Lehman, A. (1988). A quality of life interview for chronically mentally ill. *Evaluation and Program Planning*, 11, 51-62.
- Lehman, A. F. (1983). The well-being of chronic mental patients. *Arch Gen Psychiatry*, 40(4), 369-373.
- Leung, A. C., Liu, C., Chow, N. W., & Chi, I. (2004). Cost-benefit analysis of a case management project for the community-dwelling frail elderly in Hong Kong. *Journal of Applied Gerontology*, 23(1), 70-85.

- Leung, A. C., Yau, D. C., Liu, C. P., Yeoh, C. S., Chui, T. Y., Chi, I., & Chow, N. W. (2004). Reducing utilisation of hospital services by case management: a randomised controlled trial. *Aust Health Rev*, 28(1), 79-86.
- Lichtenberg, P., Levinson, D., Sharshevsky, Y., Feldman, D., & Lachman, M. (2008). Clinical case management of revolving door patients - a semi-randomized study. *Acta Psychiatr Scand*, 117(6), 449-454.
- Lim, W. K., Lambert, S. F., & Gray, L. C. (2003). Effectiveness of case management and post-acute services in older people after hospital discharge. *Med J Aust*, 178(6), 262-266.
- Lindhardt, T., Nyberg, P., & Hallberg, I. R. (2008). Collaboration between relatives of elderly patients and nurses and its relation to satisfaction with the hospital care trajectory. *Scand J Caring Sci*, 22(4), 507-519.
- Long, M. J. (2002). Case management model or case manager type? That is the question. *Health Care Manag (Frederick)*, 20(4), 53-65.
- Lutheran Church of Australia. (2004). Mission Retrieved 24th July, 2007, from [www.lca.org.au/media/luthmedia/mission](http://www.lca.org.au/media/luthmedia/mission)
- Luzinski, C. H., Stockbridge, E., Craighead, J., Bayliss, D., Schmidt, M., & Seideman, J. (2008). The community case management program: for 12 years, caring at its best. *Geriatr Nurs*, 29(3), 207-215.
- Lynn, M. R., & Redman, R. W. (2006). Staff nurses and their solutions to the nursing shortage. *West J Nurs Res*, 28(6), 678-693.
- Macri, S. (1994). The nursing home industry. Residential classification instrument documentation consultation for The Commonwealth Department of Health, Housing, Local Government and Community Services. *Lamp*, 51(2), 29-33.
- Macri, S. . (1993). Resident Classification Instrument Documentation Sydney: Commonwealth Department of Health, Housing, local Government and Community Services.
- Mahony, S. O., Blank, A., Simpson, J., Persaud, J., Huvane, B., McAllen, S., Davitt, M., McHugh, M., Hutcheson, A., Karakas, S., Higgins, P., & Selwyn, P. (2008). Preliminary report of a palliative care and case management project in an emergency department for chronically ill elderly patients. *J Urban Health*, 85(3), 443-451.
- Malone, S. B., Reed, M. R., Norbeck, J., Hindsman, R. L., & Knowles, F. E., 3rd. (2004). Development of a training module on therapeutic boundaries for mental health clinicians and case managers. *Lippincotts Case Manag*, 9(4), 197-202.

- Mann, E., Kopke, S., Haaster, B., Pitkala, K., & Meyer, G. (2009). Psychotropic drug use among nursing home residents in Austria: a cross-sectional study. [Research article]. *BMC Geriatrics*, 9(18).
- Mannix, J. (1999). Political context. In Stein, I. (Ed.), *Aged care: A contemporary view* (pp. 1-15). Canberra: Royal College of Nursing Australia.
- Maravilla, V., Graves, M. T., & Newcomer, R. (2005). Development of a standardized language for case management among high-risk elderly. *Lippincotts Case Manag*, 10(1), 3-13.
- Marek, K. D., & Rantz, M. J. (2000). Aging in place: a new model for long-term care. *Nurs Adm Q*, 24(3), 1-11.
- Marquis, R., Freegard, H., & Hoogland, L. (2004). Influences on positive family involvement in aged care: an ethnographic view. *Contemp Nurse*, 16(3), 178-186.
- Marshall, M. (1996). Case management: a dubious practice. *BMJ*, 312(7030), 523-524.
- Marshall, M. (2006). The use of unlicensed personnel: their impact upon professional nurses, patients and the management of nursing services. *Nursing Monograph*, 4-8.
- Marshall, M., Gray, A., Lockwood, A., & R., Green. (1998). Case Management for People with Severe Mental Disorders *Cochrane Library*(3).
- Marshall, M., & Lockwood, A. (2000). Assertive community treatment for people with severe mental disorders. *Cochrane Database Syst Rev*(2), CD001089.
- Marshall, M., Lockwood, A., & Gath, D. (1995). Social services case-management for long-term mental disorders: a randomised controlled trial. *Lancet*, 345(8947), 409-412.
- Martin, J. S., Ummenhofer, W., Manser, T., & Spirig, R. (2010). Interprofessional collaboration among nurses and physicians: making a difference in patient outcome. *Swiss Med Wkly*.
- Marty, D., Rapp, C. A., & Carlson, L. (2001). The experts speak: the critical ingredients of strengths model case management. *Psychiatr Rehabil J*, 24(3), 214-221.
- Masters, S., Halbert, J., Crotty, M., & Cheney, F. (2008). What are the first quality reports from the Transition Care Program in Australia telling us? *Australas J Ageing*, 27(2), 97-102.
- Mateo, M. A., & Newton, C. (1996). Managing variances in case management. *Nurs Case Manag*, 1(1), 45-51.

- McCabe, M. P., Davison, T., Mellor, D., & George, K. (2008). Knowledge and skills of professional carers working with older people with depression. *Aging Ment Health, 12*(2), 228-235.
- McCallum, J., Simons, L. A., Simons, J., & Friedlander, Y. (2007). Delaying dementia and nursing home placement: the Dubbo study of elderly Australians over a 14-year follow-up. *Ann N Y Acad Sci, 1114*, 121-129.
- McCullom, P. (2004). Back to basics: "the four Rs". *Lippincotts Case Manag, 9*(4), 203-204.
- McCormack, B., Mitchell, E. A., Cook, G., Reed, J., & Childs, S. (2008). Older persons' experiences of whole systems: the impact of health and social care organizational structures. *J Nurs Manag, 16*(2), 105-114.
- McCusker, J. (1984). Development of scales to measure satisfaction and preference regarding long-term and terminal care. *Medical Care, 22*, 476-493.
- McGettigan, B. A. (2003). Effective reporting of case management outcomes: justifying your department's existence. *Lippincotts Case Manag, 8*(6), 237-240.
- McGrew, J. H., Bond, G. R., Dietzen, L., & Salyers, M. (1994). Measuring the fidelity of implementation of a mental health program model. *J Consult Clin Psychol, 62*(4), 670-678.
- McHorney, C. A., Ware, J. E., Jr., & Raczek, A. E. (1993). The MOS 36-Item Short-Form Health Survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Med Care, 31*(3), 247-263.
- McHorney, C. A., Ware, J. E., Jr., Rogers, W., Raczek, A. E., & Lu, J. F. (1992). The validity and relative precision of MOS short- and long-form health status scales and Dartmouth COOP charts. Results from the Medical Outcomes Study. *Med Care, 30*(5 Suppl), MS253-265.
- McKendry, M. J. (2004). Working with outcomes: what every case manager should know! *Lippincotts Case Manag, 9*(1), 49-50.
- McLeay, L. . (1982). *In a Home or At Home: accommodation and home care for the aged - Report from the House of Representatives Standing Committee on Expenditure*. Canberra: Australian Government Publishing Service.
- McLellan, A. T., Kushner, H., Metzger, D., Peters, R., Smith, I., Grissom, G., Pettinati, H., & Argeriou, M. (1992). The Fifth Edition of the Addiction Severity Index. *J Subst Abuse Treat, 9*(3), 199-213.
- McLellan, A. T., Luborsky, L., O'Brien, C. P., Barr, H. L., & Evans, F. (1984). The addiction severity index in three different populations. *NIDA Res Monogr, 55*, 217-223.

- Meldrum, Lenore, & Yellowlees, Peter. (2000). The measurement of a case manager's workload burden. *Australian and New Zealand Journal of Psychiatry*, 34(4), 658 - 663.
- Mellor, D., Davison, T., McCabe, M., & George, K. (2008a). The management of depressed elderly care recipients: family perspectives on the skills of professional carers. *J Community Health Nurs*, 25(1), 44-61.
- Mellor, D., Davison, T., McCabe, M., & George, K. (2008b). Professional carers' knowledge and response to depression among their aged-care clients: the care recipients' perspective. *Aging Ment Health*, 12(3), 389-399.
- Mellor, D., Russo, S., McCabe, M. P., Davison, T. E., & George, K. (2008). Depression training program for caregivers of elderly care recipients: implementation and qualitative evaluation. *J Gerontol Nurs*, 34(9), 8-15; quiz 16-17.
- Mitchell, G., Cherry, M., Kennedy, R., Weeden, K., Burridge, L., Clavarino, A., O'Rourke, P., & Del Mar, C. (2005). General practitioner, specialist providers case conferences in palliative care--lessons learned from 56 case conferences. *Aust Fam Physician*, 34(5), 389-392.
- Mitchell, M., Chaboyer, W., Burmeister, E., & Foster, M. (2009). Positive effects of a nursing intervention on family-centered care in adult critical care. *American Journal of Critical Care*, 18(6), 543-552.
- Moneyham, L., & Scott, C. B. (1997). A model emerges for the community-based nurse care management of older adults. *N HC Perspect Community*, 18(2), 68-71, 73.
- Moore-Greene, G. (2000). Standardizing social indicators to enhance medical case management. *Soc Work Health Care*, 30(3), 39-53.
- Moreo, K. (1998). Case Management in South Africa *The Case Manager* 9(5), 67-69.
- Moyle, W., & Evans, K. (2007). Models for mental health care for older adults: a review of the literature. *International Journal of Older People Nursing* 2(2), 132-140.
- Mueser, K. T., Bond, G. R., Drake, R. E., & Resnick, S. G. (1998). Models of community care for severe mental illness: a review of research on case management. *Schizophr Bull*, 24(1), 37-74.
- Muir-Cochrane, E. (2001). The case management practices of community mental health nurses: 'Doing the best we can'. *Aust N Z J Ment Health Nurs*, 10(4), 210-220.
- Mullahy, C. M. (1988). *The Case Managers Handbook*. Gaithersburg: Aspen Publishers
- Mullan, B., & Badger, F. (2007). Aggression and violence towards staff working with older patients. *Nurs Stand*, 21(27), 35-38.

- Mullen, B. A., & Kelley, P. A. (2006). Diabetes nurse case management: an effective tool. *J Am Acad Nurse Pract*, 18(1), 22-30.
- Muller, L. S. (2004). HIPAA: demonstrating compliance. *Lippincotts Case Manag*, 9(1), 27-31.
- Murphy, E. (2004). Case management and community matrons for long term conditions. *BMJ*, 329(7477), 1251-1252.
- Naleppa, Matthias J., & Reid, William J. (1998). Task-Centered Case Management for the Elderly: Developing a Practice Model. *Research on Social Work Practice*, 8(1), 63-85.
- Nash, D. B. (1998). A clarion call for case managers. *J Gen Intern Med*, 13(2), 144-145.
- National Health and Hospital Reform Commission. (2009). *A healthier future for all Australia's - Final report*. Canberra: Commonwealth of Australia.
- National Institute for Health and Clinical Excellence. (2006). *The Guidelines Manual*.
- National Institute of Labour Studies. (2004). *The Care of Older Australians; A Picture of the Residential Aged Care Workforce Adelaide*: Flinders University.
- National Institute of Labour Studies. (2008). *The Care of Older Australians; A Picture of the Residential Aged Care Workforce 2007*. In Martin, B. & King, D. (Eds.). Adelaide: Flinders University.
- National Primary Care Research and Development Centre. (2005). *EverCare evaluation interim report: implications for supporting people with long term conditions*.
- National Primary Care Research and Development Centre. (2006). *EverCare Evaluation Final Report*.
- Nelson, G., Sadeler, C., & Cragg, S. M. (1995). Changes in rates of hospitalization and cost savings for psychiatric consumers participating in a case management program. *Psychosocial Rehabilitation Journal*, 18(3), 113-123.
- Nepal, B., Ranmuthugala, G., Brown, L., & Budge, M. (2008). Modelling costs of dementia in Australia: evidence, gaps, and needs. *Aust Health Rev*, 32(3), 479-487.
- Netting, F. E., & Williams, F. G. (2000). Expanding the boundaries of primary care for elderly people. *Health Soc Work*, 25(4), 233-242.
- Neville, C.C., & Byrne, G.J. . (2002). Staff and home caregiver expectations of residential respite care for older people. *Collegian*(14), 2.

- Nobili, V., Manco, M., Raponi, M., & Marcellini, M. (2007). Case management in children affected by non-alcoholic fatty liver disease. *J Paediatr Child Health*, 43(5), 414.
- Novak, D. A. (1998). Nurse case managers' opinions of their role. *Nurs Case Manag*, 3(6), 231-237; quiz 238-239.
- O'Connor, M., & Pearson, A. (2004). Ageing in place--dying in place: competing discourses for care of the dying in aged care policy. *Aust J Adv Nurs*, 22(2), 32-38.
- O'Reilly, M., Courtney, M., & Edwards, H. (2007). How is quality being monitored in Australian residential aged care facilities? A narrative review. *Int J Qual Health Care*, 19(3), 177-182.
- Oeseburg, B., Wynia, K., Middel, B., & Reijneveld, S. A. (2009). Effects of case management for frail older people or those with chronic illness: a systematic review. *Nurs Res*, 58(3), 201-210.
- Olbort, R., Mahler, C., Campbell, S., Reuschenbach, B., Muller-Tasch, T., Szecsenyi, J., & Peters-Klimm, F. (2009). Doctors' assistants' views of case management to improve chronic heart failure care in general practice: a qualitative study. *J Adv Nurs*, 65(4), 799-808.
- Oliver, D. (2007). Government should have respected evidence. *BMJ*, 334(7585), 109.
- Oliver, J. (1991). The social care directive: development of a quality of life profile for use in community services for the mentally ill. *Social Work and Social Sciences Review*, 3, 53-60.
- Oliver, J. P., Huxley, P. J., Priebe, S., & Kaiser, W. (1997). Measuring the quality of life of severely mentally ill people using the Lancashire Quality of Life Profile. *Soc Psychiatry Psychiatr Epidemiol*, 32(2), 76-83.
- Omeri, A., & Ahern, M. (1999). Utilising culturally congruent strategies to enhance recruitment and retention of Australian indigenous nursing students. *J Transcult Nurs*, 10(2), 150-155.
- Omeri, A., & Malcolm, P. (2004). Cultural diversity: a challenge for community nurses. *Contemp Nurse*, 17(3), 183-191.
- Oshima, I., Cho, N., Anzai, N., & Takahashi, K. (2000). The development of care assessment schedule in the case management guideline for the people with mental disabilities in Japan: reliability and validity of the needs for care scale and handicaps scale. *Seishin Igaku*, 42, 809-817.

