Chapter 1

INTRODUCTION

PREFACE

Donabedian (1966) made the simple point that the definition of good quality care may be almost anything one wishes it to be. Mooney (2000) expressed similar views three decades later. In Phillips’ (1991) opinion, the definition of quality is operationalised depending on the values and goals current in the health care system. The present values and goals of residential aged care, which emerged from the Australian health care system in the middle of the 1990s, incorporate a variety of policies and philosophies. Principal among them is the National Strategy for an Ageing Australia characterised by an assortment of legislation and regulations including: the Aged Care Act (1997); the Standards for Residential Facilities (1997); and the Residential Care Guidelines (1998). In general they are designed to facilitate continuous improvement in residential services for all Australian seniors. However, this thesis is centred exclusively on care provided for highly needy individuals in nursing homes. Its purpose is to demonstrate that, while the Commonwealth Standards represent the level below which no service provider can fall while still retaining their subsidies for care, the most favourable levels of care for those with the highest levels of need are more likely to be assured with the use of indicators devised specifically for that reason.
In June 1987 the Commonwealth/State Working Party on Nursing Home Standards published a groundbreaking report entitled *Living in a Nursing Home: Outcome Standards for Australian Nursing Homes*. This heralded the beginning for monitoring the performance of Australian nursing homes, and the quality of the care they provided to their residents. Prior to this, inspectorial roles were concerned with inputs to service provision, rather than outcomes for residents. In 1993 a four-year evaluation of the outcome standards program was completed, and Braithwaite et al. (1993) reported on the positive contribution of these standards, and the concept of standards monitoring, to improving the quality of care in nursing homes.

The (newly elected) Commonwealth Government in 1996 announced a major restructuring of residential aged care. It proposed to amalgamate all levels of care into one system, with federal government benefits to be subject to a means test, and entry payments required of all potential residents, also subject to a means test. While many of these proposals were abandoned in subsequent years, the notions of standards of care, and strategies for monitoring care outcomes were not, and in 1997, the Commonwealth introduced a new policy direction. This incorporated five strategic positions with which the industry was obliged to comply by 1 January 2001, or cease to receive Commonwealth subsidies for the care it delivered.

The five reforms depicted in the Aged Care Act 1997 included a mandatory system of accreditation for care provided in nursing homes and hostels, and certification for all the buildings and grounds in which this care is delivered. In
addition, prudential arrangements were incorporated to protect resident bonds, concessional resident ratios were determined, and a protocol put into place to familiarise residents with their rights and responsibilities.

Notwithstanding the initial six areas of care and 31 outcomes which comprised the 1987 system, and the current four standards of care and 44 outcomes, a developmental fragment from the original review by Braithwaite et al. (1993) remains as pertinent today as it did seven years ago. The consultants commented that ‘the standards monitoring process could be made more valid by a more comprehensive data collection’ (Braithwaite et al. 1993:72). Both the existing standards, and those that preceded them, represented the lowest level of care a service could offer without incurring penalties of one form or another. *The Quality of Care for Nursing Home Residents’* project aspired to meet the challenge presented in 1993, to advance a system for delivering optimal clinical care suitable for application in all Australian nursing homes in the 21st century.

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**A SHORT HISTORY OF AUSTRALIAN NURSING HOME POLICY FROM THE MID 1950s TO THE MID 1990s**

The federal government’s initial incursion into aged care was the *Aged Persons Homes Act* 1954 which allocated a capital subsidy to approved not-for-profit (NFP) organisations, and provided self contained and hostel type accommodation for impoverished older Australians. Nursing home beds were included only as an incidental when existing residents care levels increased. In 1966 the capital subsidy was incorporated into nursing home beds as well,
subject only to limitations on the proportions of beds. This meant that nursing home beds developed by the voluntary sector would attract both capital and recurrent funding, and resulted in an increase in the proportion of nursing home beds approved under the Act. It had averaged 4% in the years prior to 1966 but, according to Gibson (1998), by 1980-81 it had risen to 55%. Eligibility to receive the recurrent funding was not limited to the NFP sector and the private for-profit (FP) segment if the industry also participated in this expansion.

In 1973 various strategies aimed at controlling growth in both sectors were implemented, including control over admissions, control over the growth rate of new beds, and controls over fees. Another policy change in 1974 again advantaged the voluntary sector. A new Act, the Nursing Homes Assistance Act 1974, provided an alternative method of financing not-for-profit homes via a subsidy equal to the home’s operating deficit. This resulted in the not unexpected outcome of a large (47%) increase in NFP nursing homes between 1975 and 1980, compared with a modest (7%) increase in the FP homes during the same period. In addition, the Aged Persons Homes Act of 1954 was retitled the Aged or Disabled Persons Homes Act, and extended its provisions to include handicapped adults of all ages.

There were three major investigations into nursing home services between 1980 and 1985. In 1980 the House of Representatives Standing Committee on Accommodation and Home Care for the Aged formed a sub-committee to determine the reasons for the continued dominance of institutional care for the elderly, and to establish a framework which allowed governments to make cost
effective decisions in provisions for care of the aged. The resulting McLeay Report was tabled in 1982. Further, in 1981 there was a Senate Select Committee inquiry into Private Hospitals and Nursing Homes, and in 1985 a Joint Committee of both parliamentary chambers reviewed nursing homes and hostels. Among its many outcomes was the introduction of short-term respite care in nursing homes, a service that had been introduced into hostels the preceding year. These mid 1980s changes were referred to as the Aged Care Reform Strategy, whose major objectives were the reform of both home based and residential care. In 1987 the implementation of appropriate assessment strategies to establish links between the various sectors was instigated. This took the form of Aged Care Advisory Committees that advised the Commonwealth Government on the ratio and distribution of new places in nursing homes and hostels. At that time the planning ratio comprised 100 residential care places per 1000 persons aged 70 years or over, distributed as 60 hostel beds to 40 nursing home beds.

During the same year (1987) the Nursing Homes and Hostels Legislation Amendment Bill introduced specific quality of care requirements and significant changes to funding arrangements. From 1 July 1987 nursing homes began a gradual transition to a uniform national funding level for infrastructure costs, known as the standard aggregated module (SAM). Deficit financing of homes was revoked from this date and the Outcomes Standards, developed by the Working Party on Nursing Home Standards, were also implemented.
Throughout this entire period, eligibility for entry into nursing homes had been determined by General Practitioners (GPs) and government medical officers (MOs), in collaboration with managerial teams in each sector of the industry. This resulted in a process that lacked both rigor and consistency. In 1985 a pilot system was developed whereby eligibility for entry into nursing homes was determined by a team of professional aged care practitioners known ultimately as the Aged Care Assessment Team. These teams included representatives from many of the disciplines associated with the provision of aged care including doctors, nurses, social workers, and therapists of various kinds. They were assembled according to the needs of individual seniors, taking into account location, demand and supply, and availability of practitioners. By 1987 national guidelines had been established, and while each state developed its own processes, in all cases eligibility was determined by the individual’s score on the NH5 form, a nationally consistent set of dependency items. The process was progressively expanded to include hostels in the 1990s.

In 1988 the health of older people was declared a priority area, under the Health For All Australians policy developed by the (then) Better Health Commission. Its emphasis was on the well aged, and introduced programs such as 60 and Better. However it also served to focus attention on those in residential care. During the following year the Commonwealth implemented new recurrent funding strategies, in-service training for nursing home staff, and established the Users Rights Advocacy Service. This was followed in 1990 by the Charter of Residents Rights and Responsibilities legislation.
The early 1990s were characterised by a series of investigations entitled *The Mid Term Review of Aged Care*. This Committee reported in 1991 and recommended a decrease in the proposed level of hostel funding, improvements in the respite care and dementia care areas, and enhanced integration of residential and community care planning. The following year (1992) saw the introduction of Community Aged Care Packages (CACPs) aimed at providing high intensity community based care to persons who might otherwise enter supported accommodation. The residential care planning ratio was reduced to 55 hostel places and 40 nursing home places per 1000 people aged 70 years and over, with five hostel places reallocated to the CACPs program. Furthermore, multi purpose centres were also trialed in rural areas and later expanded to allow provision of multiple service types from one location. The *Five Year National Action Plan for Dementia* also commenced in 1992. At the same time, state run nursing homes became eligible for Commonwealth subsidies, with the proviso that they meet national outcome standards and assign residents to dependency categories according to the criteria of the (then) Resident Classification Instrument.

In 1993 the Commonwealth revised their residential care planning ratios to 52.5 hostel places, 40 nursing home places and 7.5 CACPs per 1000 persons aged 70 years and over. The ratios were amended again in 1995 to 50 hostel places, 40 nursing home places and 10 CACPs. The Review of Nursing Home Funding Arrangements findings were published in two reports, the first in 1993 and the second in 1994. Finally, psycho-geriatric units were established for assessment purposes within the ACAT structure in 1994. The events that took
place following the change of government in 1996 were detailed earlier in the chapter.