- Oshima, I., Cho, N., & Takahashi, K. (2004). Effective components of a nationwide case management program in Japan for individuals with severe mental illness. *Community Ment Health J*, 40(6), 525-537.
- Overall, J.E., & Gorham, D. R. (1962). The brief psychiatric rating scale. *Psychological Reports*, 10, 799-812.
- Padgett, S. M. (1998). Dilemmas of caring in a corporate context: a critique of nursing case management. *ANS Adv Nurs Sci*, 20(4), 1-12.
- Palese, A., Comuzzi, C., & Bresadola, V. (2005). Global case management: the "nurse case manager" model applied to day surgery in Italy. *Lippincotts Case Manag*, 10(2), 83-92.
- Park, E. J., & Huber, D. L. (2009). Case management workforce in the United States. *J Nurs Scholarsh*, 41(2), 175-183.
- Passey, M., Sheldrake, M., Leitch, K., & Gilmore, V. (2007). Impact of case management on rural women's quality of life and substance use. *Rural Remote Health*, 7(3), 710.
- Patterson, J. . (1995). *Responses of institutionalized older adults to urinary incontinence: managing the flow* Unpublished doctoral dissertation. University of Pennsylvania. Pennsylvania.
- Pearson, A. . (1992). Optimum staffing mix to obtain desired outcomes in non-government nursing homes; A review of the literature (Vol. 4). Victoria: Deakin Institute of Nursing Research.
- Pearson, A., Hocking, S., Mott, S., & Riggs, A. (1992a). Management and leadership in Australian nursing homes. *Nurs Pract*, 5(2), 24-28.
- Pearson, A., Hocking, S., Mott, S., & Riggs, A. (1992b). Skills mix in Australian nursing homes. *J Adv Nurs*, 17(7), 767-776.
- Peek, C., Higgins, I., Milson-Hawke, S., McMillan, M., & Harper, D. (2007). Towards innovation: the development of a person-centred model of care for older people in acute care. *Contemp Nurse*, 26(2), 164-176.
- Perry, M., Carpenter, I., Challis, D., & Hope, K. (2003). Understanding the roles of registered general nurses and care assistants in UK nursing homes. *J Adv Nurs*, 42(5), 497-505.
- Peterson, V. M. (2004). When quality management meets case management. *Lippincotts Case Manag*, 9(2), 108-109.
- Peterson, V.M. . (1992). *At Personal Risk: Boundary Violations in Professional-Client Relationships*. New York: Norton Company.



- Petrelli, J. M. (2003). International case management in Japan: one case manager's story. *Lippincotts Case Manag*, 8(3), 133-136.
- Pfeiffer, E. (1978). *Multi-dimensional Functional Assessment: The OARS Methodology* (2nd ed.): Duke University Press.
- Pfeiffer, E. (1975). A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. *J Am Geriatr Soc*, 23(10), 433-441.
- Phelan, M. (1996). Care management. Care programme approach constitutes good management. *BMJ*, 312(7045), 1539-1540.
- Phelan, M., Slade, M., Thornicroft, G., Dunn, G., Holloway, F., Wykes, T., Strathdee, G., Loftus, L., McCrone, P., & Hayward, P. (1995). The Camberwell Assessment of Need: the validity and reliability of an instrument to assess the needs of people with severe mental illness. *Br J Psychiatry*, 167(5), 589-595.
- Philip, C. T., Unruh, K. P., Lachman, N., & Pawlina, W. (2008). An explorative learning approach to teaching clinical anatomy using student generated content. *Anat Sci Educ*, 1(3), 106-110.
- Phillips, C.J., & Henderson, A.S. . (1998). The Prevalence of Depression Among Australian Nursing Home Clients: Results using Draft ICD-10 and DSM III-R Criteria. *Psychology Medicine* 21, 739-748.
- Phillips, J. L., Davidson, P. M., Jackson, D., & Kristjanson, L. J. (2008). Multi-faceted palliative care intervention: aged care nurses' and care assistants' perceptions and experiences. *J Adv Nurs*, 62(2), 216-227.
- Pilotto, A., D'Onofrio, G., Benelli, E., Zanesco, A., Cabello, A., Margeli, M. C., Wanche-Politis, S., Seferis, K., Sancarlo, D., Kiliyas, D., & On Behalf Of The Hope, Investigators. (2010). Information and Communication Technology Systems to Improve Quality of Life and Safety of Alzheimer's Disease Patients: A Multicenter International Survey. *J Alzheimers Dis*.
- Polaschek, N. R. (1998). Cultural safety: a new concept in nursing people of different ethnicities. *J Adv Nurs*, 27(3), 452-457.
- Ponte, P. R., Conlin, G., Conway, J. B., Grant, S., Medeiros, C., Nies, J., Shulman, L., Branowicki, P., & Conley, K. (2003). Making patient-centered care come alive: achieving full integration of the patient's perspective. *J Nurs Adm*, 33(2), 82-90.
- Powell, S. K. (2000). *Advanced Case Management: Outcomes and Beyond* Maryland: Lippincott Williams and Williams
- Powell, S. K. (2003). Its Amazing What Can Be Accomplished When No One Carers Who Gets The Credit. *Lippincotts Case Manag*, 8(2), 51-52.

- Powell, S. K. (2005). The case management adherence guidelines. *Lippincotts Case Manag*, 10(1), 1-2.
- Powell, S.K., & Ignatavicius, D. (2001). *CMSA Core Curriculum for Case Management* Philadelphia: Lippincott Williams and Wilkins.
- Priebe, S., Huxley, P., Knight, S., & Evans, S. (1999). Application and results of the Manchester Short Assessment of Quality of Life (MANSA). *Int J Soc Psychiatry*, 45(1), 7-12.
- Productivity Commission. (2005). *Australia's Health Workforce, Research Report*. Canberra.
- Productivity Commission. (2008). *Trends in Aged Care Services: some implications*. Canberra.
- Productivity Commission. (2009). *Annual Review of Regulatory Burdens on Business: Social and Economic Infrastructure Services, Research Report*. Canberra.
- Productivity Commission. (2010). *Caring for Older Australians; Productivity Commission Issues Paper*. Canberra: Productivity Commission.
- Qudah, F., Brannon, M., & McDougall, P. (1998). Integrated clinical management: a model for clinical integration. *Top Health Inf Manage*, 19(2), 1-11.
- Quine, Susan, Bernard, Diana, & Kendig, Hal. (2006). Understanding baby boomers' expectations and plans for their retirement: findings from a qualitative study. *Australasian Journal on Ageing*, 25(3), 145-150.
- Raikkonen, O., Perala, M. L., & Kahanpaa, A. (2007). Staffing adequacy, supervisory support and quality of care in long-term care settings: staff perceptions. *J Adv Nurs*, 60(6), 615-626.
- Ramey, Marianne, & Daniels, Stefani. (2001). Hospital Case Managers: Diamonds in the Rough. *Professional Case Management*, 6(5), 205-207.
- Rao, D Visala, Warburton, Jeni, & Bartlett, Helen. (2006). Health and social needs of older Australians from culturally and linguistically diverse backgrounds: issues and implications. *Australasian Journal on Ageing*, 25(4), 174-179.
- Rapp, C. A., & Goscha, R. J. (2004). The principles of effective case management of mental health services. *Psychiatr Rehabil J*, 27(4), 319-333.
- Reed-Aschcraft, K., Kirk, R.S., & Fraser, M.W. (2001). The reliability and validity of the North Carolina Family Assessment Scale. *Research on Social Work Practice*, 11(4), 503-520.
- Reeder, L. (1999). Anatomy of a disease management program. *Nurs Manage*, 30(4), 41-45.

- Reimanis, C. L., Cohen, E. L., & Redman, R. (2001). Nurse case manager role attributes: fifteen years of evidence-based literature. *Lippincotts Case Manag*, 6(6), 230-239; quiz 240-232.
- Return Service League Care. (2007). RSL Care's Vision, Mission and Key Values Retrieved 24th July, 2007, from [www.rslcare.com.au/about/vision](http://www.rslcare.com.au/about/vision)
- Rhys Hearn, C. . (1986). *Quality, Staffing and Dependency: Non Government Nursing Homes*. Canberra: Australian Government Publishing Service
- Richardson, B., & Bartlett, H. (2009). The impact of ageing-in-place policies on structural change in residential aged care. *Australas J Ageing*, 28(1), 28-31.
- Richardson, S., & Martin, B. . (2004). *The Care of Older Australians; A picture of the residential aged care workforce* Adelaide: National Institute of Labour Studies.
- Rieve, J. (1999). Health promotion and case management outcomes. *Case Manager*, 10(1), 20-21.
- Rife, J. C., First, R. J., Greenlee, R. W., Miller, L. D., & Feichter, M. A. (1991). Case management with homeless mentally ill people. *Health Soc Work*, 16(1), 58-67.
- Rigby, D. (2005). Continuing professional development. Stress urinary incontinence: recent advances in conservative management options. *Primary Health Care*, 15(9), 43-50.
- Risser, N. L. (1975). Development of an instrument to measure patient satisfaction with nurses and nursing care in primary care settings. *Nurs Res*, 24(1), 45-52.
- Robbins, C. L., & Birmingham, J. (2005). The social worker and nurse roles in case management: applying the Three Rs. *Lippincotts Case Manag*, 10(3), 120-127.
- Roberts, R. M., Dalton, K. L., Evans, J. V., & Wilson, C. L. (2007). A service model of short-term case management for elderly people at risk of hospital admission. *Aust Health Rev*, 31(2), 173-183.
- Robinson, B. C. (1983). Validation of a Caregiver Strain Index. *J Gerontol*, 38(3), 344-348.
- Rohr, Y., Schneider, J., Good, P., & Sattler, L. . (2003). Availability of analgesia for breakthrough pain for palliative care residents in hostels. *Geriaction*, 21(4), 11-16.
- Ronalds, C. . (1989). *Residents' rights in nursing homes and hostels - Final Report*. . Canberra: Department of Community Services and Health.
- Rondeau, K. V., & Wagar, T. H. (2006). Nurse and resident satisfaction in magnet long-term care organizations: do high involvement approaches matter? *J Nurs Manag*, 14(3), 244-250.

- Rosen, A., Bond, G. R., & Teesson, M. (2008). Review: intensive case management for severe mental illness reduces rehospitalisation when previous hospital use has been high. *Evid Based Ment Health, 11*(2), 45.
- Rosen, A., Mueser, K. T., & Teesson, M. (2007). Assertive community treatment-- issues from scientific and clinical literature with implications for practice. *J Rehabil Res Dev, 44*(6), 813-825.
- Rosen, A., & Teesson, M. (2001). Does case management work? The evidence and the abuse of evidence-based medicine. *Aust NZ J Psychiatry, 35*(6), 731-746.
- Rosenberg, M. (1965). *Society and Adolescent Self-Image*. New Jersey: Princeton University Press.
- Rothman, J. (1991). A model of case management: toward empirically based practice. *Soc Work, 36*(6), 520-528.
- Rotter, T., Koch, R., Kugler, J., Gothe, H., Kinsman, L. , & James, E. . (2008). Clinical Pathways: Effects on professional practice, patient outcomes, length of stay and hospital costs (Protocol) *Cochrane Database of Systematic Reviews*(3).
- Rovner, B. W., German, P. S., Brant, L. J., Clark, R., Burton, L., & Folstein, M. F. (1991). Depression and mortality in nursing homes. *JAMA, 265*(8), 993-996.
- Royal College of General Practitioners. (2005). *Standards for General Practices* (4th ed.).
- Royal College of General Practitioners. (2006). *Medical Care of Older Persons in Residential Aged Care Facilities* (3rd ed.).
- Rubin, A. (1992). Was Case Management Effective for People with Serious Mental Illness? A Research Review *Health and Social Work 17*, 138-150.
- Runci, S. J., Redman, J. R., & O'Connor, D. W. (2005). Language use of older Italian-background persons with dementia in mainstream and ethno-specific residential care. *Int Psychogeriatr, 17*(4), 699-708.
- Ryan, E.B., Bannister, K.A., & Anas, A.P. (2009). The dementia narrative: Writing to reclaim social identity. *Journal of Aging Studies, 23*(2), 145-157.
- Sadowski, L. S., Kee, R. A., VanderWeele, T. J., & Buchanan, D. (2009). Effect of a housing and case management program on emergency department visits and hospitalizations among chronically ill homeless adults: a randomized trial. *JAMA, 301*(17), 1771-1778.
- Salazar, M. K., & Graham, K. Y. (1999). Evaluation of a case management program. Summary and integration of findings. *AAOHN J, 47*(9), 416-423.

- Salazar, M. K., Graham, K. Y., & Lantz, B. (1999). Evaluating case management services for injured workers. Use of a quality assessment model. *AAOHN J*, 47(8), 348-354.
- Salvation Army (2007). Mission and History Retrieved 24th July, 2007, from [www.agedcare.salvos.org.au/our-mission-and-history](http://www.agedcare.salvos.org.au/our-mission-and-history)
- Sandvide, A., Astrom, S., Norberg, A., & Saveman, B. I. (2004). Violence in institutional care for elderly people from the perspective of involved care providers. *Scand J Caring Sci*, 18(4), 351-357.
- Sargent, P., Boaden, R., & Roland, M. (2008). How many patients can community matrons successfully case manage? *J Nurs Manag*, 16(1), 38-46.
- Schaefer, J., & Davis, C. (2004). Case management and the chronic care model: a multidisciplinary role. *Lippincotts Case Manag*, 9(2), 96-103.
- Scherer, Y. K., Bruce, S. A., & Runkawatt, V. (2007). A comparison of clinical simulation and case study presentation on nurse practitioner students' knowledge and confidence in managing a cardiac event. *Int J Nurs Educ Scholarsh*, 4, Article22.
- Schmitt, N. (2005). Role transition from caregiver to case manager, part 1. *Lippincotts Case Manag*, 10(6), 294-302.
- Schneider, L. C., & Struening, E. L. (1983). SLOF: a behavioral rating scale for assessing the mentally ill. *Soc Work Res Abstr*, 19(3), 9-21.
- Schneider, Z., Whitehead, D., Elliott, D., LoBiondo-Wood, G., & Haber, J. . (2007). *Nursing Research: Methods, Critical Appraisal and Utilisation* (3rd ed.): Elsevier Australia.
- Scholes, J., Webb, C., Gray, M., Endacott, R., Miller, C., Jasper, M., & McMullan, M. (2004). Making portfolios work in practice. *J Adv Nurs*, 46(6), 595-603.
- Schraeder, C., Fraser, C. W., Clark, I., Long, B., Shelton, P., Waldschmidt, V., Kucera, C. L., & Lanker, W. K. (2008). Evaluation of a primary care nurse case management intervention for chronically ill community dwelling older people. *Journal of Nursing & Healthcare of Chronic Illnesses*, 17(11C), 407-417.
- Schriefer, J. A., & Botter, M. L. (2001). Clinical pathways and guidelines for care management. *Outcomes Manag Nurs Pract*, 5(3), 95-98.
- Schuetze, K. (2006). Professional diversity adds richness to the case management field. *Lippincotts Case Manag*, 11(5), 238-239.
- Scott, J. G., Sochalski, J., & Aiken, L. (1999). Review of magnet hospital research: findings and implications for professional nursing practice. *J Nurs Adm*, 29(1), 9-19.