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INDUSTRY COMPOSITION

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Mention was made earlier that there are three principal groups of aged care providers in the Australian industry: (i) the voluntary not-for-profit sector; (ii) the commercial for-profit sector; and (iii) homes run by the various states and territories. It was evident from the history of the industry that, in the past, Commonwealth government policy favoured nursing homes run by the voluntary sector, usually churches and charities. Subsidies for capital as well as recurrent nursing home costs were more frequently available to this group, and other ‘hidden’ support in the form of concessions for land taxes and similar benefits also applied. Hostels were funded under somewhat different conditions and, as Gibson (1998) demonstrated, the private for-profit sector had a greater presence in this facet of care provision. In addition, as Braithwaite et al. (1993) showed, the proportions of for-profit nursing homes compared with not-for-profit nursing homes vary between states and even within states. For example, there is a higher proportion of for-profit homes in south east Queensland than across the state as a whole. However, Queensland in general has a lower proportion of for-profit homes than, for example, New South Wales or Victoria. In terms of this thesis these differences were not of major importance. As chapters 3 and 5 indicate, the study sample was chosen at random taking proprietorship into account, and their response rate to the national survey was almost identical.
SUPPLY AND DEMAND

The original policy direction, which emerged as part of The Aged Care Reform Strategy, was to maintain the level of residential care provision at 100 beds per 1000 persons aged 70 years and over. Subsequent years saw a reduction in the planned level of provision so that by 1995 it was down to 90 beds, with actual levels of provision at 95 beds. With regard to nursing home places, there were 67 per 1000 in 1985, compared with 52 in 1994 and a target number of 40 (Gibson 1998:36). As noted above, resources conserved by reducing the level of residential care were redirected into community aged care packages.

This series of policy changes occurred at a time when the Australian population had begun to age (Rowland 1991:4). In 1950 approximately 6% of Australia’s population was 65 years or older compared with almost 12% in 1990. The proportion of those considered ‘old old’ (80 years and over) had also begun to increase. For example, between 1985 and 1994 the population aged 70 to 79 years increased by 26%, while those aged 80 years and over increased by 46% (Gibson 1998:28). This resulted in a substantially older aged population. Further, given the close relationship between age and handicap (AIHW 1993), it is a population more likely to require some form of aged care services.

Seniors with high dependency levels, defined by the Australian Bureau of Statistics as being ‘profound and severe’ (ABS 1993), comprise people who required assistance with personal care activities such as eating, bathing and
dressing. As Gibson (1998:53) noted, while only 15% of the 70-79 year olds report a high level of dependency, 45% of those aged 80 years and over do so. Furthermore, one in four 70-79 year olds in the highly dependent group lives in residential care, compared with one in every two highly dependent people 80 years or older.

Another issue to contemplate concerns the diminution in available informal carers in this older age group. Spouses, siblings and children who form the bulk of private care givers are also ageing at the same rate as their older relatives or friends. They are therefore less able to provide care, and more likely to be in need of care themselves. Ultimately, however, in all instances the rates of institutionalisation are higher among the very old, irrespective of whether the group under scrutiny is highly dependent or otherwise.

A further consequence of the policy changes, which resulted in a reduction in the number of available beds at the same time that the population itself was expanding, is that eligibility for entry criteria have become much more stringently applied. As noted earlier, in the years before the advent of ACATs and the NH5, all that was essential for admission into care was the advice of a local medical officer and a resident’s ability to meet their costs. This resulted in nursing home populations containing a proportion of individuals destined to live for a decade or more in care.

In the past 15 years nursing home populations have been characterised by residents with increasing frailty and in many instances multiple system
pathology (Gibson 1998). For the reasons noted above they are usually older than their counterparts a generation ago, and their usual length of stay in care calculated in weeks not years, let alone decades. The increased impairment of nursing home residents also had the ancillary effect of amplifying the level of intensity of work required of registered nurses and other bedside care providers (AIHW 1995).

QUALITY OF CARE FOR NURSING HOME RESIDENTS’ PROJECT

In Australia residential services for the aged are provided in a variety of settings including the community, serviced apartments, independent living units, hostels, nursing homes and long stay wards in district hospitals. Traditionally each of these services was designed for different groups of consumers. For example, those who reside in serviced apartments or independent living units are usually physically independent and cognitively intact, requiring only minimal levels of assistance with pursuits such as the maintenance of buildings and grounds. Individuals who utilise these services must meet the full cost of them privately because there is no government subsidy for services such as these.

Those who receive professional care in either community settings or hostels usually require support at a more personal level including assistance with the activities of daily living such as bathing, or food preparation. They may also require clinical care related to chronic illnesses such as rheumatism, or diminished cognitive function such as early Alzheimer’s disease. Access to
these services is conditional on the assessment of individuals as being in need by the Aged Care Assessment Teams, and the Commonwealth subsidises the care provider for their delivery. The level of subsidy varies with the financial resources of the care recipient and the degree of support required. For hostel residents the ACAT will make a preliminary recommendation on appropriate care level classification prior to or on admission. Ultimately it will be the subject of further reviews by both the care provider and the Department of Health and Aged Care, using the Resident Classification Scale (a comprehensive account of this process is provided in Chapter 6). The practice is similar for those who receive Community Aged Care Packages or related services, although the level of subsidy is lower as support for accommodation is met from other sources such as Rent Assistance.

The third and most intensive tier of aged care services is delivered in nursing homes. It is confined to those with substantial levels of need, almost always including a clinical component, and access to it is conditional on the assessment of the individual by an Aged Care Assessment Team. Levels of care, and the consequent subsidy are determined in a manner similar to those admitted into hostel accommodation. However, on admission nursing home residents almost always fall within the top four strata of the eight level Resident Classification Scale (RCS), compared with hostel residents who are more likely to fall in the second half of the RCS, at the time of their admission. Commonwealth subsidies for nursing home residents are usually higher than those for hostel residents, in recognition of their more concentrated need. However, any resident in a hostel who attains a Level 2 classification, for
example, as a result of the ageing-in-place philosophy that applies in some hostels, will receive the same amount of subsidy for care as a Level 2 nursing home resident.

The Australian Institute of Health and Welfare (1995:205) estimated that in 1993-1994 the Commonwealth Government spent $1704 million on all aspects of care provided in Australian nursing homes. A further $311.9 million was spent on hostels. In light of an expected increase in demand arising from the nation’s ageing population, coupled with anticipated claims for accountability by consumers, their families, and the taxpayers who contribute the bulk of these financial resources, the development of comprehensive and objective measures of quality of care has become a matter of high priority in the *National Strategy for an Ageing Australia*. This is evidenced most clearly in the recently introduced policy of industry accreditation. Commonwealth subsidies will cease for all facilities that have not met the majority of the 44 outcomes of the four aged care standards by 1 January 2001.

The issue extends beyond matters of finance, however. Health care professionals have a responsibility to provide high quality care in a manner that is timely as well as cost effective. Furthermore, in many cases Australia’s seniors have little choice about deciding whether or not to be consumers of aged care, due to their inability to care for themselves, or the inability of their loved ones to provide that care. Nor are they in a position to assess the quality of the care they receive in most instances. It is essential therefore that nursing
home facilities have processes and measures in place to ensure the best quality of care is provided in an aged care system under constant change.

It was noted previously that the standards constructed by the Commonwealth represent the minimum level below which a service may not fall without incurring penalties. The aim of the *Quality of Care for Nursing Home Residents*’ project was to develop a series of standards to provide optimal levels of clinical care for those with the highest levels of need. This group was chosen because of their reduced ability to overcome the challenges of less than optimal care, due to their physical and possibly intellectual frailty. In addition, because the cost of their care is higher there is a greater need to ensure that the funding bodies receive the appropriate return for their investment.

As a result, the project focused exclusively on care provided in nursing homes and long stay hospital wards, where the vast majority of those with Resident Classification Scale (RCS) levels 1 to 4 are accommodated. They represent residents in need of significant levels of assistance for many aspects of their lives including clinical care, help with the activities of daily living, and support to achieve a sense of social well-being. It is recognised that some hostels also provide care at this level of intensity. However the logistics of locating them, ensuring that none had been missed if a representative sample was to be constructed, and isolating the small proportion of their residents with this category of need represented a major undertaking. It was decided therefore to concentrate the project in nursing homes and long stay hospital wards, where
the majority of high level residents are located, and where the greatest benefit would be achieved for the energy expended.