- Segal, S., & Aviram, U. (1977). *Community-based sheltered care: A study of community care and social intergration*. New York: Wiley-Interscience.
- Sekaran, K. . (2003). *Research Methods for Business: a skill building approach* New York: Wiley and Sons.
- Senate Select Committee on Private Hospitals and Nursing Homes. (1985). *Private nursing homes in Australia: Their conduct, administration and ownership (Giles Report)*. Canberra: Australian Government Publishing Service.
- Sesperez, J., Wilson, S., Jalaludin, B., Seger, M., & Sugrue, M. (2001). Trauma case management and clinical pathways: prospective evaluation of their effect on selected patient outcomes in five key trauma conditions. *J Trauma*, 50(4), 643-649.
- Sheaff, R., Boaden, R., Sargent, P., Pickard, S., Gravelle, H., Parker, S., & Roland, M. (2009). Impacts of case management for frail elderly people: a qualitative study. *J Health Serv Res Policy*, 14(2), 88-95.
- Shefter, S. M. (2006). Workflow technology: the new frontier. How to overcome the barriers and join the future. *Lippincotts Case Manag*, 11(1), 25-34; quiz 35-26.
- Shendell-Falik, N. (2002). The art of negotiation. *Lippincotts Case Manag*, 7(6), 228-230.
- Sherman, Paul S., & Ryan, Carey S. (1998). Intensity and Duration of Intensive Case Management Services. *Psychiatr Serv*, 49(12), 1585-1589.
- Sherrod, Roy Ann, & Richardson, Sandra. (2003). Using a Case Management Model to Implement a Faith-Based Initiative: Addressing Breast Cancer in a Rural African American Population. *Professional Case Management*, 8(6), 241-245.
- Shinoda-Tagawa, T., Leonard, R., Pontikas, J., McDonough, J. E., Allen, D., & Dreyer, P. I. (2004). Resident-to-resident violent incidents in nursing homes. *JAMA: Journal of the American Medical Association*, 291(5), 591-598.
- Simmons, S. F., Cadogan, M. P., Cabrera, G. R., Al-Samarrai, N. R., Jorge, J. S., Levy-Storms, L., Osterweil, D., & Schnelle, J. F. (2004). The minimum data set depression quality indicator: does it reflect differences in care processes? *Gerontologist*, 44(4), 554-564.
- Simpson, A., Miller, C., & Bowers, L. (2003). Case management models and the care programme approach: how to make the CPA effective and credible. *Journal of Psychiatric & Mental Health Nursing*, 10(4), 472-483.
- Singh, D. . (2005). *Transforming Chronic Care: Evidence About Improving Care for People with Long Term Conditions*: University of Birmingham Health Service Management Centre.

- Sinnen, M. T., & Schifalacqua, M. M. (1991). Coordinated care in a community hospital. *Nurs Manage*, 22(3), 38-42.
- Sloss, E. M., Solomon, D. H., Shekelle, P. G., Young, R. T., Saliba, D., MacLean, C. H., Rubenstein, L. Z., Schnelle, J. F., Kamberg, C. J., & Wenger, N. S. (2000). Selecting target conditions for quality of care improvement in vulnerable older adults. *J Am Geriatr Soc*, 48(4), 363-369.
- Smith, J., & Hays, R. (2004). Is rural medicine a separate discipline? *Aust J Rural Health*, 12(2), 67-72.
- Smith, L., & Newton, R. (2007). Systematic review of case management. *Aust N Z J Psychiatry*, 41(1), 2-9.
- Smith, M., & Spinella, J. L. (1995). Successful selection of the case manager. *Semin Nurse Manag*, 3(1), 43-49.
- Snowdon, J., Vaughan, R., & Miller, R. (1995). Mental health services in Sydney nursing homes. *Australian Journal of Public Health*, 19(4), 403-406.
- Snowdon, John. (2001). Psychiatric care in nursing homes: more must be done. *Australasian Psychiatry*, 9(2), 108-112.
- Snowdon, John, & Fleming, Richard. (2008). Recognising depression in residential facilities: an Australian challenge. *International Journal of Geriatric Psychiatry*, 23(3), 295-300.
- Sohl-Kreiger, Ruth, Lagaard, Mary Wotzka, & Scherrer, Joan. (1996). Nursing Case Management: Relationships as a Strategy to Improve Care. *Clinical Nurse Specialist*, 10(2), 107-113.
- Solomon, P. (2000). Precipitants of case management from an international perspective. *Int J Law Psychiatry*, 23(3-4), 419-428.
- Southern Cross Care. (2004). Our Mission Statement Retrieved 24th July, 2007, from [www.southerncrosscare.org.au/about](http://www.southerncrosscare.org.au/about)
- Spooner, S. H., & Yockey, P. S. (1997). Complementary nursing--an acute care case management model. Part II--Evaluation. *Nurs Case Manag*, 2(6), 257-266.
- St. Vincent De Paul Society (2007). Vision Retrieved 24th July, 2007, from [www.vinnies.org.au/vision](http://www.vinnies.org.au/vision)
- Stanton, M.P., Walizer, E.M., Graham, J.I., & Keppel, L. (2000). Case Management: A Case Study. *Nursing Case Management* 5(1), 37-45
- Stein, I., Pretty, J., & McMillan, M. . (2001). Current models of care in residential aged care facilities in New South Wales. Sydney: Aged Services Association of NSW and ACT and The Aged Care Research and Education Services.

- Stepien, Jacqueline M, White, Helen, Wundke, Rachel, Giles, Lynne C, Whitehead, Craig H, & Crotty, Maria. (2006). The Resident Classification Scale: Is it a valid measure of functional dependence? *Australasian Journal on Ageing*, 25(1), 42-45.
- Strassner, L. F. (1996). The ABCs of case management. A review of the basics. *Nurs Case Manag*, 1(1), 22-30.
- Strauss, J. S., & Carpenter, W. T., Jr. (1972). The prediction of outcome in schizophrenia. I. Characteristics of outcome. *Arch Gen Psychiatry*, 27(6), 739-746.
- Strauss, J. S., & Carpenter, W. T., Jr. (1974). The prediction of outcome in schizophrenia. II. Relationships between predictor and outcome variables: a report from the WHO international pilot study of schizophrenia. *Arch Gen Psychiatry*, 31(1), 37-42.
- Strousberg, N., Nahon, D., Bar, S., & Morgenstein, B. (2004). Beneficiaries of general disability and work disability insurance in Israel. Jerusalem.
- Strzelecki, S., & Brobst, R. (1997). The development of an acute care case manager orientation. *J Nurs Staff Dev*, 13(5), 266-271.
- Stuckey, H. L., Dellasega, C., Graber, N. J., Mauger, D. T., Lendel, I., & Gabbay, R. A. (2009). Diabetes nurse case management and motivational interviewing for change (DYNAMIC): study design and baseline characteristics in the Chronic Care Model for type 2 diabetes. *Contemp Clin Trials*, 30(4), 366-374.
- Sullivan, R., Paten, A., Audet, K., Campbell, E., Culling, B., Isabell, S., Fitzgerald, A., Hogan, M., Dawson, B., Triffunov, L., Conacher, F., & Snannon, J. . (1992). Implementation of Case Management at St. Vincent's Hospital Sydney. Sydney: St Vincent's Hospital.
- Summers, N. . (2009). *Fundamentals of Case Management Practice; Skills for the human services* (3rd ed.). USA: Brooks / Cole Cengage Learning.
- Swan, W. (2010). Australia to 2050: Future Challenges *Intergenerational Report 2010*. Canberra: Commonwealth of Australia.
- Tahan, H. A. (1999). Clarifying case management: what is in a label? *Nurs Case Manag*, 4(6), 268-278.
- Tahan, H. A. (2005). Essentials of advocacy in case management. *Lippincotts Case Manag*, 10(3), 136-145; quiz 146-137.
- Tahan, H. A., Huber, D. L., & Downey, W. T. (2006). Case managers' roles and functions: Commission for Case Manager Certification's 2004 Research, Part I. *Lippincotts Case Manag*, 11(1), 4-22; quiz 23-24.



- Tanaka, Y., Nagata, K., Tanaka, T., Kuwano, K., Endo, H., Otani, T., Nakazawa, M., & Koyama, H. (2009). Can an individualized and comprehensive care strategy improve urinary incontinence (UI) among nursing home residents? *Arch Gerontol Geriatr*, 49(2), 278-283.
- Taylor, P. (1999). Comprehensive nursing case management. An advanced practice model. *Nurs Case Manag*, 4(1), 2-10; quiz 11-13.
- Temkin-Greener, H., Zheng, N., Katz, P., Zhao, H., & Mukamel, D. B. (2009). Measuring work environment and performance in nursing homes. *Medical Care*, 47(4), 482-491.
- Teo, J, Briffa, K, Devine, A, Dhaliwai, S, & Prince, R. (2006). Do sleep problems or urinary incontinence predict falls in elderly women? *Australian Journal of Physiotherapy*, 52, 19 - 24.
- Terra, S. M. (2007). An evidence-based approach to case management model selection for an acute care facility: is there really a preferred model? *Prof Case Manag*, 12(3), 147-157; quiz 158-149.
- Theodos, P. (2004). Fall prevention in frail elderly nursing home residents: a challenge to case management: part II. *Lippincotts Case Manag*, 9(1), 32-44.
- Thomas, D. (2009a). Case management for long-term conditions. *Nurs Manag (Harrow)*, 15(10), 22-27.
- Thomas, James, & Harden, Angela. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8(1), 45.
- Thomas, L. (2008a). Aged Care Funding Instrument (ACFI)--sorting out fact from fiction. *Aust Nurs J*, 16(2), 23.
- Thomas, P. (2009b). Case management delivery models: the impact of indirect care givers on organizational outcomes. *J Nurs Adm*, 39(1), 30-37.
- Thomas, P. L. (2008b). Case manager role definitions: do they make an organizational impact? *Prof Case Manag*, 13(2), 61-71; quiz 72-63.
- Thomas, S. . (2008c). Consider continence essential to quality of life. *British Journal of Neuroscience Nursing* 4(11), 554-555.
- Thornicroft, G. . (1991). The Concept of Case Management for Long Term Mental Illness. *International Review of Psychiatry*, 3, 125-132.
- Thornton, G. (2008a). Aged Care: Industry Intelligence Unit (pp. 10).
- Thornton, G. (2008b). Grant Thornton Aged Care Survey 2008. Adelaide.
- Thornton, G. . (2009). Aged Care Survey 2008: Second Report. Adelaide.

- Thornton, M., & Travis, S. S. (2003). Analysis of the reliability of the modified caregiver strain index. *J Gerontol B Psychol Sci Soc Sci*, 58(2), S127-132.
- Throckmorton, T., & Windle, P. E. (2009). Evidenced-based case management practice, part 1: the systematic review. *Prof Case Manag*, 14(2), 76-81; quiz 82-73.
- Toivianen, L. (2002). *Do Older People Deserve Ethical Care?* . Paper presented at the International Institute for Public Ethics Biennial Conference.
- Tosun, N., & Akbayrak, N. (2006). Global case management: using the case management model for the care of patients with acute myocardial infarction in a military hospital in Turkey. *Lippincotts Case Manag*, 11(4), 207-215.
- Truscott, J. E. (2007). Nurse practitioners and GPs--addressing the needs of older persons living in residential aged care. *Aust Fam Physician*, 36(9), 765-767.
- Tucker, S., Hughes, J., Sutcliffe, C., & Challis, D. (2008). Care management for older people with mental health problems: from evidence to practice. *Aust Health Rev*, 32(2), 210-222.
- Tuckett, A., Hughes, K., Gilmour, J., Hegney, D., Huntington, A., & Turner, C. (2009). Caring in residential aged-care. Qualitative findings from an e-cohort sub-study. *J Clin Nurs*.
- Tullett, M., & Neno, R. (2008). Approaches to long-term conditions management and care for older people: similarities or differences? *J Nurs Manag*, 16(2), 167-172.
- Turkmen, E. (1997). *Case management and effects on patient care*. Doctorate, Istanbul University, Istanbul.
- Tyrer, H. W., Alwan, M., Demiris, G., He, Z., Keller, J., Skubic, M., & Rantz, M. (2006). Technology for successful aging. *Conf Proc IEEE Eng Med Biol Soc*, 1, 3290-3293.
- Tyrer, P. (1998). Cost-effective or profligate community psychiatry? *Br J Psychiatry*, 172, 1-3.
- Tyrer, P. (2000). Are small case-loads beautiful in severe mental illness? *Br J Psychiatry*, 177, 386-387.
- Udechuku, A., Olver, J., Hallam, K., Blyth, F., Leslie, M., Nasso, M., Schlesinger, P., Warren, L., Turner, M., & Burrows, G. (2005). Assertive community treatment of the mentally ill: service model and effectiveness. *Australas Psychiatry*, 13(2), 129-134.
- UK700 Group. (1999). Comparison of intensive and standard case management for patients with psychosis. Rationale of the trial. . *Br J Psychiatry*, 174, 74-78.

- Uniting Care Ageing. (2007). Our Strategic Challenges 2006-2011 Retrieved 24th July, 2007, from [www.unitingcareageing.nsw.uca.org.au](http://www.unitingcareageing.nsw.uca.org.au)
- Unruh, L. Y. (2005). Employment conditions at the bedside: a cause of and solution to the RN shortage. *J Nurs Adm*, 35(1), 11-14.
- Upenieks, V. (2005). Recruitment and retention strategies: a Magnet hospital prevention model. *Medsurg Nurs, Suppl*, 21-27.
- Vann, J. C. (2006). Measuring community-based case management performance: strategies for evaluation. *Lippincotts Case Manag*, 11(3), 147-157; quiz 158-149.
- Vasquez, M. S. (2009). Preventing Rehospitalization through effective home health nursing care. *Prof Case Manag*, 14(1), 32-38.
- Venturato, L., Kellett, U., & Windsor, C. (2007). Nurses' experiences of practice and political reform in long-term aged care in Australia: implications for the retention of nursing personnel. *J Nurs Manag*, 15(1), 4-11.
- Wagner, C. M. (2007). Organizational commitment as a predictor variable in nursing turnover research: literature review. *J Adv Nurs*, 60(3), 235-247.
- Waite, A., Carson, J., Cullen, D., Oliver, N., Holloway, F., & Missenden, K. (1997). Case management: a week in the life of a clinical case management team. *J Psychiatr Ment Health Nurs*, 4(4), 287-294.
- Walker, C., Weeks, A., McAvoy, B., & Demetriou, E. (2005). Exploring the role of self-management programmes in caring for people from culturally and linguistically diverse backgrounds in Melbourne, Australia. *Health Expect*, 8(4), 315-323.
- Ward, B. M., Anderson, K. S., & Sheldon, M. S. (2005). Patterns of home and community care service delivery to culturally and linguistically diverse residents of rural Victoria. *Aust J Rural Health*, 13(6), 348-352.
- Watson, R. (2008). Research into ageing and older people. *J Nurs Manag*, 16(2), 99-104.
- Weiss, M. E. (1998). Case management as a tool for clinical integration. *Adv Pract Nurs Q*, 4(1), 9-15.
- Wells, Y., Swerissen, H., & Kendig, H. (1999). Client outcomes in case managed care: who benefits most? *Australasian Journal on Ageing*, 18(2), 79-85.
- Westendorf, J. J. (2007). Magnet recognition program. *Plast Surg Nurs*, 27(2), 102-104.
- White, A. B. (2004). Case management and the national quality agenda: partnering to improve the quality of care. *Lippincotts Case Manag*, 9(3), 132-140.

- White, K. R., Bazzoli, G. J., Roggenkamp, S. D., & Gu, T. (2005). Does case management matter as a hospital cost-control strategy? *Health Care Manage Rev, 30*(1), 32-43.
- White, P., & Hall, M. E. (2006). Mapping the literature of case management nursing. *J Med Libr Assoc, 94*(2 Suppl), E99-106.
- Whywialowski, E.F. . (2004). *Managing Client Care* (3rd ed.). USA: Mosby.
- Wiet, S. G. (2005). Future of caring for an aging population: trends, technology, and caregiving. *Stud Health Technol Inform, 118*, 220-230.
- Williamson, T. . (2008). Baby boomers in transition. *Working with Older People: Community Care Policy and Practice, 12*(3), 15-18.
- Wing, J. K., Cooper, J. E., & Sartorius, N. (1974). *The Description and Classification of Psychiatric Symptoms: an Instruction Manual for the PSE and CATEGO System*. London: Cambridge University Press.
- Wolf, D. M., Lehman, L., Quinlin, R., Zullo, T., & Hoffman, L. (2008). Effect of patient-centered care on patient satisfaction and quality of care. *J Nurs Care Qual, 23*(4), 316-321.
- Wolfer, J. A., & Davis, C. A. (1970). Assessment of surgical patients' preoperative emotional condition and postoperative welfare. *Nurs Res, 19*(5), 402-414.
- Wong, P.Y., & Miller, W.C. (2008). Adverse outcomes following hospitalization in acutely ill older patients. [Research Article]. *BMC Geriatrics, 8*(10), 9.
- Wood, V., Flavell, A., Vanstolk, D., Bainbridge, L., & Nasmith, L. (2009). The road to collaboration: Developing an interprofessional competency framework. *J Interprof Care, 1*-9.
- World Health Organization. (1988). World Health Organization Psychiatric Disability Assessment Schedule (WHO/DAS). Geneva: World Health Organization.
- Wu, C. M., & Kelley, L. S. (2007). Choosing an appropriate depression assessment tool for chinese older adults: a review of 11 instruments. The best tools take into account cultural differences. *J Gerontol Nurs, 33*(8), 12-22.
- Wulff, C. N., Thygesen, M., Sondergaard, J., & Vedsted, P. (2008). Case management used to optimize cancer care pathways: a systematic review. *BMC Health Serv Res, 8*, 227.
- Wykes, T., & Sturt, E. (1986). The measurement of social behaviour in psychiatric patients: an assessment of the reliability and validity of the SBS schedule. *Br J Psychiatry, 148*, 1-11.
- Wylie, K. (2001). The resident classification system: accountability or control? *Aust Nurs J, 8*(9), 40.

- Yaksic, J. R., DeWoody, S., & Campbell, S. (1996). Case management of chronic ventilator patients. Reduce average length of stay and cost by half. *Nurs Case Manag*, 1(1), 2-10.
- Yau, D. C., Leung, A. C., Yeoh, C. S., & Chow, N. W. (2005). Global case management: Hong Kong. Care for the hospital-discharged frail elders by nurse case managers: a process evaluation of a longitudinal case management service project. *Lippincotts Case Manag*, 10(4), 203-212.
- Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M., & Leirer, V. O. (1982). Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res*, 17(1), 37-49.
- Yockey, P. S., Bobier, S. L., Harvey, G., & Spooner, S. H. (1997). Complementary nursing--an acute care case management model. Part I--development and implementation. *Nurs Case Manag*, 2(5), 183-191.
- Yoder, M. K. (2001). The bridging approach: effective strategies for teaching ethnically diverse nursing students. *J Transcult Nurs*, 12(4), 319-325.
- Young, S. W., & Sowell, R. L. (1997). A case management curricular model. The challenge for nursing education. *Nurse Educ*, 22(5), 13-18.
- Yu, L. C. (1987). Incontinence stress index: measuring psychological impact. *J Gerontol Nurs*, 13(7), 18-25.
- Yu, L. C., Johnson, K., Kaltreider, D. L., Hu, T. W., Brannon, D., & Ory, M. (1991). Urinary incontinence: nursing home staff reaction toward residents. *J Gerontol Nurs*, 17(11), 34-41.
- Yu, L. C., & Kaltreider, D. L. (1987). Stressed nurses dealing with incontinent patients. *J Gerontol Nurs*, 13(1), 27-30.
- Zawadski, R.T., & Eng, C. (1988). Case Management in Capitated Long-Term Care Healthcare. *Finance Review Annual Supplement*, 75-81.
- Zehetmayr, B. (2000). Palliative care in a residential setting: can it be done? *Nursing & Residential Care*, 2(2), 60.
- Zhan, C., & Miller, M. R. (2003a). Administrative data based patient safety research: a critical review. *Qual Saf Health Care*, 12 Suppl 2, ii58-63.
- Zhan, C., & Miller, M. R. (2003b). Excess length of stay, charges, and mortality attributable to medical injuries during hospitalization. *JAMA*, 290(14), 1868-1874.
- Ziguras, S. J., & Stuart, G. W. (2000). A meta-analysis of the effectiveness of mental health case management over 20 years. *Psychiatr Serv*, 51(11), 1410-1421.

- Ziguras, S. J., Stuart, G. W., & Jackson, A. C. (2002). Assessing the evidence on case management. *Br J Psychiatry*, 181, 17-21.
- Zimmer, J. G., Eggert, G. M., & Chiverton, P. (1990). Individual versus team case management in optimizing community care for chronically ill patients with dementia. *J Aging Health*, 2(3), 357-372.
- Zink, M. R. (2001). Case management is critical in PPS. *Home Healthc Nurse*, 19(5), 283-288; quiz 289.
- Zink, M. R. (2005). Episodic case management in home care. *Home Healthc Nurse*, 23(10), 655-662.
- Zurn, P., Dal Poz, M. R., Stilwell, B., & Adams, O. (2004). Imbalance in the health workforce. *Hum Resour Health*, 2(1), 13.

## Appendices

## Appendix A: Literature Search Mapping

Table A.1: Final Comprehensive Review Search

Keyword	Number of Articles Retrieved*			
	CINAHL	COCHRANE	MEDLINE	PsycINFO (2000-present)
'Aged care'	37503	3	69716	212
Resident\$	16514	13	18356	15045
'Australia\$ healthcare'	96	48	0	24
'Case manage\$'	9819	12	2659	2090
'Case management model'	175	18	25	36
'Care manage\$'	1904	37	1621	542
'Outcome manage\$'	6807	0	29758	30
'Organisation\$ /Organization\$ vision'	0	2	2	30
'Case ratio\$'	6	2	11	2
'Critical pathway\$'	382	17	960	21

\* Note these numbers do reflect considerable replication

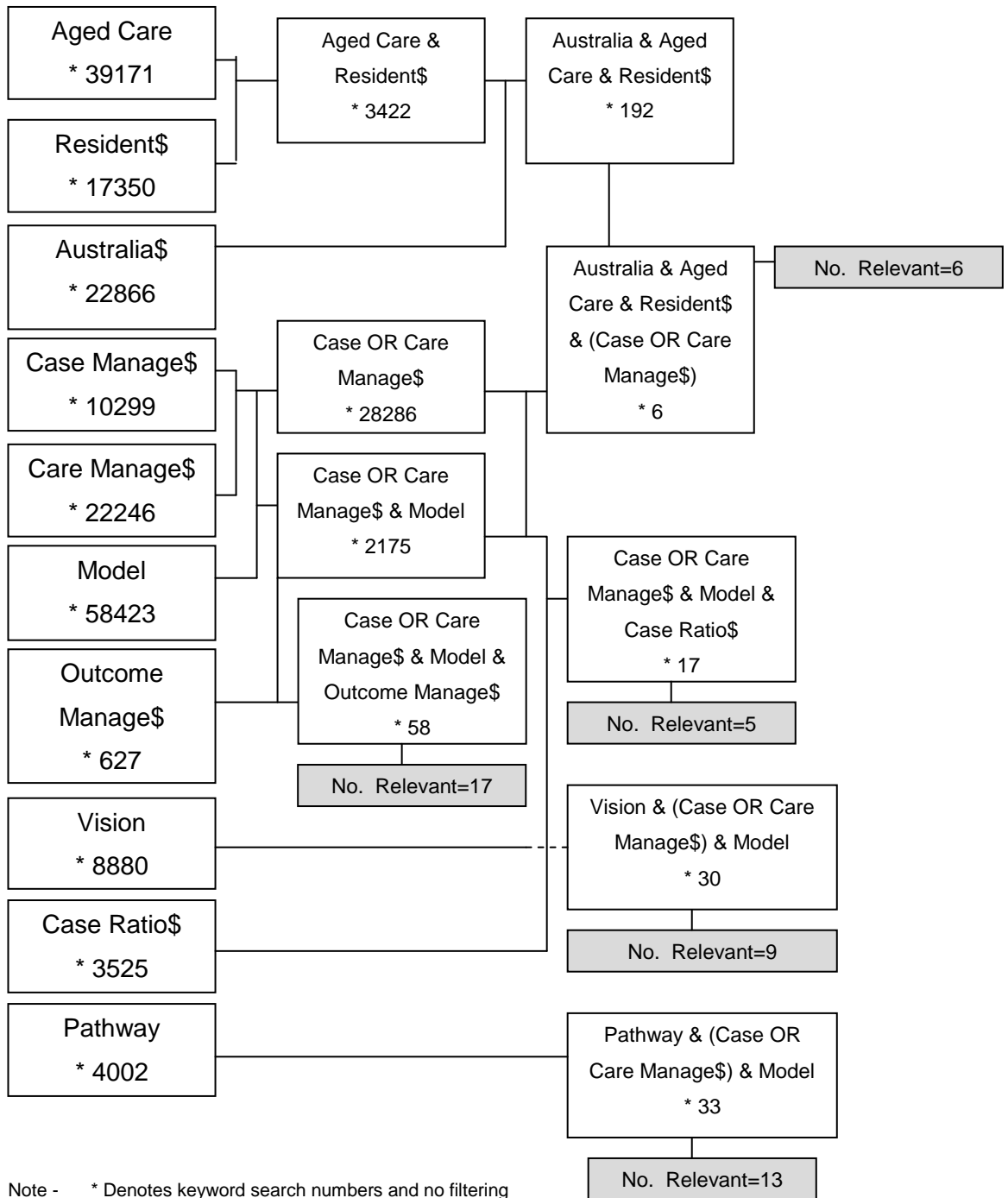
Table A.2: Mapping of CINAHL Searches to Facilitate Search Strategy

Keyword	CINAHL search results			
	Keyword – No Filters	Title – No Filters	Keyword – English, 2000-8 and Full Text	Title – English, 2000-8, and Full Text
'Aged care'	39171	714	7461	58
Resident\$	17350	5428	3320	1029
'Australia\$ healthcare'	2059	30	299	0
'Case manage\$'	10299	3741	1075	403
'Case management model'	227	71	31	8
Model	58423	13149	12496	1883
'Care manage\$'	22246	941	2531	149
'Outcome manage\$'	627	10	154	0
Vision'	8880	2846	1113	236
'Case ratio\$'	3525	0	1454	0
'Pathway\$'	4002	1286	1062	238

\* Note these numbers do reflect considerable replication



Figure A.1: Mapping of CINAHL Searches to Facilitate Search Strategy



## Appendix B: GRADE

*Table B.1: GRADE; Factors that may Decrease the Quality of Evidence*

Rating	Underlying Methodology
1	Limitations in the design and implementation of available studies suggesting high likelihood of bias.
2	Indirectness of evidence (indirect population, intervention, control, outcomes).
3	Unexplained heterogeneity or inconsistency of results (including problems with subgroup analyses).
4	Imprecision of results (wide confidence intervals).
5	High probability of publication bias.

*Table B.2: GRADE; Factors that may Increase the Quality of Evidence*

Rating	Underlying Methodology
1	Large magnitude of effect
2	All plausible confounding would reduce a demonstrated effect or suggest a spurious effect when results show no effect
3	Dose-response gradient

Table B.3: GRADE; Risk of Bias to Judgments about Study Limitations from Main Outcomes

Risk of Bias	Across Studies	Interpretation	Considerations	GRADE assessment of study limitations
Low risk of bias	Most information is from studies at low risk of bias.	Plausible bias unlikely to seriously alter the results	No apparent limitations	No serious limitations, do not downgrade
Unclear risk of bias	Most information is from studies at low or unclear risk of bias.	Plausible bias that raises some doubt about the results.	Potential limitations are unlikely to lower confidence in the estimate of effect.	No serious limitations, do not downgrade
			Potential limitations are likely to lower confidence in the estimate of effect.	Serious limitations, downgrade one level
High risk of bias	The proportion of information from studies at high risk of bias is sufficient to affect the interpretation of results.	Plausible bias that seriously weakens confidence in the results.	Crucial limitation for one criterion, or some limitations for multiple criteria, sufficient to lower confidence in the estimate of effect.	Serious limitations, downgrade one level.
			Crucial limitation for one or more criteria to sufficiently lower confidence in the estimate of effect.	Very serious limitations, downgrade two levels

## **Appendix C: Survey**

Distributed to all Australian Residential Aged Care Facilities in April 2007

Sunday, 29 April 2007

Dear Facility Manager,

**Re: Case Management in Australian Residential Aged Care Facilities**

I would like to invite you to participate in my research project on Case Management in Australian Residential Aged Care Facilities (RACFs). It is my intention to survey all RACFs in Australia, to identify where facilities are at in case management, the skill levels of staff and review the time pressures on actual resident care. With your cooperation in completing this survey, these results should inform government and industry as to the difficulties faced in RACFs, for example lack of funding, increased documentation and skill shortages.

This survey must be completed by the Facility Manager. This is the person responsible to the day to day running of the facility. It will take 40 minutes of your valuable time to complete. Please return the survey in the self addressed and pre paid envelope as soon as possible.

Case management is an integrative and collaborative process of coordinating individual care through assessment, planning, implementation and evaluation. The Case Management Society of America (2002) defines case management as a "collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality cost-effective outcomes".

Confidentiality and privacy will be ensured as facilities and organisations will not be identified in any way in the data reported. Completion of this survey is voluntary and no repercussions will take place if you wish to not complete the survey. Consent is implied on receipt of a completed survey. If questions are left blank, remaining data will be utilised. If you would like a copy of the summary report of the data collected in the survey, please email me with your details.