THE RESEARCH QUESTION

As the Commonwealth Standards demonstrate, there are multiple aspects to the provision of residential aged care. These may address clinical, personal, and/or environmental features of the service provided, all care recipients, all staff, and any other interested parties, just to nominate the obvious ones. If a model of optimal care incorporated all possible facets, the number could be almost infinite and, therefore, totally unmanageable for those attempting to apply it. Furthermore, fundamental to the development of any tool is the ability to measure the criteria by which it is assessed. Therefore any markers used needed to be quantifiable. As a consequence it was decided to concentrate the study on one aspect of aged care services, the delivery of clinical care. It is relatively straightforward to measure the clinical features of care, for example, the numbers of residents with pressure ulcers. Further, as mentioned previously, residents with the highest levels of need are frequently the subject of decrements in more than one physiological system and they are, therefore, the group most likely to require clinical support, in addition to encouragement for other aspects of their lives such as assistance with the activities of daily living.

Cape and Dobson (1980:75) defined ‘clinical’ as ‘relating to bedside observation and treatment of patients’. While their focus was that of providing
hospital based care, by substituting the word ‘resident’ for that of ‘patient’ the
definition is equally apt for clinical care in nursing homes. Further, the broad
nature of the definition encompassed all aspects of bedside services. This
enabled the Quality of Care for Nursing Home Residents’ project to adopt the
widest possible approach, while retaining the original qualification that any
indicators developed had to be quantifiable. In addition, because the tool
planned for development would be designed for application in all nursing
homes across the country, the project required the adoption of a quantitative
research methodology, to ensure that its findings could be replicable in all
states and territories. Hence the question to be investigated had to be couched
in terms appropriate to a quantitative study.

RESEARCH HYPOTHESIS

The Quality of Care for Nursing Home Residents’ project proposed to answer
the following question:

\[ \text{It is hypothesised that the quality of care for residents in} \]
\[ \text{Australian nursing homes will be improved by the application} \]
\[ \text{of standards designed specifically for residents with high level} \]
\[ \text{care needs.} \]

The study aimed to achieve the answer by:

- Developing clinical indicators and comprehensive measures to identify,
  measure, and monitor quality care.
- Piloting the measures and indicators in practical settings, and then evaluating them, prior to their formal introduction to the national industry.

- Creating a quality assessment tool incorporating the indicators and measures for use by all members in the industry, irrespective of their location, structure, or size.

Chapter 3 details the methods and strategies used to answer this question, and chapters 4, 5 and 7 detail the results.

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**SYNOPSIS**

While reviewing services provided by Australian nursing homes during an earlier period, Braithwaite et al. (1993) noted that standards monitoring would be enhanced by the collection of data on a more comprehensive scale. Notwithstanding that it has taken seven years to respond to this suggestion, the *Quality of Care for Nursing Home Residents*’ project accepted the challenge and undertook a three year project to determine what data should be collected, and how frequently they should be monitored, to deliver optimal clinical care to the nation’s seniors with high levels of need who live in nursing homes. This resulted in the Australian Quality Matrix, applicable to every nursing home and each individual resident throughout the country.
Eighteen clinical indicators, defined according to resident classification scale criteria, were identified. Further, in compliance with current regulatory requirements, these are being monitored and measured already every eight weeks in nursing homes throughout the country, for different purposes. The draft indicators were trialed and evaluated to test their validity and reliability in practice, and modified in light of this experience. Succeeding chapters in this thesis explain the principles that guided this project and the processes it undertook to accomplish its objectives.

Chapter 2 highlights current international practice in this area and Chapter 3 details the methodological approaches adopted for each of the three phases of the project. The results of Phase 1, which utilised qualitative methods to conduct nine case studies in four states, are described in Chapter 4. Phase 2 adopted a quantitative approach using a cross-sectional study to conduct a nation-wide postal survey, the outcomes of which are documented in Chapter 5.

Phases 1 and 2 provided the baseline information and statistics about current practices and procedures in use in the contemporary industry. Chapter 6 describes the development of the draft Australian Quality Matrix using the unstructured data assembled in the first two phases of the project. Phase 3 of the project comprised the trial and evaluation of the draft matrix. The outcomes of this phase are discussed in Chapter 7. A series of recommendations are made concerning the matrix and its potential to improve the quality of care for
residents with high levels needs and are outlined in Chapter 8, which concludes the thesis.
Chapter 2

LITERATURE REVIEW

PREFACE

In 1997, the Aged Care Act was introduced into Federal Parliament to spearhead reform in the Australian industry. From the perspective of the Commonwealth Government, it was designed to facilitate an improvement in the quality of residential services for older Australians by ensuring an increased standard of care, and enhanced quality of facilities. As Chapter 1 noted, the reforms included inter alia a mandatory system of accreditation for care provided in nursing homes and hostels, and certification for the buildings and grounds in which this care is delivered. Accreditation established the Commonwealth’s baseline standards of quality for clinical and all other aspects of residential care. Each one of the nation’s 3800 residential aged care facilities must have completed the process by 1 January 2001, or their access to subsidies from the Commonwealth Government will cease. Due to their pivotal role in the structure of this study, the aged care standards are detailed later in the chapter, and in Appendix 1.

The Aged Care Standards and Accreditation Agency was launched in 1998 to administer the accreditation process, and is governed by a series of ‘Principles’ signed by the Minister for Aged Care in October 1999. These actions have
taken the industry from a condition of imposed state control, to one of self-
assessment and self-improvement, administered by the industry itself, and
supervised by the Commonwealth. Accreditation is an ongoing requirement of
all industry participants. When it is awarded, the period of its duration is
specified, and may extend to a maximum of three years. That is, homes will be
obliged to resubmit themselves for accreditation on a regular basis, and
therefore compliance with this framework or its successors, will be a
continuing obligation on the industry.

This chapter will provide an account of the policy and literature that influenced
the design and methodological context of this study and its ultimate outcome,
the Australian Quality Matrix. The literature reviewed here include those
which informed the study framework, the principles of continuous quality
improvement as they apply in Australian aged care, other techniques for quality
in residential aged care, and existing tools for determining quality in residential
services. An account is also given of specific clinical indicators to measure
quality investigated and reported by other researchers during the past decade.
Additional factors thought to influence the quality of care provided in nursing
homes, such as the effect of proprieto-ship, the role of staff, and notions of
resident satisfaction are also reviewed.

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STUDY FRAMEWORK

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The Quality of Care for Nursing Home Residents’ project aimed to produce a
matrix of indicators to achieve international best practice clinical care for
residents with high care needs in Australian nursing homes. It was constructed around the framework of the new Commonwealth accreditation standards for two reasons. First, the use of a nationally validated and universally applied instrument increased its reliability. Second, in the years preceding 1 January 2001, the entire aged care industry in Australia had expended considerable money, time, and personnel to comply with the prescribed conditions. The outcome of any project that did not take full account of these mandatory requirements would have been unlikely to receive industry acceptance. Because of their pre-eminent position in the structure of the study from its inception, the accreditation standards are detailed comprehensively below and summarised in Appendix 1. They identify four spheres of care of particular importance to the Commonwealth. As a consequence, these care domains formed the backbone of the *Quality of Care for Nursing Home Residents*’ project.

As the study evolved other Commonwealth literature also influenced its structure. In defining the Australian Quality Matrix (AQM) of clinical care, Resident Classification Scale (1998) criteria were utilised either on their own, or in tandem with other established markers, to measure or describe the newly determined indicators. The relevant RCS items are described in Chapter 6 in the account of the AQM development and in full in Appendix 8.

**COMMONWEALTH AGED CARE STANDARDS**
The Commonwealth standards (1997) address four areas of interest and between them encompass 44 outcomes:
i. management systems, staffing and organisational development;

ii. [resident] health and personal care;

iii. resident lifestyle; and

iv. the physical environment and safe systems.

The first outcome of each standard (Standards 1.1, 2.1, 3.1, and 4.1) states that:

The organisation actively pursues continuous improvement.

Two other characteristics are common to all four standards: regulatory compliance, and education and staff development (Standards 1.2, 2.2, 3.2, and 4.2 and Standards 1.3, 2.3, 3.3, and 4.3 respectively). The expected outcomes for these two measures are as follows, and apply across all four standards:

(Outcomes 1.2, 2.2, 3.2 & 4.2)

The organisation’s management has systems in place to identify and ensure compliance with all relevant legislation, regulatory requirements, professional standards and guidelines.

(Outcomes 1.3, 2.3, 3.3, & 4.3)

Management and staff have appropriate knowledge and skills to perform their roles effectively.

Other outcomes in Standard 1 address: comments and complaints (1.4), planning and leadership (1.5), human resource management (1.6), inventory and equipment (1.7), information systems (1.8) and external services (1.9). In addition to those outcomes listed above, Standard 2 also focuses on: clinical care (2.4), specialised nursing care needs (2.5), and other health and related services (2.6). Outcome 2.7 considers medication management, 2.8 explores
pain management, and 2.9 investigates palliative care. The remaining seven outcomes in Standard 2 look at the activities of daily living which include: nutrition and hydration (2.10), skin care (2.11), continence management (2.12), behavioural management (2.13), mobility, dexterity, and rehabilitation (2.14), oral and dental care (2.15), sensory loss (2.16) and sleep (2.17). Standard 3 considers resident lifestyle and investigates the emotional support provided to residents (3.4), resident independence (3.5), privacy and dignity (3.6), leisure interests and activities (3.7), cultural and spiritual life (3.8), choice and decision-making (3.9) and resident security of tenure and responsibilities (3.10). The remaining outcomes of Standard 4 address the living environment (4.4), occupational health and safety (4.5), fire, security and other emergencies (4.6), infection control (4.7), and catering, cleaning and laundry services (4.8).