Please feel free to contact myself, or my supervisor, Professor Sharon Moore at shmoore@uws.edu.au if you would like further explanation. Thank you, for your time and commitment to improving health care for older Australians.

Regards,

Production Note:

Signature removed prior to publication.

Nicole Brooke

PhD Candidate

University of Western Sydney

This study has been approved by the University of Western Sydney Human Research Ethics Committee. The Approval Number is HREc 08/118. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Research Ethics Officers (tel: 02 4738 0883 or 4738 0884). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Return Mailing Address is:

Nicole Brooke  
School of Management (Parramatta Campus)  
University of Western Sydney  
Locked Bag 1797  
Penrith South DC NSW 1797  
Australia

# CASE MANAGEMENT SURVEY

(FOR COMPLETION BY FACILITY MANAGER)

1. Number of Residents in your Aged Care Facility (inc Respite & Transitional): \_\_\_\_\_ High Care Residents  
 \_\_\_\_\_ Low Care Residents

2. Number of Extra Service Residents (inc Respite and Transitional): \_\_\_\_\_ High Care Residents  
 \_\_\_\_\_ Low Care Residents

3. Is your facility considered (please tick)?  Rural  Regional

4. Is your facility (please tick)?  For Profit  Not For Profit

5. Does your facility have (please tick)?  Religious Affiliations  No Religious Affiliations

6. What state is the facility located in (please write)? \_\_\_\_\_

7. Is your facility currently accredited for (please tick)?  3 years  2 years  
 1 year  Currently sanctioned  
 Not Accredited (Privately funded)

8. Number of residents (please state numbers of residents in the box):

	High Care Residents	Low Care Residents
a. with diagnosis of dementia		
b. with diagnosis of depression		
c. who are incontinent or have episodes of incontinence		
d. who are or have a history of being aggressive		
e. who are receiving palliative care interventions		

9. Indicate to what extent you agree or disagree with the statements listed below by ticking once for each statement:

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
We are currently actively participating in case management					
We are planning to improve in case management within the next year.					
Case management is currently in the organisations' vision statement					
Our staffing budget meets the needs of our current residents					
"Care plans are currently predominately a funding tool, as opposed to a document reflecting actual individualised care"					
Actual daily care of residents frequently differs from what is stated in the care plan					

10. How many hours (24 hour period) did each designation of people's work TODAY?

For example - 8 RNs worked 6hrs each including breaks, therefore RNs totalled 48

- a. Direct Manager of Facility \_\_\_\_\_ hours \_\_\_\_\_ minutes
- b. Registered Nurses (RN) \_\_\_\_\_ hours \_\_\_\_\_ minutes
- c. Enrolled Nurses (or Certificate IV equivalent) (EN) \_\_\_\_\_ hours \_\_\_\_\_ minutes
- d. Care Service Employees (CSE/ AIN/ PCAs) \_\_\_\_\_ hours \_\_\_\_\_ minutes

11. Pick a resident in the room closest to your office. How many hours was spent 1:1 with that resident TODAY (24 hour period)?

- a. Direct Manager of Facility \_\_\_\_\_ hours \_\_\_\_\_ minutes
- b. Registered Nurses (RN) \_\_\_\_\_ hours \_\_\_\_\_ minutes
- c. Enrolled Nurses (or Certificate IV equivalent) (EN) \_\_\_\_\_ hours \_\_\_\_\_ minutes
- d. Care Service Employees (CSE/ AIN/ PCAs) \_\_\_\_\_ hours \_\_\_\_\_ minutes

12. Currently how would you rate the following in your facility? (Please place 1 tick per horizontal line)

	Very High	High	Reasonable	Low	Very Low
Staff Workload					
Staff Turnover					

13. Currently, how would you rate the following in your facility? (Please place 1 tick per horizontal line)

	Very Good	Good	OK	Poor	Very Poor
Staff Morale					
Staff Team Work					



14. Tick the designation who mostly performs the following tasks currently? (Please place 1 tick per horizontal line)

	Manager	RN	EN / Cert IV	CSE/AIN/PCA
Conducting Assessments				
Writing Care Plans				
Evaluation of Care Plans				
Daily Documentation				
RCS Documentation (inc annual reappraisals)				

15. Currently, we use the following for all our residents (Circle one):

- a. Care Plans
- b. Clinical Pathways <sup>\*</sup>
- c. Combination of care plans and pathways
- d. Other. Please state \_\_\_\_\_

<sup>\*</sup> Clinical Pathways are a variation of a care plan that utilises a timeline framework in order to coordinate a multidisciplinary approach in a timely and efficient manner. Clinical pathways are a sequential set of documentation of predicted events and milestones that is expected for the resident

16. You currently conduct case conferences for (Circle one):

- a. No Residents
- b. No Residents, as we communicate regularly with all key stakeholders
- c. Only with residents or families who have challenging behaviours or specific issues
- d. Try to do as many as possible but aim for all
- e. All New Residents
- f. All Residents (new and existing)

17. You currently conduct case conferences on all residents (Circle one):

- a. Never
- b. Annually
- c. At least twice a year
- d. At least four times a year
- e. More than four times a year

18. Who is involved in the majority of case conferences (Circle as many as necessary)?

- a. Don't run case conferences
- b. Care Staff (inc CSEs, ENs, RNs)
- c. Activity Staff
- d. Physiotherapist
- e. Medical Practitioner
- f. Pharmacist
- g. Management Personnel
- h. Administration Personnel
- i. Other: Please State: \_\_\_\_\_

18. Overall, how would you rate the following abilities of staff in each designation? (Place a score of 1-5 in each box).

1 is very POOR

2 is POOR,

3 is satisfactory

4 is GOOD

5 is very GOOD.

If you have none of this classification, write N/A)

	Manager	RN	EN / Cert IV	CSE/AIN/PCA
Assessment Skills of the Elderly				
Ability to Initiate Care				
Evaluation of Care Plans				
Documentation				
Leadership				
Advocacy				
Knowledge of Clinical Care of the Elderly				
Knowledge of Dementia				
Knowledge of Continence and Incontinence				
Knowledge of Palliative Care				
Application of Pain Management Strategies				
Management of Aggressive Residents				
Administration of Medication				

20. Overall, rate the overall attendance and effectiveness, in their service delivery, as deemed necessary by your residents needs: (Place a score of 1-5 in each box).

1 is very POOR

2 is POOR,

3 is satisfactory

4 is GOOD

5 is very GOOD.

If you have none of this classification, write N/A)

	Attendance	Effectiveness
Medical Practitioner		
Pharmacist		
Physiotherapist		
Podiatrist		

***IF YOU ARE CURRENTLY DOING CASE MANAGEMENT (OR VARIATION OF)***

***PLEASE CONTINUE, OTHERWISE THANK YOU FOR YOUR TIME!***

**COMPLETE THE FOLLOWING QUESTIONS IF YOU ARE CURRENTLY DOING  
CASE MANAGEMENT IN YOUR FACILITY.**

21. Who is primarily responsible for Case Management (i.e. - case manager) (circle only one)?

- a. Direct Manager of Facility
- b. Registered Nurses (RN)
- c. Enrolled Nurses (or Certificate IV equivalent) (EN)
- d. Care Service Employees (CSE/ AIN/ PCAa)

22. What level of training has been provided specifically in case management in past 2 years for the case managers (circle more than one if necessary)?

- a. Postgraduate
- b. Development / Up skilling Program (2 or more days)
- c. 1 Day Workshop/ Course
- d. In-service education
- e. Mentoring
- f. On the Job
- g. Nil

23. For persons involved in case management, is it clearly identified in all their position descriptions (Circle one)?

- a. Yes
- b. No

24. Complete the following table:

(For Example: A 60 bed facility, has 3 case managers who are RNs. Their ratio is split as 20 residents per 20 hours worked. They are each given 4 hours per week "off the floor", totalling 12 hours / week. Therefore it would be written as:

RN	3	20 residents / 20 hours worked per week	12 hours/week
----	---	---	---------------

Please complete the following for your facility:

	Number of staff per designation who are case managing	Ratio for case management: Each Person (eg RN) is responsible to case manage:	Total number of hours <u>Off The Floor</u> to do Case Management per week
RN		___ residents / ___ hours worked per week	_____ hours/week
EN or Cert IV		___ residents / ___ hours worked per week	_____ hours/week
CSE		___ residents / ___ hours worked per week	_____ hours/week

## Appendix D: Survey Coding

Table D.1: Survey Coding

Part	No.	Survey Question	Code Description
Demographic Information	1	Number of clients	Type Number
	2	Number of extra service clients	Type Number
	3	Location of facility	1. Rural 2. Regional
	4	Type of facility	1. For Profit 2. Not For Profit
	5	Religious affiliations	1. Religious Affiliations 2. No Religious Affiliations
	6	Location of facility	1. NSW                      5. Tas 2. Qld                      6. NT 3. SA                        7. ACT 4. WA                       8. Vic
	7	Years of accreditation	1. 1 yr accreditation 2. 2 yr accreditation 3. 3 yr accreditation 4. Currently Sanctioned 5. Not Accredited (Privately Owned)
	8	Clients with specific issues	Write Number
General Information about the Facility	9a	Participation in CM*	1. Strongly Agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree
	9b	Planning to improve	1. Strongly Agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree
	9c	Organisation' vision statement	1. Strongly Agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree
	9d	Staffing budget meets needs	1. Strongly Agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree
	9e	Care plans are a funding tool	1. Strongly Agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

Table D.1: Survey Coding (2 of 3 pages)

Part	No.	Survey Question	Code Description
General Information about the Facility	9f	Daily care of clients differs	1. Strongly Agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree
	10	Hours worked per designation.	Write Hours
	11	Hours 1:1 with that resident	Write Hours
	12a	Staff workload	1. Very High 2. High 3. Reasonable 4. Low 5. Very Low
	12b	Staff turnover	1. Very High 2. High 3. Reasonable 4. Low 5. Very Low
	13a	Staff morale	1. Very Good 2. Good 3. OK 4. Poor 5. Very Poor
	13b	Staff teamwork	1. Very Good 2. Good 3. OK 4. Poor 5. Very Poor
	14	Task allocation	1. Manager 2. RN 3. Care Worker (Advanced) 4. Care Worker
	15	Care plans	1. Care Plans 2. Clinical Pathways 3. Combination of Care Plans and Pathways 4. Other (Write)
	16	Case conferences (numbers)	1. No Clients 2. No clients as we communicate regularly with key stakeholders 3. Only with clients and families who have challenging behaviours or specific needs 4. Try to do as many as possible 5. All new clients 6. All clients (new and existing)

Table D.1: Survey Coding (3 of 3 pages)

Part	No.	Survey Question	Code Description
General Information about the Facility	17	Case conferences (frequency)	1. Never 2. Annually 3. At least twice a year 4. At least four times a year 5. More than four times a year
	18	Case conferences (personnel)	1. In each column related to personnel 1. Very Poor
	19	Skill / abilities of staff (entered for each skill/ability and classification of staff)	2. Poor 3. OK 4. Good 5. Very Good
	20	Allied health professionals (entered as attendance and effectiveness for each professional)	1. Very Poor 2. Poor 3. OK 4. Good 5. Very Good
Currently Practising	21	Primary person in CM*	1. Facility Manager 2. RN 3. Care Worker (Advanced) 4. Care Worker
	22	Level of education	1. For each type of training in each column
	23	Job description	1. Yes 2. No
	24	Ratios and hours worked	Write Numbers

## Appendix E: Data Analysis Plan

Table E.1 Data Analysis Plan

Chapter	Variable	Variable	Test(s)
<b>Results: Research Objective 1</b>	Rural and Regional	No. Of Clients	M-W-Uz
		For Profit	CC $\chi^2$
		Religious Affiliation	CC $\chi^2$
		Task allocation	<i>Linear by linear association <math>\chi^2</math></i>
		Skill & Knowledge	M-W-Uz
		Health Professionals	M-W-Uz
	Extra Service	No. Of Clients	M-W-Uz
		Staffing Hours	M-W-Uz
		For Profit	CC $\chi^2$
	Religious Affiliation	No. Of Clients	M-W-Uz
		Staffing Hours	M-W-Uz
		Facility Size	CC $\chi^2$
		For Profit	CC $\chi^2$
	For Profit vs. Not For Profit	No. Of Clients	M-W-Uz
		Client Acuity	M-W-Uz
		Staffing Hours	M-W-Uz
		Facility Size	CC $\chi^2$
		Task allocation	<i>Linear by linear association <math>\chi^2</math></i>
		Skill & knowledge	M-W-Uz
	Years of Accreditation	Daily care vs. care plan	K-W $\chi^2$
		Staff Morale	K-W $\chi^2$
		Health Professionals	K-W $\chi^2$
		One on One time	K-W $\chi^2$
	Managers Hours Worked	No. Of Clients	M-W-Uz
		Client Acuity	M-W-Uz
		Staffing Hours	M-W-Uz
		Facility Size	CC $\chi^2$
		Knowledge & Skills	M-W-Uz
Health Professionals		M-W-Uz	
Client Acuity 50% with dementia	Forecasting national %	%	
	No. Of clients	M-W-Uz	
	Client Acuity	M-W-Uz	
	Staffing Hours	M-W-Uz	
	Location	CC $\chi^2$	
	For Profit	CC $\chi^2$	
	Skills & Knowledge	M-W-Uz	

Table E.1: Data Analysis Plan (2 of 3 pages)

Chapter	Variable	Variable	Test(s)	
<b>Results: Research Objective 3</b>	CMx in vision	Religious affiliation	CC $\chi^2$	
		Actively participation in CMx	M-W-Uz	
		Planning on implementing/improving	M-W-Uz	
		Budget meets clients needs	M-W-Uz	
		Review of Org. Vision statements	Addition	
	Case Manager	No. Of clients	K-W $\chi^2$	
		Client Acuity	K-W $\chi^2$	
		Staffing Hours	K-W $\chi^2$	
		Task Allocation	<i>Linear by linear association</i> $\chi^2$	
	RN Case Manager	No. Of clients	M-W-Uz	
		Client Acuity	M-W-Uz	
		Staffing Hours	M-W-Uz	
	Staff Competence	Staff Categories	Friedman $\chi^2$	
		Medication Admin.	Staff Categories	Wilcoxon Signed Ranks Test z
		Palliative care	Appl. Of Palliative care interventions	<i>Linear by linear association</i> $\chi^2$
		RN Leadership	Daily care vs. care plan	<i>Linear by linear association</i> $\chi^2$
			Staff Workload	<i>Linear by linear association</i> $\chi^2$
			Staff Turnover	<i>Linear by linear association</i> $\chi^2$
			Staff Morale	<i>Linear by linear association</i> $\chi^2$
			Staff Teamwork	<i>Linear by linear association</i> $\chi^2$
			Skills and Knowledge	<i>Linear by linear association</i> $\chi^2$
			Health Professionals	<i>Linear by linear association</i> $\chi^2$
	Manager Working Hours	<i>Linear by linear association</i> $\chi^2$		
	Budget meets clients needs	Accreditation Years	K-W $\chi^2$	
		Daily care vs. care plan	K-W $\chi^2$	
		Staff Workload	K-W $\chi^2$	
		Staff Turnover	K-W $\chi^2$	
Staff Morale		K-W $\chi^2$		
Staff Teamwork		K-W $\chi^2$		
Health Professionals		K-W $\chi^2$		
Case conferences in CMx facilities	Conducting case conferences	K-W $\chi^2$		
	Frequency of case conferences	K-W $\chi^2$		
	Staff involved in conferences	K-W $\chi^2$		
Conducting case conferences	No. Of clients	M-W-Uz		
	Actively participating in CMx	M-W-Uz		