CONTINUOUS QUALITY IMPROVEMENT

The importance that the Commonwealth places on the notion of continuous improvement is evident in its location as the premier outcome for each of the standards. The Standards and Accreditation Agency (hereafter called the Agency), established in 1998 to accomplish accreditation in the aged care industry, proposed that there are two models of continuous improvement, each based on the five-stage cycle illustrated in Figure 2.1.
As determined by the Agency (1998), monitoring comprises the systematic collection of data by observation and recording, and assessment is a process of review to determine problems, recognise opportunities for improvements and demonstrate that facility practice is reaching planned standards. Action involves the activities necessary to rectify a problem or improve care, and may include education, reallocation of resources, changes in policies or procedures and administrative changes. Follow-up ensures that any action taken has actually improved the care and services being monitored. Finally, feedback consists of an account of the results achieved and may take the form of meetings, newsletters, memos and other communication tools.

AUSTRALIAN MODELS OF CONTINUOUS IMPROVEMENT

The first model acknowledged by the Agency is associated with the rectification of non-compliance with one or more of the standards. Where standards are not being met, as determined through self-assessment, report analysis, complaints received or other indicators, a priority action work plan must be developed to fix them. Self-assessment is repeated to ensure the effectiveness of any initiatives, and feedback instituted to the concerned
parties. The corrective action only returns the facility to baseline standards, as Figure 2.2 illustrates.

**Figure 2.2: Continuous Improvement Model 1**
(Adapted from ACS&AA ETRS Auditor Training Handbook, 1999:4.22)

Model 2 attempts to take the facility from the baseline to best practice and is illustrated in Figure 2.3.

**Figure 2.3 Continuous Improvement Model**
(Adapted from ACS&AA ETRS Auditor Training Handbook, 1999:4.23)
While acknowledging universal principles, from the Agency’s perspective, the notion of what comprises ‘best practice’ is specific to each facility, and involves the determination of what is optimal for each standard under particular circumstances. The attributes which comprise best practice are determined by research, review of information attained, and consultation with experts, staff, residents and relatives. In the light of these findings proposed actions are recorded on a priority action plan, implemented and/or modified, and the continuous improvement cycle repeated.

BEST PRACTICE

When grading facilities, the Agency must award one of four levels of achievement for each of the 44 outcomes in the four standards. The facility may be deemed to achieve a commendable performance, a satisfactory one, an unacceptable result or one that puts the resident’s well-being ‘at risk’ (which may result in immediate Commonwealth intervention to avert potential danger).

The Agency’s notion of best practice, as detailed in its Documentation and Accountability Manual (1998), incorporates the concepts of innovation and creativity. They comprise the criteria by which the rank of ‘commendable’ is determined, and are described as the ‘breaking of new ground’ (1998:4.27) by individual facilities, in the services and/or care they provide. As with the second model of continuous improvement, the accomplishment of a commendable grade involves the active seeking of input from all stakeholders.
to generate new ideas and practices, and their development, trial, implementation and evaluation.

The exact nature of what is ‘creative or innovative’ will vary from home to home and circumstance to circumstance. For example, the provision of a suite of rooms dedicated for the use of palliative care may be commonplace among homes that belong to an extended network, under the proprietorship of a major institution such as a church. As such, the outcome dedicated to palliative care may achieve only a ‘satisfactory’ rating despite the tranquillity of the setting and the calibre of the services provided. However, the allocation of a single room or even a section of a room exclusively for this purpose, in a small rural facility, run by a community committee, may been seen by the auditors as a ‘creative and innovative’ solution to ensure optimal care of the dying and bereaved. As a consequence, the facility may be awarded a ‘commendable’ grade under that set of circumstances.

OTHER TECHNIQUES FOR QUALITY IN RESIDENTIAL AGED CARE

It has been suggested that the Commonwealth Government and its various instrumentalities, such as the Standards Agency and the Department of Health and Aged Care, focus on the role of continuous quality improvement (CQI), as the means of ensuring that residential aged care facilities comply with existing standards. They also utilise CQI to achieve international best practice. Researchers have investigated two other approaches during the past decade and
a half for the same purpose, quality assurance and total quality management, and an example of each application is given below.

Zinn et al. (1998) examined the contextual attributes that influenced the adoption of Total Quality Management (TQM) by nursing homes in Pennsylvania during 1995. Features of this system include the application of quality assurance principles to every aspect of the service. Perceived competition and the influences of the Medicare program, both at the facility and the market level, are associated with TQM adoption in residential aged care. However, other factors associated with TQM adoption in other sectors of the economy, such as size, were not influential in its adoption by the aged care industry.

Kane (1988) outlined a stance toward nursing home quality assurance (QA) that would both generate an information system for a facility to review its performance compared to external regulations, and also allow a proactive stance on the part of nursing home staff. He highlighted three necessary components of quality assurance: defining quality and developing criteria, assessing quality, and correcting deficiencies. He argued that a prompt and clear feedback system to personnel is one key to a proactive quality assurance system, which becomes self-improving. An active feedback system is also a major feature of the continuous improvement model outlined above.

An examination of the report by Mohide et al. (1988) is illuminating as it illustrates the importance of quality assurance in nursing homes. Sixty nursing
homes were randomly allocated to receive or not receive a quality assurance intervention. The experimental intervention included the use of pre-developed quality assurance packages, the services of a quality assurance consultant, and the process of working through the quality assurance cycle with one of two indicator conditions. Two prevalent health problems, hazardous mobility and constipation, were selected as the principal indicator conditions. To detect co-intervention, one of two hidden secondary indicator conditions (skin breakdown and urinary incontinence) was also assessed in each facility. In the control homes, both the principal and secondary indicator conditions were hidden from the staff.

The care of 1525 residents was examined before and after the intervention using a retrospective record review initiated for the study. Improvement in the management of the principal conditions (hazardous mobility and constipation) was greater in the experimental group ($p<0.03$ and $p<0.005$) respectively, than in the controls, and it was concluded that behaviour change had been achieved using quality assurance interventions. Interestingly, neither group modified its management of the hidden indicator conditions (skin breakdown and urinary incontinence), despite the interventions.

EXISTING TOOLS FOR INDICATING QUALITY IN RESIDENTIAL CARE

Examination of quality in the provision of health care commenced as early as 1966, with the Donabedian model, using structure, process and outcome as a framework for measuring the results of care. During the past decade a variety
of scholars in locations outside Australia have addressed the issue of indicators of quality specifically in residential aged care. These have included North Americans such as Phillips (1991), Zimmerman et al. (1995, 1999), Fitzgerald et al. (1996) Anderson et al. (1998), Bravo et al. (1999 a & b), Brunton and Rook (1999) and several researchers at the Center for Health Systems Research and Analysis at the University of Wisconsin (CHSRA, 2000). The issue has preoccupied fewer Europeans, although Carpenter et al (1999), Bartlet and Burnip (1998), and Schneider et al. (1998) have considered the matter.

The study of specific clinical indicators, such as decubiti and poly pharmacy, has proved to be far more popular, and they are addressed later in this chapter. However, as Chapter 1 argued, and Chapter 3 explains more fully, the aim of the Quality of Care for Nursing Home Residents’ project was to develop a matrix or model that encompassed an entire service, and could be applied to all services within a national population. While specific conditions are important, the development of a tool that covers all aspects of care is the focus of this study.

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STUDIES OF QUALITY INDICATORS CONDUCTED IN NORTH AMERICA

RHODE ISLAND

Phillips (1991) chose key indicators of quality that were considered target areas for improving quality of care by the Rhode Island State Department of Health, following a Patient Care and Services Survey (PCSS). They were outcome oriented and resident focused, in line with the prevailing views (which she
termed population norms) about quality assurance in long term care. This philosophical approach is equally important in 21st century Australia, as the Aged Care Standards Principles (1999) demonstrate.

Indicators chosen by Phillips (1991) comprised: the prevalence of contractures, in-house acquired decubiti, use of restraints, lack of participation in activities programs, and naso-gastric tube feeding. These were selected because they were considered the most suitable variables in the PCSS for exploration, utilising the population norm method of assessing quality of care. For example, contractures and decubiti are relevant to physically dependent residents, and activities are relevant to all but the most physically dependent individuals, as Hopman-Rock et al. (1999) indicate. Naso-gastric tube feeding was chosen because it represented a marker of greater than usual care needs among residents, indicating the possible need for a special investigation of quality in relevant areas, rather than as an indicator of poor quality of care in parenteral nutrition.