Table E.1: Data Analysis Plan (3 of 3 pages)

Chapter	Variable	Variable	Test(s)
<b>Results: Research Objective 3</b>	Staff Workload	Staff Turnover	Linear by linear association $\chi^2$
	Staff Turnover	Staff Workload	Linear by linear association $\chi^2$
		Staff Morale	Linear by linear association $\chi^2$
		Staff Teamwork	Linear by linear association $\chi^2$
	Staff Morale	Staff Turnover	Linear by linear association $\chi^2$
		Staff Workload	Linear by linear association $\chi^2$
	Staff Teamwork	Staff Turnover	Linear by linear association $\chi^2$
		Staff Morale	Linear by linear association $\chi^2$
	Self Reported facilities	CMx Currently participating in CMx Planning to improve in CMx in next yr	K-W $\chi^2$
			K-W $\chi^2$
	Caseload	Ratios of staff	M-W-Uz
	Criteria Assessed CMx vs. Non Criteria assessed	No. Of facilities Religious Budget meets needs of clients Staff workload Staff morale Staff teamwork Skill & Knowledge Health Professionals CMx in Position description Undertaking case conferences Allocation of caseloads	M-W-Uz
			CC $\chi^2$
M-W-Uz			
M-W-Uz			
M-W-Uz			
M-W-Uz			
M-W-Uz			
M-W-Uz			
CC $\chi^2$			
CC $\chi^2$			
CC $\chi^2$			

## Appendix F: Survey Data

Table F.1: Demographic Survey Data (Part I)

	Item	Mean (SD) Range	Total n* (%)
1 and 2	Total Clients		
	Non extra service		
	High care clients	35.2 (28.4) 0-152	16,608 (62.8)
	Low care clients	20.8 (24.3) 0-140	9,832 (37.2)
	Total clients	56.2 (35.2) 0-212	26,440
	Extra service		
	High care clients	0.9 (6.6) 0-66	418 (72.7)
	Low care clients	0.3 (2.9) 0-34	157 (27.3)
	Total clients	1.2 (7.7) 0-81	575
	Total (Non extra service + extra service)		
	High care clients	36.1 (28.6) 0 - 152	17,026 (63.0)
	Low care clients	21.2 (24.6) 0 - 150	9,989 (37.0)
	Total clients	57.2 (35.2) 5 - 212	27,015
	Facility Size		
	1-60 Clients		303 (64.3)
	>60 Clients		168 (35.7)
3	Location		
	Rural		165 (34.8)
	Regional		309 (65.2)
4	Profit		
	For profit		119 (25.2)
	Not for profit		353 (74.8)
5	Religious		
	Religious affiliation		173 (36.6)
	No religious affiliation		300 (63.4)
6	State and Territory		
	NSW		181 (38.2)
	Victoria		115 (24.3)
	Queensland		69 (14.6)
	SA		45 (9.5)
	WA		36 (7.6)
	Tasmania		17 (3.6)
	NT		6 (1.3)
	ACT		5 (1.1)
7	Accreditation		
	1 Year		15 (3.2)
	2 Years		19 (4.0)
	3 Years		440 (92.8)

\* data were missing for some items, so not all categories sum to n = 474 facilities.

Table F.1: Demographic Survey Data (Part I) (2 of 2 pages)

	Item	Mean (SD) Range	Total n* (%)
8	Client Acuity		
	Dementia Diagnosis		
	High care clients	21.3 (20.1) 0-120	10,080 (75.9)
	Low care clients	6.7 (11.8) 0-90	3,194 (24.1)
	Total clients	28.0 (23.5) 0-160	13,274
	Percentage of clients with dementia ( <i>Total clients/total facility</i> ) x 100	48.7 (25.1) 0-100	
	Facilities with dementia		
	0-50% of clients with dementia		211 (44.7)
	>50% of clients with dementia		261 (55.3)
	Depression Diagnosis		
	High care clients	8.6 (10.7) 0-70	4,053 (67.5)
	Low care clients	4.1 (6.9) 0-76	1,948 (32.5)
	Total clients	12.7 (13.9) 0-112	6,001
	Percentage of clients with depression ( <i>Total clients/total facility</i> ) x 100	22.9 (18.0) 0-100	
8	Clients with incontinence		
	High care clients	27.5 (25.0) 0-150	13,036 (79.4)
	Low care clients	7.1 (11.6) 0-85	3,378 (20.6)
	Total clients	34.6 (27.1) 0-167	16,414
	Percentage of clients with incontinence ( <i>Total clients/total facility</i> ) x 100	61.0 (27.3) 0-100	
	Clients with aggressive behaviour		
	High care clients	7.7 (11.9) 0-120	3,651 (80.5)
	Low care clients	1.9 (4.7) 0-65	883 (19.5)
	Total clients	9.6 (13.3) 0-120	4,534
	Percentage of clients with aggression ( <i>Total clients/total facility</i> ) x 100	17.2 (19.1) 0-100	
	Clients receiving palliative care		
	High care clients	3.2 (9.5) 0-140	1,510 (91.8)
	Low care clients	0.3 (0.9) 0-10	134 (8.2)
	Total clients	3.5 (9.6) 0-140	1,644
	Percentage of clients receiving palliative care ( <i>Total clients/total facility</i> ) x 100	6.6 (15.5) 0-100	

\* data were missing for some items, so not all categories sum to n = 474 facilities.

Table F.2: Case Management Survey Data (Part II)

	Item	Mean (SD) Range	Total n* (%)
9a	Currently actively participating in case management		
	Strongly Agree + Agree		338 (73.0)
	Undecided		35 (7.6)
	Strongly Disagree + Disagree		90 (19.4)
9b	Planning to improve in case management within the next year		
	Strongly Agree + Agree		325 (71.2)
	Undecided		82 (17.9)
	Strongly Disagree + Disagree		50 (10.9)
9c	Case management is currently in the organisations vision statement		
	Strongly Agree + Agree		194 (43.0)
	Undecided		88 (19.5)
	Strongly Disagree + Disagree		169 (37.5)
9d	Staffing budget meets the needs of clients		
	Strongly Agree + Agree		250 (54.3)
	Undecided		57 (12.4)
	Strongly Disagree + Disagree		153 (33.3)
9e	Care plans are currently predominantly a funding tool, rather than an individualised care planning tool		
	Strongly Agree + Agree		146 (31.5)
	Undecided		32 (6.9)
	Strongly Disagree + Disagree		286 (61.6)
9f	Actual daily care of clients frequently differs from what is stated in the care plan		
	Strongly Agree + Agree		83 (17.9)
	Undecided		21 (4.5)
	Strongly Disagree + Disagree		360 (77.6)
10	Care staffing hours worked (24 hr duration)		
	Facility Manager	9.3 (3.1) 3-42	(6.7)
	Worked ≤ 8hrs on data collection day		239 (52.6)
	Worked >8hrs on data collection day		215 (47.4)
	Registered Nurse	24.9 (16.2) 2-93	(17.9)
	Care Worker (Advanced)	24.5 (21.7) 2-120	(17.6)
	Care Worker	80.7 (64.3) 4-439	(57.9)
	Total on the floor (RN + C.W. (Adv) + C.W.)	110.7 (81.7) 5-513	

\* data were missing for some items, so not all categories sum to n = 474 facilities.

Table F.2: Case Management Survey Data (Part II) (2 of 3 pages)

	Item	Mean (SD) Range	Total n* (%)
11	Total one-on-one time with client closest to Managers office		
	Facility Manager	0.2 (0.3) 0-4.0	(9.5)
	Registered Nurse	0.4 (0.4) 0-3.0	(19.0)
	Care Worker (Advanced)	0.5 (0.5) 0-3.5	(23.8)
	Care Worker	5 (0.8) 0-5.5	(47.6)
	Total on the floor (RN + C.W. (Adv) + C.W.)	1.6 (1.2) 0-7.5	
12	Staff workload		
	Very high + high		322 (68.4)
	Reasonable		147 (31.2)
	Very low + low		2 (0.4)
	Staff turnover		
	Very high + high		35 (7.5)
	Reasonable		150 (32.1)
	Very low + low		283 (60.5)
13	Staff morale		
	Very good + good		324 (68.8)
	OK		122 (25.9)
	Very poor + poor		25 (5.3)
	Staff teamwork		
	Very good + good		339 (72.1)
	OK		105 (22.3)
	Very poor + poor		26 (5.5)
14	Designation of staff who predominantly:		
	Conduct client assessments		
	Manager		111 (23.4)
	Registered Nurse		271 (57.2)
	Care Worker (Advanced)		53 (11.2)
	Care Worker staff		39 (8.2)
	Writing care plans		
	Manager		136 (28.7)
	Registered Nurse		252 (53.2)
	Care Worker (Advanced) staff		57 (12.0)
	Care Worker staff		29 (6.1)

\* data were missing for some items, so not all categories sum to n = 474 facilities.

Table F.2: Case Management Survey Data (Part II) (3 of 3 pages)

	Item	Mean (SD) Range	Total n* (%)
14	Evaluating care plans		
	Manager		105 (22.2)
	Registered Nurse		284 (59.9)
	Care Worker (Advanced) staff		53 (11.2)
	Care Worker staff		32 (6.8)
	Daily documentation		
	Manager		46 (9.7)
	Registered Nurse		201 (42.4)
	Care Worker (Advanced) staff		71 (15.0)
	Care Worker staff		156 (32.9)
	RCS (funding) documentation (inc appraisals)		
	Manager		232 (48.9)
	Registered Nurse		184 (38.8)
	Care Worker (Advanced) staff		31 (6.5)
Care Worker staff		27 (5.7)	
15	For our clients we currently use:		
	Care Plans		435 (92.2)
	Clinical Pathways		0.0 (0)
	Combination of care plans and pathways		36 (7.6)
	Other:                      (Daily checklists)		1 (0.2)

\* data were missing for some items, so not all categories sum to n = 474 facilities.

Table F.3: Case Conferencing Survey Data (Part II)

	Item	Mean (SD) Range	Total n* (%)
16	Currently conduct case conferences for:		
	No clients		12 (2.5)
	No clients as we communicate regularly		57 (12.1)
	Only clients with challenging behaviours		81 (17.2)
	Try to do as many as possible, but aim for all		112 (23.8)
	All new clients		34 (7.2)
	All clients (new and existing)		175 (37.2)
17	Frequency of case conferences		
	Never		111 (23.8)
	Annually		266 (57.0)
	At least twice a year		41 (8.8)
	At least four times a year		29 (6.2)
	More than four times a year		20 (4.3)
18	Who is involved in the majority of case conferences**		
	Do not conduct case conferences		61 (13.0)
	Do conduct case conferences		410 (87.0)
	Care staff (RN, C.W. and C.W. (Adv.))		385 (25.4)
	Activity staff		256 (16.9)
	Physiotherapist		161 (10.6)
	Medical Practitioner		209 (13.8)
	Pharmacist		83 (5.5)
	Management		250 (16.5)
	Administration staff		40 (2.6)
	Client		35 (2.3)
	Relative/person responsible		75 (5.0)
	Catering staff		4 (0.3)
	Chaplain		4 (0.3)
	Occupational Therapist		4 (0.3)
	Dietician		2 (0.1)
	Psycho geriatrician		2 (0.1)
	Community Nurse		1 (0.1)
	Psychiatrist		1 (0.1)
	Psycho geriatric Assessment Team		1 (0.1)
	Social Worker		1 (0.1)

\* data were missing for some items, so not all categories sum to n = 474 facilities.

\*\* Respondents were able to select more than one answer here

Table F.4: Facility Manager-reported Staff Skill & Knowledge Survey Data (Part II)

Item	Manager <i>n</i> * (%)	RN <i>n</i> * (%)	Care Worker (Advanced) <i>n</i> * (%)	Care Worker <i>n</i> * (%)
19 Skills in client assessment				
Very good + good	403 (92.0)	351 (82.6)	214 (63.1)	121 (1.8)
Satisfactory	28 (6.4)	62 (14.6)	100 (29.5)	217 (45.1)
Very poor + poor	7 (1.6)	12 (2.8)	25 (7.4)	88 (23.1)
Ability to initiate care				
Very good + good	402 (95.0)	371 (87.7)	247 (72.6)	212 (49.3)
Satisfactory	16 (3.8)	42 (9.9)	76 (22.4)	161 (37.4)
Very poor + poor	5 (1.2)	10 (2.4)	17 (5.0)	57 (13.3)
Evaluation of care plans				
Very good + good	385 (93.9)	327 (77.9)	173 (57.9)	76 (22.5)
Satisfactory	16 (3.9)	79 (18.8)	91 (30.4)	129 (38.2)
Very poor + poor	9 (2.2)	14 (3.3)	35 (11.7)	133 (39.9)
Client Documentation				
Very good + good	387 (91.5)	336 (80.0)	222 (66.7)	146 (34.4)
Satisfactory	28 (6.6)	71 (16.9)	92 (27.6)	186 (43.9)
Very poor + poor	8 (1.9)	13 (3.1)	19 (5.7)	92 (21.7)
Leadership				
Very good + good	416 (93.7)	271 (64.5)	151 (46.0)	89 (22.7)
Satisfactory	24 (5.4)	116 (27.6)	134 (40.9)	179 (45.7)
Very poor + poor	4 (0.9)	33 (7.9)	43 (13.1)	124 (31.6)
Client Advocacy				
Very good + good	417 (94.8)	325 (78.7)	229 (69.0)	227 (53.9)
Satisfactory	20 (4.5)	71 (17.2)	86 (25.9)	142 (33.7)
Very poor + poor	3 (0.7)	17 (4.1)	17 (5.1)	52 (12.4)
Knowledge of clients' clinical care needs				
Very good + good	406 (92.1)	354 (83.9)	222 (65.7)	142 (32.8)
Satisfactory	31 (7.0)	60 (14.2)	95 (28.1)	205 (47.3)
Very poor + poor	4 (0.9)	8 (1.9)	21 (6.2)	86 (19.9)
Knowledge of dementia				
Very good + good	396 (89.4)	337 (80.2)	211 (62.1)	158 (35.9)
Satisfactory	41 (9.3)	68 (16.2)	104 (30.6)	216 (49.1)
Very poor + poor	6 (1.4)	15 (3.6)	25 (7.4)	66 (15.0)
Knowledge of continence, incontinence				
Very good + good	370 (84.9)	335 (79.4)	215 (63.4)	186 (42.0)
Satisfactory	58 (13.3)	77 (18.2)	100 (29.5)	188 (42.4)
Very poor + poor	8 (1.8)	10 (2.4)	24 (7.1)	69 (15.6)
Knowledge of palliative care				
Very good + good	370 (85.1)	333 (79.3)	197 (58.1)	119 (27.4)
Satisfactory	56 (12.9)	79 (18.8)	114 (33.6)	210 (48.4)
Very poor + poor	9 (2.1)	8 (1.9)	28 (8.3)	105 (24.2)
Knowledge of pain management strategies				
Very good + good	369 (85.0)	332 (79.0)	185 (54.9)	115 (27.4)
Satisfactory	53 (12.2)	78 (18.6)	118 (35.0)	185 (44.0)
Very poor + poor	12 (2.8)	10 (2.4)	34 (10.1)	120 (28.6)

\* data were missing for some items, so not all categories sum to *n* = 474 facilities.