The technique developed by Phillips (1991) encompassed the following strategies. First, the prevalence of the key indicators was measured in the general population of nursing home residents. Second, to decide whether a particular home had a higher than expected prevalence of each key indicator, the population prevalence or norm was used as a weight to adjust to the prevalence expected in the home, according to the case mix and number of residents. Finally, the expected prevalence was compared with the prevalence observed in the home by Rhode Island Health Department surveyors. A higher
prevalence of negative outcomes in individual homes, than in the population as whole, could then be used as a marker for further investigation of the quality of care in any individual home.

To convert the population prevalence into an expected prevalence of each indicator for individual nursing homes, they were adjusted according to the number of residents and the case mix in each home. Adjustment to the case mix found in a particular nursing home was necessary because variables such as functional dependency, the length of stay, and demographic characteristics such as age, gender and marital status, might also be related to the likelihood of developing a particular outcome, in Phillips’ view (1991). Adjustment for the case mix takes into account differences in the resident characteristics between nursing homes.

MISSISSIPPI

Fitzgerald et al. (1996) applied a different set of performance measures to long-term care. In an account of the Quality Indicator Index and Education project (QUIIX-Ed) conducted in nine nursing facilities in Mississippi, providers identified the need to collect and compare consistent performance measures within a peer group, as part of its continuous quality improvement strategy. QUIIX-Ed assessed the impact of quality indicator information in nursing facilities, based on the Minimum Data Set (MDS) resident assessment, a tool also used by the Center for Health Systems Research and Analysis (CHSRA). Comparison reports allow each facility to profile its performance against those of other providers in the scheme. The project did not standardise the quality
improvement process. Rather, the focus was on the incorporation of information into existing nursing care and quality improvement practices. Each month the facilities updated their quality indicator scores, and exported these scores to a central data base that aggregated them to generate benchmarking statistics for each facility, including project medians, percentiles, and facility performance rankings. These measures were readily incorporated into existing nursing practices and facility improvement techniques, regardless of the extent to which a quality improvement process had been developed.

Two peer groups generated benchmarking statistics in the Mississippi project: the nine facilities participating in QUIIX-Ed, and all other Mississippi nursing facilities. QUIIX-Ed facilities were diverse in size, location, ownership and participation in government funding programs, which was an important asset in evaluating the utility of the performance measures in different long-term settings. The QUIIX-Ed peer group tracked performance in their specific study, while the state-wide peer group provided a more statistically valid basis for generating standards.

The quality measures, based on MDS information, and field tested by Zimmerman et al. (1995), were grouped into 12 care domains. These comprised: accidents, behavioural and emotional patterns, clinical management, cognitive functioning, elimination and continence, infection control, nutrition and eating, physical functioning, psychotropic drug use, quality of life, sensory function and communication, and skin care.
The QUIIX-Ed nursing homes reviewed the prevalent performance measures and ranked them according to their utility for continuous quality improvement (CQI). These rankings formed the basis of a list of 15 indicators. They were identified as follows: prevalence of any injury, prevalence of falls, prevalence of depression without treatment, prevalence of faecal impaction, prevalence of urinary tract infections, prevalence of weight loss, prevalence of tube feeding, prevalence of bed fast residents, lack of range of motion training for the impaired, anti-psychotics use – high risk, anti-psychotics use – low risk, anti-anxiety/hypnotic use, daily physical restraints, pressure ulcers – high risk, and pressure ulcers – low risk.

Although the quality measures used in QUIIX-Ed address clinical and functional care outcomes, Fitzgerald et al (1996) comment that the data source is limited in terms of quality-of-life measures, and they recommend customer satisfaction questionnaires to complement the measures. They also incorporated a strategy to adjust for risk, which ensures that comparisons across facilities and over time are meaningful. Furthermore, to make certain that the quality measure has captured any changes in resident status the maximum time between reassessments should be not more than 90 days, although quality measures may reflect improvements in less time.

The quality indicators in QUIIX-Ed appear to help raise questions about care outcomes. For example, a low ranking on a performance measure usually triggered a reappraisal of the care area being measured. It is less clear, however, whether the indicators identified the cause of poor performance or
even accurately identified the performance levels, or which areas were improvement priorities. Nevertheless, QUIIX-Ed showed that quality indicators are an effective means of initiating CQI in nursing homes.

**TEXAS**

Anderson et al. (1998) identified patterns of resource allocation that related to resident outcomes in nursing homes. Data on structure, staffing levels, salaries, costs, case mix and resident outcomes were obtained from state level administrative data bases on 495 Texas nursing homes. They identified two sets of comparison groups, and showed that the group of homes with the greatest percentage of improvements in resident outcomes had higher levels of registered nurse (RN) staffing, and higher costs. Further, when controlling for RN staffing, resident outcomes in high and low cost homes did not differ.

As with Phillips (1991), Anderson et al. (1998) note that much of the research on care quality or outcomes in nursing homes relied on Donabedian’s (1966) conceptualisation of structure, process and outcome. Aaronson et al. (1994) and Braun (1991) also note the importance of this antecedent. However, Anderson et al. (1998) recognised Donabedian’s later (1988) approach wherein structure encompasses the characteristics of the setting in which care occurs. In the Anderson et al. (1998) study, structure variables included nursing home size, ownership status, occupancy rates and payer mix. For Donabedian (1988), process encompassed the activities used by providers in delivering care, whereas for Anderson et al. (1998) it included resource allocation decisions, as indicated by the distribution of staff time, staff mix, and money for resident
care. Donabedian (1988) described outcomes as the effects of care on health status, whereas in the Texas study, outcomes included the percentages of residents displaying aggression, wearing restraints, or suffering contractures, decubitus ulcers, dehydration, urinary tract infections or fractures within the preceding three months.

Configurational theory, used in many areas of organisational research according to Meyer et al. (1993), was adopted by Anderson et al. (1998) to guide detection of patterns in structure, resource allocation and outcomes. The configurational approach informed the classification of nursing homes into groups by synthesising 11 interdependent resident outcome indicators. As noted above, past research on resident outcomes in nursing homes included those in which investigators controlled for case mix, and used appropriate samples, methods and interpretations. In their model Anderson et al. (1998) recognise four categories of indicators: (a) general indicators, (b) quality of life, (c) physical health, and (d) indirect indicators.

General indicators of resident outcomes such as death rates, appropriate in the acute setting, may not be as useful in nursing home research. Death is often an expected outcome for nursing home residents. In addition, it is not always possible to determine whether the death arose as a consequence of poor quality care, or because of clinical conditions that are not amenable to treatment. In the American setting, indirect indicators of nursing home quality included the number of deficiencies at annual survey, as reported by the Health Care
Financing Administration (HCFA), and the availability of direct resident care resources.

Quality of life indicators included functional ability, aggressive or disruptive behaviour and the use of physical restraints. In the opinion of Anderson et al. (1998:299) ‘perhaps the strongest indicator of the quality of life is the use of restraints’. Restraint results in the restriction of movement, discomfort, and the loss of liberty.

Health status was not measured directly by Anderson et al. (1998) because it is less likely to identify specific areas of care which may warrant further investigation. Instead they targeted resident conditions that suggest quality problems in nursing care, such as the percentage of residents with decubitus ulcers, catheters, urinary tract infections (UTIs) and the rate of antibiotic use. In the view of the authors, quality of life and physical health indicators relate better to resident conditions and are better indicators of resident outcomes because they focus on particular areas of care provision.

Configurational theory suggests that single variable measures rarely capture the complexity that exists in managing organisations (Meyer at al. 1993), such as nursing homes. Furthermore, no single resident outcome sufficiently accounts for the overall quality of care in nursing homes, and no single indicator can account for the variety of ways that managers allocate resources. In the Anderson et al. (1998) study, 11 items from Form 3652-A, the Texas Department of Human Services Client Assessment, Review, and Evaluation
Form, were selected because they reflected care outcomes (Zimmerman et al. 1995).

Groups of measures improve statistical validity of measurement over individual measures (Tarr 1995). To create a summary variable of resident outcomes in each nursing home, the criterion developed by Zimmerman et al. (1995:112), ‘the percentile rank of the nursing home in relation to its peers’, was adopted by the Texas researchers to develop a score that indicated a nursing home’s position within the sample. This strategy enabled consideration of multiple performance indicators in identifying a nursing home’s position on a particular dimension of performance. Anderson et al. (1998) referred to these scores as ‘pattern scores’.

In the Texas study, resident outcomes were defined as the results of nursing care as experienced by the residents within each home. Eleven items from Form 3652-A were selected because they reflected the quality of nursing care (Anderson et al. 1998). A nursing home score for each item was calculated to indicate the percentage of residents in the home for whom the condition was present within the preceding three months. In high quality homes the prevalence of these 11 indicators should be lower.