Table F.4: Facility Manager-reported Skill and Knowledge Survey Data (Part II) (2 of 2 pages)

Item	Manager <i>n</i> * (%)	RN <i>n</i> * (%)	Care Worker (Advanced) <i>n</i> * (%)	Care Worker <i>n</i> * (%)
19 Management of aggressive clients				
Very good + good	327 (85.7)	296 (71.0)	173 (51.3)	149 (34.1)
Satisfactory	53 (12.2)	99 (23.7)	125 (37.1)	187 (42.8)
Very poor + poor	9 (2.1)	22 (5.3)	39 (11.6)	101 (23.1)
Administration of medication				
Very good + good	375 (89.1)	365 (87.1)	217 (73.6)	145 (46.8)
Satisfactory	37 (8.8)	47 (11.2)	57 (19.3)	90 (29.0)
Very poor + poor	9 (2.1)	7 (1.7)	21 (7.1)	75 (24.2)

\* data were missing for some items, so not all categories sum to *n* = 474 facilities.

Table F.5: Facility Manager-reported Health Professionals Survey Data (Part II)

Item	Attendance Total <i>n</i> * (%)	Effectiveness
20 Service delivery of the health professional in meeting the clients' needs in the facility		
Medical Practitioner		
Very good + good	301 (63.8)	307 (67.9)
Satisfactory	117 (24.8)	116 (25.7)
Very poor + poor	54 (11.4)	29 (6.4)
Pharmacist		
Very good + good	304 (66.8)	298 (67.9)
Satisfactory	117 (25.7)	115 (26.2)
Very poor + poor	34 (7.5)	26 (5.9)
Physiotherapist		
Very good + good	322 (73.3)	315 (75.2)
Satisfactory	85 (19.4)	83 (19.8)
Very poor + poor	32 (7.3)	21 (5.0)
Podiatrist		
Very good + good	305 (66.4)	306 (69.5)
Satisfactory	117 (25.5)	105 (23.9)
Very poor + poor	37 (8.1)	29 (6.6)

\* data were missing for some items, so not all categories sum to *n* = 474 facilities.

Table F.6: Case Management Survey Data (Part III)

	Item	Total n* (%)
21	Primarily responsible for case management	
	Facility Manager	126 (40.4)
	RN	157 (50.3)
	Care Worker (Advanced)	17 (5.4)
	Care Worker	12 (3.8)
22	Level of training in case management for Case Managers in past two years **	
	Case management training	
	No (responded to Qu. 22g)	45 (18.5)
	Yes (responded to Qu. 22a-f)	268 (81.5)
	Postgraduate	30 (5.5)
	2+ day course	55 (10.1)
	1 day course	55 (10.1)
	In-service education	132 (24.1)
	Mentoring	98 (17.9)
	On the job	177 (32.4)
23	Case management is in Case Manager position descriptions	
	Yes	131 (42.5)
	No	177 (57.5)

\* data were missing for some items, so not all categories sum to n = 474 facilities.

\*\* Respondents were able to select more than one answer here

Table F.7: Caseload Survey Data (Part III)

Mean ( <i>n</i> *)	No. of staff per designation who were case managing	Ratio of case management.		Off the Floor Hrs /Wk for Case Management
		Clients	Hrs Worked/Wk	
RN	3.1 (198)	27.6 (183)	28.4 (154)	10.0 (198)
Care Worker (Adv)	27.6 (59)	27.6 (57)	47.0 (51)	14.7 (60)
Care Worker	8.5 (29)	18.3 (31)	36.3 (26)	5.7 (32)

	Facilities with caseload /allocation or time allocated <i>n</i> * facilities (%)	Clients/Hrs worked per wk		Off the floor hrs/week/ case managing staff Mean (SD) Range
		Mean (SD) Range		
RN	210 (69.3)	~2 Clients / Hr / Week 1.6 (2.9) 0-30		5.4 (10.1) 0-80
Care Worker (Adv)	61 (20.1)	~4 Clients / Hr / Week 4.1 (15.7) 0-110		5.9 (9.2) 0-45
Care Worker	32 (10.6)	~2 Clients / Hr / Week 2.2 (3.9) 0-19		3.0 (5.1) 0-21

\* data were missing for some items, so not all categories sum to *n* = 474 facilities.

Table F.8: RNs Leadership Capabilities impact on the Facility

Item	RN Leadership Skill		
	Very Good & Good <i>n</i> (%)	Satisfactory <i>n</i> (%)	Very Poor & Poor <i>n</i> (%)
Actual care differs from care plan			
Strongly Agree + Agree	42 (15.7)	25 (21.7)	11 (35.5)
Undecided	10 (3.7)	7 (6.1 (7)	2 (6.5 (2)
Strongly Disagree + Disagree	215 (80.5)	83 (72.2)	18 (58.1)
Staff Turnover			
Very high + high	14 (5.2)	13 (11.6)	5 (15.2)
Reasonable	83 (30.7)	43 (38.4)	13 (39.4)
Very Low + low	173 (64.1)	56 (50.0)	15 (45.5)
Staff Morale			
Very good + good	200 (74.1)	79 (60.9)	13 (39.4)
OK	62 (23.0)	34 (29.6)	16 (48.5)
Very poor + poor	8 (3.0 (8)	11 (9.6 (11)	4 (12.1 (4)
Staff Teamwork			
Very good + good	210 (77.8)	70 (61.4)	16 (48.5)
OK	53 (16.9)	35 (30.7)	10 (30.3)
Very poor + poor	7 (2.6)	9 (7.9 (9)	7 (21.2)
Skills and Knowledge			
Assessment skills of elderly			
Manager			
Very good + good	244 (95.3)	94 (86.2)	24 (77.4)
Satisfactory	12 (4.7)	12 (11.0)	3 (9.7)
Very poor + poor	0 (0.0)	3 (2.8)	4 (12.9)
RN			
Very good + good	256 (95.2)	78 (67.2)	10 (31.3)
Satisfactory	12 (4.5)	35 (30.2)	14 (43.8)
Very poor + poor	1 (0.4 (1)	3 (2.6)	8 (25.0)
Care Worker (Advanced)			
Very good + good	147 (71.4)	45 (50.0)	7 (28.0)
Satisfactory	53 (25.7)	31 (34.4)	13 (52.0)
Very poor + poor	6 (2.9)	14 (15.6)	5 (20.0)
Care Worker			
Very good + good	69 (58.5)	19 (17.9)	4 (13.8)
Satisfactory	132 (54.5)	55 (51.9)	12 (41.4)
Very poor + poor	41 (16.9)	32 (30.2)	13 (44.8)

Table F.8: RNs Leadership Capabilities impact on the Facility (2 of 7 pages)

Item	RN Leadership Skill		
	Very Good & Good <i>n</i> (%)	Satisfactory <i>n</i> (%)	Very Poor & Poor <i>n</i> (%)
Ability to initiate care			
Manager			
Very good + good	243 (97.6)	98 (90.7)	26 (83.9)
Satisfactory	6 (2.4)	7 (6.5)	3 (9.7)
Very poor + poor	0 (0.0)	3 (2.8)	2 (6.5)
RN			
Very good + good	265 (97.8)	88 (76.5)	14 (42.4)
Satisfactory	5 (1.8)	26 (22.6)	11 (33.3)
Very poor + poor	1 (0.4)	1 (0.9)	8 (24.2)
Care Worker (Advanced)			
Very good + good	168 (81.2)	52 (57.8)	11 (44.0)
Satisfactory	37 (17.9)	27 (30.0)	10 (40.0)
Very poor + poor	2 (1.0)	11 (12.2)	4 (16.0)
Care Worker			
Very good + good	344 (95.3)	94 (86.2)	24 (77.4)
Satisfactory	12 (4.7)	12 (11.0)	3 (9.7)
Very poor + poor	0 (0.0)	3 (2.8)	4 (12.9)
Evaluation of care plans			
Manager			
Very good + good	225 (95.3)	99 (93.4)	26 (81.3)
Satisfactory	9 (3.8)	2 (1.9)	4 (12.5)
Very poor + poor	2 (0.8)	5 (4.7)	2 (6.3)
RN			
Very good + good	249 (92.2)	70 (60.9)	5 (15.6)
Satisfactory	19 (7.0)	41 (35.7)	19 (59.4)
Very poor + poor	2 (0.7)	4 (3.5)	8 (25.0)
Care Worker (Advanced)			
Very good + good	120 (66.7)	28 (34.6)	10 (50.0)
Satisfactory	47 (26.1)	38 (46.9)	3 (15.0)
Very poor + poor	13 (7.2)	15 (18.5)	7 (35.0)
Care Worker			
Very good + good	45 (23.1)	11 (13.1)	1 (4.5)
Satisfactory	82 (42.1)	28 (33.3)	5 (22.7)
Very poor + poor	68 (34.9)	45 (53.6)	16 (72.7)

Table F.8: RNs Leadership Capabilities impact on the Facility (3 of 7 pages)

Item	RN Leadership Skill		
	Very Good & Good <i>n</i> (%)	Satisfactory <i>n</i> (%)	Very Poor & Poor <i>n</i> (%)
Documentation			
Manager			
Very good + good	237 (95.6)	90 (84.1)	23 (76.7)
Satisfactory	11 (4.4)	12 (11.2)	4 (13.3)
Very poor + poor	0 (0.0)	5 (4.7)	3 (10.0)
RN			
Very good + good	256 (94.8)	70 (60.9)	8 (25.0)
Satisfactory	12 (4.4)	44 (38.3)	14 (43.8)
Very poor + poor	2 (0.7)	1 (0.9)	10 (31.3)
Care Worker (Advanced)			
Very good + good	156 (76.5)	41 (46.6)	9 (40.9)
Satisfactory	44 (21.6)	36 (40.9)	10 (45.5)
Very poor + poor	4 (2.0)	11 (12.5)	3 (13.6)
Care Worker			
Very good + good	96 (39.5)	19 (18.1)	4 (14.8)
Satisfactory	107 (44.0)	50 (47.6)	13 (48.1)
Very poor + poor	40 (16.5)	36 (34.3)	10 (37.0)
Leadership			
Manager			
Very good + good	258 (99.6)	96 (86.5)	25 (78.1)
Satisfactory	1 (0.4)	14 (12.6)	4 (12.5)
Very poor + poor	0 (0.0)	1 (0.9)	3 (9.4)
Care Worker (Advanced)			
Very good + good	123 (60.9)	14 (15.9)	2 (9.1)
Satisfactory	69 (34.2)	52 (59.1)	9 (40.9)
Very poor + poor	10 (5.0)	22 (25.0)	11 (50.0)
Care Worker			
Very good + good	66 (29.2)	5 (5.2)	0 (0.0)
Satisfactory	110 (48.7)	44 (45.4)	8 (28.6)
Very poor + poor	50 (22.1)	48 (49.5)	20 (71.4)
Advocacy			
Manager			
Very good + good	256 (98.1)	99 (90.0)	24 (77.4)
Satisfactory	5 (1.9)	11 (10.0)	4 (12.9)
Very poor + poor	0 (0.0)	0 (0.0)	3 (9.7)
RN			
Very good + good	256 (96.2)	63 (54.8)	16 (9.4)
Satisfactory	10 (3.8)	51 (44.3)	9 (29.0)
Very poor + poor	0 (0.0)	1 (0.9)	16 (51.6)

Table F.8: RNs Leadership Capabilities impact on the Facility (4 of 7 pages)

Item	RN Leadership Skill		
	Very Good & Good <i>n</i> (%)	Satisfactory <i>n</i> (%)	Very Poor & Poor <i>n</i> (%)
Advocacy			
Care Worker (Advanced)			
Very good + good	163 (79.5)	41 (47.1)	12 (52.2)
Satisfactory	41 (20.0)	35 (40.2)	7 (30.4)
Very poor + poor	1 (0.5)	11 (12.6)	4 (17.4)
Care Worker			
Very good + good	152 (61.5)	36 (35.6)	8 (29.6)
Satisfactory	80 (32.4)	39 (38.6)	1 (37.0)
Very poor + poor	15 (6.1)	26 (25.7)	9 (33.3)
Knowledge of clinical care in the elderly			
Manager			
Very good + good	247 (95.4)	93 (84.5)	26 (81.3)
Satisfactory	11 (4.2)	16 (14.5)	4 (12.5)
Very poor + poor	1 (0.4)	1 (0.9)	2 (6.3)
RN			
Very good + good	262 (97.0)	76 (66.1)	12 (36.4)
Satisfactory	7 (2.6)	39 (33.9)	14 (42.4)
Very poor + poor	1 (0.4)	0 (0.0)	7 (21.2)
Care Worker (Advanced)			
Very good + good	158 (76.3)	39 (43.8)	8 (34.8)
Satisfactory	4 (21.3)	38 (42.7)	11 (47.8)
Very poor + poor	5 (2.4)	12 (13.5)	4 (17.4)
Care Worker			
Very good + good	90 (35.9)	24 (22.6)	3 (10.7)
Satisfactory	118 (47.0)	52 (49.1)	14 (50.0)
Very poor + poor	43 (17.1)	30 (28.3)	11 (39.3)
Knowledge of dementia			
Manager			
Very good + good	244 (93.8)	92 (83.6)	25 (78.1)
Satisfactory	15 (5.8)	14 (12.7)	6 (18.8)
Very poor + poor	1 (0.4)	4 (3.6)	1 (3.1)
RN			
Very good + good	252 (93.3)	73 (63.5)	9 (28.1)
Satisfactory	16 (5.9)	37 (32.2)	15 (46.9)
Very poor + poor	2 (0.7)	5 (4.3)	8 (25.0)
Care Worker (Advanced)			
Very good + good	160 (76.9)	32 (36.4)	5 (20.8)
Satisfactory	43 (20.7)	41 (46.6)	14 (58.3)
Very poor + poor	5 (2.4)	15 (17.0)	5 (20.8)

Table F.8: RNs Leadership Capabilities impact on the Facility (5 of 7 pages)