Case mix is the aggregate patient profile including functional and health status (Zimmerman et al. 1995). Individual residents have certain characteristics, such as functional ability and clinical conditions, which predispose them to adverse outcomes, despite the type of clinical interventions applied. Comparing
resident outcomes, without controlling for these risk factors, is like comparing apples to oranges. For example, a resident with end stage disease is likely to have multi system failures, which predisposes him or her to weaknesses such a poor circulation leading to pressure ulcer development. They are therefore more susceptible to these conditions than a new resident who is mobile and independent. The two are not comparable despite both being residents in nursing homes in need of high levels of care, and the outcome measures are likely to be skewed as a consequence.

In the opinion of several scholars, such as Berlowitz et al. (1996) and Zimmerman et al. (1995), comparison of outcomes between residents or groups of residents is only valid when variation due to resident characteristics is controlled. Thus, in the American setting, adjusting for case mix makes it possible to compare one nursing home to another, and to compare one nursing home with itself across two time periods, even though different residents may be in the home during the different events (Stineman 1997).

To ensure that resident outcomes were comparable across nursing homes and times, the effect of resident case mix on the outcome indicators was removed by Anderson et al. (1998), using a strategy developed by Zinn et al. (1993). For each of the 11 outcomes, the case mix indicators explained a portion of the variance. The findings indicate that commonly studied structural variables, such as nursing home size, do not vary with differences in resident outcomes. Ultimately the Texas study demonstrated that achieving improvements in resident outcomes required RN staffing and hence greater expenditure.
QUEBEC

Bravo et al. (1999a) examined quality of care in 52 unlicensed and 36 licensed homes for the aged in the eastern townships of Quebec. Quality of care was measured using the QUALCARE scale, a multidimensional instrument that uses a five point scale to assess six dimensions of care: environmental, physical, medical management, psychosocial, human rights and financial. A mean score of more than two was considered indicative of inadequate care.

Overall, the quality of care was similar in the unlicensed and licensed facilities. Examination of dimension-specific scores revealed that the unlicensed homes did not perform as well as the licensed homes in two areas of care: physical care and medical management. The dimension-specific scores also revealed that both types of homes lacked appropriate attention to the psychosocial aspect of care. Overall, 25% of the facilities provided inadequate care to at least one resident, and this situation was especially prevalent among homes with fewer than 40 residents, where up to 20% of residents received inadequate care.

Utilising the same sample of 88 facilities, Bravo et al. (1999b) also studied the effects of both resident and facility characteristics on quality of care on 301 residents. Results revealed that the presence of cognitive deficits was the strongest correlate of the quality of care provided to a resident. Four facility level variables were found to influence the relationship between cognitive functioning and care quality: the number of external collaborators the facility
has, the type of training the facility manager had, the size of the facility, and the age distribution of its clientele.

Brunton and Rook (1999) report on the implementation of the resident assessment instrument as it applied in Canada. It too depended on the minimum data set mentioned above and described below. The primary tool was not adapted in this study, but its introduction to multi-disciplinary staff is described and its integration into the clinical plan of care for residents detailed.

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**STUDIES OF QUALITY INDICATORS CONDUCTED IN EUROPE**

Carpenter et al. (1999) undertook a five-nation study targeting quality of nursing home care. This cross sectional study also used the Minimum Data Set assessments of nursing homes in six US states, Copenhagen, Reykjavik, and selected locations in Italy and Japan. The outcome measures were life expectancy at age 65, population over 65, percentage over 65 in nursing homes, and clinical characteristics of nursing home residents, drawn from a multinational database of resident assessment instrument and minimum data set (RAI/MDS) assessments.

There was wide variation in markers of quality of care, with no country either uniformly good or bad across multiple measures. A nation’s percentage of Gross Domestic Product spent on health care was found to bear no relationship to outcomes, nor was the percentage of those aged over 65 in nursing homes an
indicator. However, local policy and practice were found to affect quality of care.

While not directly related to indicators of care on a daily basis, other findings held indirect implications for long term planning and policy. Japan had the highest life expectancy, and the second lowest expenditure on health care. The United States had the highest expenditure on health care and intermediate life expectancy. Italy had the highest proportion of population over 65, and the lowest proportion of those aged over 65 in nursing homes. Iceland, a relatively young country, had the highest proportion of those aged over 65 in nursing homes. Residents in Italy and the United States had the most severe physical, cognitive and clinical characteristics, while those in Iceland had the least.

Barlett and Burnip (1998) examined the quality of care in nursing homes for older people in the United Kingdom. In particular they considered the role of provider perspectives and priorities. Using a Delphi study of 196 clinical nurse managers, the findings identified markers such as increasingly dependent residents of advanced age, which now comprise the majority of residential facility populations. The range of physical and psychosocial indicators mentioned above was also found to be important in Great Britain. Funding constraints, recruitment and retention of staff, and education and training were other priority issues believed by UK nurse managers to influence the quality of the care they could deliver.
Schneider et al. (1998) investigated quality of care measures in residential care homes funded by the National Health Fund (NHF). They concluded that, when costing residential care, no association could be demonstrated between cost and quality. However, higher costs were associated with short-term care provision.

**SEMINAL STUDIES 1996-2000**

One body of research, more than any other, was pivotal to the development of the Australian Quality Matrix. It originated in North America, but has implications for scholars in the field throughout the world. It was that undertaken by a variety of investigators at the Center for Health Systems Research and Analysis (CHSRA) in the University of Wisconsin (chsra.wisc.edu, 2000). Early in 1996, the nursing home industry and CHSRA began a co-operative effort to improve the quality of care in nursing facilities with the use of quality indicators. Quality indicators developed by CHSRA researchers are markers that suggest either the presence or absence of potentially poor nursing facility practices or outcomes. They comprise a systematic attempt to record longitudinally the clinical and psychosocial profiles of nursing home residents in a standardised and relatively inexpensive manner, requiring only the expertise of in-house staff.

The Minimum Data Set Quality Indicators (MDS QI) were developed by CHSRA as part of a Multi-State Nursing Home Case Mix and Quality demonstration. They are based entirely on information from the MDS, which is part of the Resident Assessment Instrument (RAI), a review process mandated
for use with all nursing home residents in the United States of America. The MDS QIs were developed through an iterative process of data analysis and clinical input. Researchers at CHSRA analysed MDS data from several million MDS records, covering six states.

Karen and Zimmerman (1996) described the outcome of this undertaking. It was the formulation of 30 indicators of quality covering 12 domains of care. The 30 indicators were subject to pilot testing to determine their feasibility for use in the quality assurance process (Zimmerman et al. 1995). Validation studies were also conducted to determine the accuracy of the MDS items comprising the QIs, and the validity of the indicators in predicting quality of care problems. The MDS QIs were later reduced to 24, covering 11 domains of care, when a new version of the MDS and quarterly supplement was implemented. They are detailed more comprehensively later in this chapter.

The MDS QIs provide information on both individual residents and overall facility rates as well. They cover areas reflecting the physical functioning ability of residents and their cognitive and emotional status. Other items include whether they receive antipsychotic medication, whether they are physically restrained, and whether they have skin care problems such as pressure ulcers. Further, QIs include whether residents are incontinent and, if so, whether they receive some form of continence management. Some of the QIs are adjusted to take into account the fact that residents may be at higher or lower risk of having the condition reflected in the QI. Most provide prevalence rates, but a few of them reflect incidence rates instead.
As noted above, the CHSRA QIs are markers that indicate the presence or absence of potentially poor care practices or outcomes. They can be best described by addressing their characteristics: resident versus facility, prevalence versus incidence, and process versus outcome. At the resident level, QIs are defined as either the presence or absence of a condition. The resident level QIs can be aggregated across all residents in a facility, to define facility level quality indicators. Facility level QIs can be used to compare any given facility with others, or with nursing home population norms at the state or multi-state level. An example of a resident level QI is the prevalence of stage 1-4 pressure ulcers, described by CHSRA as ‘1’ if the resident had ulcers on the most recent assessment, and ‘0’ if not. The corresponding facility level indicator is the proportion of residents with pressure ulcers (stages 1-4) on the most recent assessment, divided by the total number of residents in that facility.

QIs cover both process and outcome measures of quality. Process indicators represent the content, actions, and procedures invoked by the provider, in response to the assessed condition of the resident. Process quality includes those activities that go on within and between health professionals and their residents. Outcome measures represent the results of the applied process. In the case of long-term care it may be more relevant to think in terms of a change in condition or continuation of health status. Hence, outcome quality should be represented by both point prevalence and incidence measures.
The distinction between a process and an outcome QI is not always straightforward. In some cases the QI is a combination of an outcome and a process in that it reflects both of them. An example is the prevalence of symptoms of depression (outcome) with no treatment (process) indicated. In other cases the QI can be considered either an outcome or a process measure, depending on the particular situation. An example is the QI ‘prevalence of little or no activity’. The QI can be thought of as reflecting the status (outcome) of the resident (i.e. the resident is not able to, or chooses not to engage in activities), or a process of care (i.e. the facility does not provide or arrange for the activities).

CHSRA researchers (chsra.wisc.edu/CHSRA/QIs/qivsmeas.htm, 2000) distinguish between quality indicators and quality measures. Quality indicators are not direct measures of quality. They are pointers that indicate potential problem areas that need further investigation and review. Quality indicators are the starting points for a process of evaluating the quality of care, through careful investigation. A true measure of quality identifies an aspect of care where there is definitely a problem and describes the extent of the problem. Quality measures are their own end points, and no further investigation is needed in order to make judgements about the quality of care.

The development and use of quality indicators requires understanding certain methodological challenges. These include issues of dealing with different assessment types, measuring and adjusting for differences in risk, identifying and applying performance standards or thresholds, and ensuring a balance
between sensitivity and specificity, or what CHSRA terms ‘target efficiency’. The following sections briefly describe the primary methodological challenges in the CHSRA protocols and their current approaches to each.

**QI INCLUSION CRITERIA**

Minimum Data Set resident assessment data are collected at several points for all residents: on initial admission to the facility, quarterly after admission, annually (fourth quarter) after admission, at times of significant change in health or functional status, and at readmission following a temporary discharge to a hospital or other treatment facility. Admission data provide baseline information, but do not represent outcomes or processes of care provided in the facility. Information collected at readmission can represent outcomes of care provided outside the facility, or outcomes of care within the facility that may have resulted in a need for transfer elsewhere, for example, hospital. For these assessments, the relationship between a QI and the quality of care provided by the facility is unclear, although it can provide an insight into a facility’s admission practices. Assessments conducted quarterly, or at times of significant change in resident status, are more likely to be indicative of the quality of care provided by facility staff.

In measuring the prevalence of a QI for a facility, consideration has to be given to whether or not to include data from all types of resident assessment. The issue of which assessments to include in inter-facility comparisons is also a controversial one, for the same reasons. Hence CHSRA’s decision to exclude admission and readmission assessments from the calculation of facility scores.
By excluding readmission data from the assessment the likelihood is increased that the potential problem captured by a QI is rooted in care provided within the facility. The tradeoff is that cases of poor care, which result in hospitalisation (i.e. false negatives), are missed.

**RISK ADJUSTMENT**

Risk factors are health or functional conditions that either increase or decrease the resident’s probability of having a specific quality indicator. In developing their approach to risk adjustment, CHSRA has had to distinguish between two criteria used for risk information (chsra.wisc.edu/CHSRA/QIs/qimethod.htm, 2000). The first is the identification of clinical risk factors to facilitate the provision of appropriate and high quality care. The second is the identification of differences in facility populations that could result in different rates of QI occurrence, and where there is a difference in the quality of care provided. With regard to the use of QIs, CHSRA was interested in the second purpose.

In developing a system to facilitate inter-facility comparisons of quality, and the identification of facilities with potential quality of care problems, CHSRA attempted to avoid using risk factors that are directly related to the quality of care. Risk factors used for facility comparison must focus on issues that differentiate the populations, but where the ability of facility staff to intervene is minimal. CHSRA (chsra.wisc.edu/CHSRA/QIs/qimethod.htm:2, 2000) express this concept as follows:

\[ QI = \text{Quality of Care} + \text{Risk} + \text{Error}. \]
Implicit in the preceding discussion is the idea that risk adjustment factors can be used to ‘level the playing field’ when comparing quality across facilities. The purpose for which the QIs are intended must be a major consideration in choosing an approach. CHSRA chose the stratification approach. For each QI that has a risk adjustment factor, they create three separate measures. The first is the occurrence of the QI without regard to risk. The second and third measures are the QIs measured separately for those people who have the risk factors and for those who do not – ‘high’ risk and ‘low’ risk respectively. By creating separate measures for the populations defined by risk, the surveyors and quality assurance teams can achieve three aims. First, they can determine the relative sizes of the high and low risk populations for a facility. Second, they can identify whether the facility has a potential quality of care problem, for either or both risk groups. Third, they can identify whether the facility has a potential quality of care problem for the resident population as a whole.

**PERFORMANCE THRESHOLD**

This approach also permits the setting of separate thresholds for the high and low risk groups, which can be important if the occurrence of a problem is more or less acceptable in these different groups. For example, the occurrence of some pressure ulcers among the high-risk group may be unsurprising; however, among the low risk group it would be intolerable. The advent of pressure ulcers among this group is much more likely to be an indication of a problem than with the quality of care.
Performance thresholds or standards are used to identify facilities with potential quality of care problems. This is usually measured by setting a level below which a facility’s performance is considered suspect. Thresholds can be either absolute or relative. Absolute thresholds define a single number, below which facility QI scores are considered unacceptable. Absolute thresholds can be developed based on evidence-based practice, a review of the literature, or a consensus of experts. These standards may be as low as zero, so that any occurrence of a QI signals a potential problem for the facility. Relative thresholds are peer-group based. A peer-group is the comparison group of facilities, for example, the mean plus two standard deviations, or the 75th percentile. The selection of a peer-group may have a dramatic impact on the setting of a threshold, and the consequent likelihood that a facility will be identified as having a potential quality problem.

The choice of a threshold affects the number of QIs for which a facility exceeds the threshold, the resources required to investigate potential quality problems, and the comparative standing of different facilities. Regardless of how the threshold is determined, it has implications for the cost and resources required of the survey process. The lower the threshold, the greater the number of facilities that will be identified for review.

**TARGET EFFICIENCY**

A fourth methodological concern addresses what CHSRA has termed the ‘target efficiency’ of the QI. This issue involves the specificity and sensitivity of the QI, in particular the likelihood of a false positive. That is, the QI will
identify a resident or a facility for whom ultimately there is no problem with the quality of their care. Minimising the number of false positives and false negatives is a critical concern, since each one decreases both the effectiveness and the efficiency of the quality monitoring process. False positives may also promote an erroneous perception of a quality of care problem for a facility where no such problem exists. Using too strict a QI definition, however, may result in the opposite problem, failing to identify quality problems that do, in fact, exist.

The target efficiency of the QIs varies with the extent to which the QIs are prevalence versus incidence measures, include both process and outcome measures, and can be risk adjusted. QIs can be made more target efficient by combining consideration of risk, process and outcomes into a single indicator. An example of such a QI is the prevalence of pressure ulcers (outcome) among people who were at high risk (risk factor) of developing a pressure ulcer at a previous time, and who did not receive any special skin care management programs (process).

As indicated by the above example, it is possible to define QIs that would have strong target efficiency. However, this may not be desirable. First, the more target efficient QIs become, the greater the difficulty in their interpretation, due to their complex definition. Second, the use of highly target efficient QIs may result in an exclusion of cases that are a consequence of poor quality care, but that do not meet all of the conditions set down in a complex definition. This would result in an increase in the numbers of false negatives.
Third, the use of complex definitions to increase target efficiency may also result in increased error. Specifically, any error that results from the first component of a complex definition can be multiplied, as the remainder of the definition compounds the error. Finally, the issue of the QIs in the monitoring process can take advantage of the survey, as a source of immediate verification, detecting false positives. The most important general point, with respect to target efficiency, is that the more likely the case that the indicator itself is to be used to render decisions on quality of care, without follow-up or verification, the more important is the target efficiency of that indicator.

MINIMUM DATA SET

The American Minimum Data Set (MDS) form for nursing home resident assessment and care screening (hcfa.gov.Medicaid/mds20/default.htm, 2000) is a multi-dimensional document, which comprises inter alia a basic assessment form, an admission background information form and a full assessment form, examining the status of all residents in the past seven days. Discharge and re-entry forms are also part of this data set.

Of specific interest to the Quality of Care for Nursing Home Residents’ project, and the Australian Quality Matrix, is the full assessment form, which consists of 18 sections and examines, in minute detail, a range of matters. The Australian equivalent is called a Resident Classification Scale, and examines 20 aspects of a resident’s life, which is detailed in Chapter 6. The full assessment form of the MDS addresses the following issues:
Section A – identification and background information;

Section B – cognitive patterns;

Section C – communication and hearing patterns;

Section D – vision;

Section E – mood and behaviour;

Section F – psychosocial well-being;

Section G – physical functioning and structural problems;

Section H – continence in the past 14 days;

Section I – disease diagnoses;

Section J – health conditions;

Section K – oral/nutritional status;

Section L – oral/dental status;

Section M – skin condition;

Section N – activity pursuit patterns;

Section O – medications;

Section P – special treatments and procedures;

Section Q – discharge potential and overall status;

Section R – assessment information; and

Section T – therapy supplement for Medicare PPS.