Item	RN Leadership Skill		
	Very Good & Good	Satisfactory	Very Poor & Poor
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Knowledge of dementia			
Care Worker			
Very good + good	111 (43.7)	21 (19.6)	4 (13.8)
Satisfactory	123 (48.4)	57 (53.3)	13 (44.8)
Very poor + poor	20 (7.9)	29 (27.1)	12 (41.4)
Knowledge of Continence and Incontinence			
Manager			
Very good + good	229 (89.1)	83 (76.9)	22 (73.3)
Satisfactory	27 (10.5)	21 (19.4)	5 (16.7)
Very poor + poor	1 (0.4)	4 (3.7)	3 (10.0)
RN			
Very good + good	252 (93.3)	70 (60.9)	10 (30.3)
Satisfactory	17 (6.3)	44 (38.8)	15 (45.5)
Very poor + poor	10 (0.4)	1 (0.9)	8 (24.2)
Care Worker (Advanced)			
Very good + good	152 (73.1)	41 (46.6)	7 (30.4)
Satisfactory	51 (24.5)	34 (38.6)	11 (47.8)
Very poor + poor	5 (2.4)	13 (14.8)	5 (21.7)
Care Worker			
Very good + good	124 (48.6)	27 (24.8)	10 (34.5)
Satisfactory	102 (40.0)	56 (51.4)	9 (31.0)
Very poor + poor	29 (11.4)	26 (23.9)	10 (34.5)
Knowledge of palliative care			
Manager			
Very good + good	233 (91.0)	81 (75.0)	22 (71.0)
Satisfactory	21 (8.2)	24 (22.2)	7 (22.6)
Very poor + poor	2 (0.8)	3 (2.8)	2 (6.5)
RN			
Very good + good	247 (91.5)	73 (63.5)	11 (34.4)
Satisfactory	23 (8.5)	39 (33.9)	16 (50.0)
Very poor + poor	0 (0.0)	3 (2.6)	5 (15.6)
Care Worker (Advanced)			
Very good + good	147 (71.0)	31 (34.8)	5 (21.7)
Satisfactory	156 (27.1)	41 (46.1)	13 (56.5)
Very poor + poor	4 (1.9)	17 (19.1)	5 (21.7)
Care Worker			
Very good + good	86 (34.5)	16 (15.0)	6 (20.7)
Satisfactory	121 (48.6)	57 (53.3)	9 (31.0)
Very poor + poor	42 (16.9)	34 (31.8)	14 (48.3)



Table F.8: RNs Leadership Capabilities impact on the Facility (6 of 7 pages)

Item	RN Leadership Skill		
	Very Good & Good <i>n</i> (%)	Satisfactory <i>n</i> (%)	Very Poor & Poor <i>n</i> (%)
Application of pain management strategies			
Manager			
Very good + good	231 (90.9)	80 (73.4)	21 (70.0)
Satisfactory	18 (7.1)	25 (22.9)	6 (20.0)
Very poor + poor	5 (2.0)	4 (3.7)	3 (10.0)
RN			
Very good + good	251 (92.6)	68 (59.6)	10 (32.3)
Satisfactory	19 (7.0)	42 (37.7)	15 (48.4)
Very poor + poor	1 (0.4)	3 (2.6)	6 (19.4)
Care Worker (Advanced)			
Very good + good	140 (67.6)	25 (28.4)	5 (22.7)
Satisfactory	59 (28.5)	45 (51.1)	11 (50.0)
Very poor + poor	8 (3.9)	18 (20.5)	6 (27.3)
Care Worker			
Very good + good	84 (34.6)	8 (8.0)	3 (11.1)
Satisfactory	104 (42.8)	50 (50.0)	33.3 (9)
Very poor + poor	55 (22.6)	42 (42.0)	15 (55.6)
Management of aggressive clients			
Manager			
Very good + good	234 (91.8)	84 (76.4)	20 (69.0)
Satisfactory	19 (7.5)	22 (20.0)	7 (24.1)
Very poor + poor	2 (0.8)	4 (3.6)	2 (6.9)
RN			
Very good + good	234 (86.7)	53 (46.5)	7 (23.3)
Satisfactory	34 (12.6)	54 (47.4)	10 (33.3)
Very poor + poor	2 (0.7)	7 (6.1)	13 (43.3)
Care Worker (Advanced)			
Very good + good	132 (63.5)	25 (28.1)	6 (27.3)
Satisfactory	66 (31.7)	42 (47.2)	10 (45.5)
Very poor + poor	10 (4.8)	22 (24.7)	6 (27.3)
Care Worker			
Very good + good	111 (44.3)	15 (14.0)	6 (21.4)
Satisfactory	100 (39.5)	51 (47.7)	9 (32.1)
Very poor + poor	41 (16.2)	41 (38.8)	13 (46.4)
Administration of medication			
Manager			
Very good + good	227 (92.3)	88 (83.0)	23 (76.7)
Satisfactory	17 (6.9)	13 (12.3)	5 (16.7)
Very poor + poor	2 (0.8)	5 (4.7)	2 (6.7)
RN			
Very good + good	258 (96.3)	89 (77.4)	14 (43.8)
Satisfactory	9 (3.4)	25 (21.7)	13 (40.6)
Very poor + poor	1 (0.4)	1 (0.9)	5 (15.6)

Table F.8: RNs Leadership Capabilities impact on the Facility (7 of 7 pages)

Item	RN Leadership Skill		
	Very Good & Good <i>n</i> (%)	Satisfactory <i>n</i> (%)	Very Poor & Poor <i>n</i> (%)
Administration of medication			
Care Worker (Advanced)			
Very good + good	147 (82.1)	45 (57.0)	8 (42.1)
Satisfactory	26 (14.5)	23 (29.1)	7 (36.8)
Very poor + poor	6 (3.4)	11 (13.9)	4 (21.1)
Care Worker			
Very good + good	90 (52.0)	16 (22.2)	4 (22.2)
Satisfactory	46 (26.6)	27 (37.5)	7 (38.9)
Very poor + poor	37 (21.4)	29 (40.3)	7 (38.9)
Medical Practitioner			
Attendance			
Very good + good	192 (70.8)	52 (45.2)	17 (51.5)
Satisfactory	57 (21.0)	43 (37.4)	7 (21.2)
Very poor + poor	22 (8.1)	20 (17.4)	9 (27.3)
Effectiveness			
Very good + good	202 (76.2)	55 (50.5)	12 (42.9)
Satisfactory	50 (18.9)	46 (42.2)	12 (42.9)
Very poor + poor	13 (4.9)	8 (7.3)	4 (14.3)
Pharmacist			
Attendance			
Very good + good	186 (69.9)	60 (57.1)	17 (51.5)
Satisfactory	67 (25.2)	35 (33.3)	9 (27.3)
Very poor + poor	13 (4.9)	10 (9.5)	7 (21.2)
Effectiveness			
Very good + good	189 (72.4)	54 (53.5)	13 (46.4)
Satisfactory	62 (23.8)	38 (37.6)	10 (35.7)
Very poor + poor	10 (3.8)	9 (8.9)	5 (17.9)
Physiotherapist			
Effectiveness			
Very good + good	202 (80.2)	66 (64.7)	20 (76.9)
Satisfactory	42 (16.7)	27 (26.5)	3 (11.5)
Very poor + poor	8 (3.2)	9 (8.8)	3 (11.5)
Podiatrist			
Attendance			
Very good + good	198 (74.2)	61 (56.)	13 (39.4)
Satisfactory	60 (22.5)	32 (29.4)	13 (39.4)
Very poor + poor	9 (3.4)	16 (14.7)	7 (21.2)
Effectiveness			
Very good + good	200 (76.3)	59 (57.3)	17 (60.7)
Satisfactory	53 (20.2)	34 (33.0)	6 (21.4)
Very poor + poor	9 (3.4)	10 (9.7 (10)	5 (17.9)
Managers working hours			
Managers working more than 8 hours	130 (50.0)	64 (58.2)	24 (72.7)
Managers working 8 hours or less	130 (50.0)	46 (41.8)	9 (27.3)

Table F.9: Statistical Significant Data on RN Leadership

Item	Statistical Significance (Linear by Linear Association) (see Data in Table F.8)
Qu 9f Actual care difference to care plan	( $X^2=8.849$ , $df=1$ , $p=0.003$ )
Qu 12. Staff Turnover	( $X^2=11.487$ , $df=1$ , $p=0.001$ )
Qu 12. Staff Morale	( $X^2=21.703$ , $df=1$ , $p<0.001$ )
Qu 13. Staff Teamwork	( $X^2=26.584$ , $df=1$ , $p<0.001$ )
Qu 19 Skills and Knowledge	
Assessment skills	
Facility Manager	( $X^2=24.306$ , $df=1$ , $p<0.001$ )
RN	( $X^2=112.849$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=31.994$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=15.847$ , $df=1$ , $p<0.001$ )
Initiation of care	
Facility Manager	( $X^2=17.472$ , $df=1$ , $p<0.001$ )
RN	( $X^2=103.666$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=34.013$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=15.677$ , $df=1$ , $p<0.001$ )
Evaluation of care plans	
Facility Manager	( $X^2=8.364$ , $df=1$ , $p=0.004$ )
RN	( $X^2=124.292$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=21.315$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=16.848$ , $df=1$ , $p<0.001$ )
Documentation	
Facility Manager	( $X^2=24.989$ , $df=1$ , $p<0.001$ )
RN	( $X^2=132.787$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=31.962$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=23.495$ , $df=1$ , $p<0.001$ )
Leadership	
Facility Manager	( $X^2=43.628$ , $df=1$ , $p<0.001$ )
RN	N/A
Care Worker (Advanced)	( $X^2=75.338$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=52.605$ , $df=1$ , $p<0.001$ )
Advocacy	
Facility Manager	( $X^2=32.182$ , $df=1$ , $p<0.001$ )
RN	( $X^2=184.119$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=35.974$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=37.382$ , $df=1$ , $p<0.001$ )
Knowledge of clinical care for the elderly	
Facility Manager	( $X^2=16.615$ , $df=1$ , $p<0.001$ )
RN	( $X^2=121.946$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=39.358$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=16.654$ , $df=1$ , $p<0.001$ )
Knowledge of dementia	
Facility Manager	( $X^2=14.362$ , $df=1$ , $p<0.001$ )
RN	( $X^2=106.851$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=61.407$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=43.197$ , $df=1$ , $p<0.001$ )

Table F.9: Statistical Significant Data on RN Leadership (2 of 2 pages)

Item	Statistical Significance (Linear by Linear Association) (see Data in Table F.8)
Knowledge of incontinence	
Facility Manager	( $X^2=16.177$ , $df=1$ , $p<0.001$ )
RN	( $X^2=116.157$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=39.946$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=19.896$ , $df=1$ , $p<0.001$ )
Knowledge of palliative care	
Facility Manager	( $X^2=20.022$ , $df=1$ , $p<0.001$ )
RN	( $X^2=90.467$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=53.597$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=22.255$ , $df=1$ , $p<0.001$ )
Knowledge of pain management	
Facility Manager	( $X^2=19.708$ , $df=1$ , $p<0.001$ )
RN	( $X^2=103.224$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=50.634$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=32.246$ , $df=1$ , $p<0.001$ )
Management of aggressive clients	
Facility Manager	( $X^2=22.335$ , $df=1$ , $p<0.001$ )
RN	( $X^2=120.631$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=41.517$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=35.903$ , $df=1$ , $p<0.001$ )
Administration of medication	
Facility Manager	( $X^2=12.561$ , $df=1$ , $p<0.001$ )
RN	( $X^2=82.433$ , $df=1$ , $p<0.001$ )
Care Worker (Advanced)	( $X^2=28.030$ , $df=1$ , $p<0.001$ )
Care Worker	( $X^2=17.290$ , $df=1$ , $p<0.001$ )
Health Professionals	
Attendance	
Medical Practitioners	( $X^2=21.853$ , $df=1$ , $p<0.001$ )
Pharmacists	( $X^2=12.643$ , $df=1$ , $p<0.001$ )
Physiotherapists	( $X^2=4.858$ , $df=1$ , $p=0.28$ )
Podiatrists	( $X^2=31.422$ , $df=1$ , $p<0.001$ )
Effectiveness	
Medical Practitioners	( $X^2=24.746$ , $df=1$ , $p<0.001$ )
Pharmacists	( $X^2=19.193$ , $df=1$ , $p<0.001$ )
Physiotherapists	( $X^2=6.879$ , $df=1$ , $p=0.009$ )
Podiatrists	( $X^2=15.758$ , $df=1$ , $p<0.001$ )
Managers Working Day (Hours)	( $X^2=6.861$ , $df=1$ , $p=0.009$ )

## Appendix G: Case Manager Position Description

### Essential Criteria

- i. Qualified RN with current registration
- ii. Minimum of two years of quality improvement experience
- iii. Minimum of four years in gerontology
- iv. Advanced computer skills
- v. Strong knowledge of speciality and practice areas including topics such as: standards of practice, legislation, and evidenced skill to apply these in individualised situations as applicable.
- vi. Proven abilities in comprehensive client assessment and evaluation, including care planning
- vii. Effective verbal and written communication skills
- viii. Strong group and individual motivation skills,
- ix. Proven ability to work with teams,
- x. Strong organisational and leadership skills,
- xi. Flexible work practices,
- xii. Demonstrated capabilities as a critical thinker
- xiii. Proven strong conflict resolution skills
- xiv. Ability to inspire trust and confidence in others.
- xv. Strong client advocate skills,
- xvi. Ability to serve as a resource for team members,
- xvii. Proven able to identify cost saving opportunities,

### Recommended Criteria

- i. Experience and/or qualifications in staff and client education
- ii. Current driving licence

## **Appendix H: Candidate Conference Presentations**

### **Related to Doctorate Candidature**

#### *Abstracts Approved and Presented*

Brooke, N.J. (2006) Strategies That Make Case Management Effective, 9th Annual Case Management Society of Australia Conference, Melbourne, 2006.

Brooke, N.J. (2006) Case Management in Residential Aged Care Facilities, 9th Annual Case Management Society of Australia Conference, Melbourne, 2006.

Brooke, N.J. (2006) Case Management in Residential Aged Care Facilities - True Solutions, Better Practice 2006, Sydney, 2006.

Brooke, N.J. (2006) Case Management in Residential Aged Care Facilities - True Solutions, Better Practice 2006, Perth, 2006.

Brooke, N.J. (2007) Reality of Residential Aged Care in Australia, Better Practice 2007, Perth, 2007.

Brooke, N.J. (2008) Leadership, 13th Biennial National Nurse Educators Conference, Sydney, 2008

Brooke, N.J. (2009) Statistical evidence linking leadership and improved practice, National Australian Conference Evidenced-based Clinical Leadership, Adelaide, 2009

Brooke, N.J. (2009) Baby Steps will result in Giant Leaps, 12<sup>th</sup> National Case Management Conference, Melbourne, 2009

#### *Invited Speaker*

Brooke, N.J. (2006) Case Management - A True Solution, 6th Biennial International Dementia Conference, Sydney, 2006.

Brooke, N.J. (2008) Leadership to Drive Change, Better Practice 2008, Adelaide, 2008.

Brooke, N.J. (2008) Leadership to Drive Change, Better Practice 2008, Hobart, 2008.

Brooke, N.J. (2008) Leadership to Drive Change, Better Practice 2008, Sydney, 2008.

Brooke, N.J. (2008) Leadership to Drive Change, Better Practice 2008, Brisbane, 2008.

Brooke, N.J. (2008) Leadership to Drive Change, Better Practice 2008, Melbourne 2008

#### *Key Note Speaker*

Brooke, N.J. (2009) Transitional Care, Sydney, 2009.