As noted earlier, all US nursing home residents are subjected to this assessment process at least once a quarter, and for a variety of additional reasons outside this time frame.
CHSRA QUALITY INDICATORS

CHSRA (chsra.wisc.edu/CHSRA/QIs/qi_desc.htm, 2000) describes 11 domains and 24 indicators, which they developed from the MDS. Appendix 2 details these indicators in full. Table 2.1 summarises the results. A comprehensive account of the CHSRA quality indicators is described in Chapter 6.

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>INDICATOR</th>
<th>RISK ADJ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Accidents</td>
<td>1. Incidence of new fractures</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>2. Prevalence of falls</td>
<td>No</td>
</tr>
<tr>
<td>2. Behavioral / Emotional</td>
<td>3. Prevalence of behavioural symptoms affecting others</td>
<td>Yes</td>
</tr>
<tr>
<td>patterns</td>
<td>4. Prevalence of symptoms of depression</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>5. Prevalence of symptoms of depression without antidepressant therapy</td>
<td>No</td>
</tr>
<tr>
<td>3. Clinical Management</td>
<td>6. Use of 9 or more medications</td>
<td>No</td>
</tr>
<tr>
<td>5. Elimination/Incontinence</td>
<td>8. Prevalence of Bladder or Bowel incontinence</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>9. Prevalence of Bladder or Bowel incontinence without a toilet plan</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>10. Prevalence of indwelling catheters</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>11. Prevalence of fecal impaction</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>14. Prevalence of tube feeding</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>15. Prevalence of dehydration</td>
<td>No</td>
</tr>
<tr>
<td>8. Physical Functioning</td>
<td>16. Prevalence of bedfast residents</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>17. Incidence of decline in late loss ADLs</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>18. Incidence of decline in ROM</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>20. Prevalence of anti-anxiety/hypnotic use</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>21. Prevalence of hypnotic use more than twice in the past week</td>
<td>No</td>
</tr>
<tr>
<td>10. Quality of Life</td>
<td>22. Prevalence of daily physical restraints</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>23. Prevalence of little or no activity</td>
<td>No</td>
</tr>
<tr>
<td>11. Skin Care</td>
<td>24. Prevalence of Stage 1-4 pressure ulcers</td>
<td>Yes</td>
</tr>
</tbody>
</table>
INDICATORS OF QUALITY CLINICAL CARE

The literature to be described next is that pertaining to specific clinical indicators of quality in residential aged care, investigated by scholars around the world during the past ten years. The reader is reminded that the principal objective of the *Quality of Care for Nursing Home Residents*’ project is to develop a matrix of quality, covering all aspects of care. However, as was obvious from the summary above, clinical indicators have featured in some, if not all, studies about quality of care in residential settings for the aged. Therefore they necessitated some investigation. In addition, other researchers such as Rudman et al. (1994) and Courtney and Spencer (2000) have addressed them specifically. Furthermore, still others have investigated individual indicators such as pressure ulcers (Leshem & Skelskey 1994; Madsen & Leonard 1997). Ouslander et al. (1995) and Peet et al. (1996) considered the management of urinary incontinence, and Spore et al. (1997), Manias (1998), Schmidt et al. (1998) and Chambers (1999) examined medication management and drug use and abuse. Vigild et al. (1998) considered oral health programs, while Bourdel-Marchasson et al. (1997) considered long term enteral feeding. Pichora-Fuller and Robertson (1997) examined the use of hearing aids and assistive listening devices. While not in itself an indicator of clinical care, attention to sensory loss certainly is such an indicator.
GENERAL CLINICAL INDICATORS

Rudman et al. (1994) calculated eight indicators for long stay residents in 69 Veterans Affairs nursing homes in the United States, which house more than 50 residents each. They utilised the data from the 1992 Patient Assessment Instrument, and their indicators comprised: the incidence and prevalence of bed sores, the incidence and prevalence of physically aggressive behaviour, and frequencies of six month losses of functions associated with eating, mobility, transfer and toileting by residents who were originally independent. The findings indicate a two to six fold difference between the most favourable quartile and the least favourable quartile for the eight indicators. Significant correlations were found across institutions for the following indicators: the incidence and prevalence of pressure ulcers, the incidence and prevalence of aggressive behaviour, and the frequencies of decline in the four ADLs by the initially independent residents. Of particular importance was the finding that one or more of the indicators were significantly better in nursing homes with several characteristics in common. These included: a smaller size, a slower resident turnover rate, a smaller proportion of residents with non-organic psychoses, a lower ratio of short stay to long stay residents, and a lower ratio of independent to dependent long stay residents.

Courtney and Spencer (2000) found that, while specific medical conditions did not feature in the list of clinical indicators nominated by registered nurse informants in Phase 1 of the Quality of Care for Nursing Home Residents’ project, a range of six indicators of clinical care were pre-eminent. These comprised low rates of decubitus ulcers, low levels of incontinence, high levels
of hydration, low rates of infection, high levels of skin integrity, and an absence of poly pharmacy.

**Decubitus ulcers and skin integrity**

Rates of pressure ulcers and compromised skin integrity have both been the topic of investigation by a variety of authors during the past ten years. Madsen and Leonard (1997), for example, endorsed the notion that clinical indicators may be used to monitor the quality of care, and they used the Waterlow Pressure Sore Risk Assessment Tool as an instrument to monitor pressure ulcer development in nursing home residents. It was found that by closely reviewing the skin status of residents, preventative actions could be implemented, thereby minimising the risk of pressure ulcer development. The advantage of utilising such a tool is that it is seen to be clinically relevant for nursing staff, while providing a bank of data for quality management.

Lemshem and Skelskey (1994) examined pressure ulcers in relation to quality management in long stay settings, and compared nursing home acquired ulcers with those acquired from acute care institutions. The entire resident population of one nursing home was followed for four years and 3.4% of residents developed pressure ulcers. This compares favourably with residents admitted from an acute setting, 20% of whom had pressure ulcers. Further, the pressure ulcers originating in the acute setting tended to be much more severe than those developed in nursing homes. The majority (59%) acquired in an acute setting were Stage III or IV, whereas the majority (87%) acquired in nursing homes were Stage I or II.
Levine and Totolos (1994) reported on a quality oriented approach to pressure ulcer management in a nursing facility. The Jewish Home and Hospital for the Aged (Bronx Division) is an 816 bed residential facility that has developed a plan for pressure ulcer management which relies on a documentation, data flow, and feed back strategy. The system incorporates principles of quality improvement and has resulted in a nursing home acquired ulcer prevalence rate of 3.1%, which is extremely low.

Fagan and Closs (1996) examined pressure ulcer prevention in the independent sector of the United Kingdom aged care industry. They investigated the extent of evidence-based practice implementation, equipment use, educational needs, resident and informal carer involvement, and the maintenance of quality of skin care. Their initial conclusions were that pressure ulcer management in this sector of the British industry is evidence-based. However, in many areas of practice, personal observation, and experience continue to take precedence over research evidence, a condition that also applies in Australian nursing homes in all sectors of the industry, as Chapters 4 and 5 demonstrate.

Remstadius (1999) found that a lack of knowledge of the cause of pressure ulcer development and the right equipment to use are the major contributors to the existence of pressure ulcers. She recommends that five issues should be addressed: (a) the aetiology of pressure ulcers; (b) the assessment of a resident’s risk status; (c) the second hourly turn; (d) the right equipment, and (e) an ethical obligation to do no harm. She has developed an instrument – the
Remstadius Pressure Ulcer and Risk Assessment and Intervention Tool – to help overcome the problem.

Moss and La Puma (1991) were also concerned with the ethics of the management of pressure ulcers in elderly residents. They claimed that aggressive treatment of advanced pressure ulcers is often inconsistent with the overall goals of therapy. They also highlighted that little information is available which demonstrates treatment efficacy. Health care professionals, and their institutions, are often stigmatised by the occurrence of a pressure ulcer, even though accountability might lie in the natural progression of a disease. The authors provide a framework for ethical decision making so that health care professionals and public policy analysts can make informed judgements about patients and standards of care.

**Multiple medications**

Spore et al. (1997) observed that high care residents frequently suffer multiple pathologies, which are treated with separate pharmaceuticals. Drug side effects and interactions, coupled with administration or dispensing errors, contribute to the problem, and the legal implications associated with such errors is another issue for consideration. A range of studies has addressed the issues associated with poly pharmacy, (Beers et al. 1992; Gurwitz et al. 1990; Manias 1998).

Beers et al. (1992) conducted a prospective cohort study to quantify the appropriateness of medication prescriptions in nursing home residents. Encompassing 12 nursing homes, and 1106 residents in greater Los Angeles,
the appropriateness of medication prescriptions was evaluated using explicit
criteria developed through consensus by 13 experts from the US and Canada.
These experts identified 19 drugs that should be avoided in general, and 11
doses, frequencies, or duration of use of specific drugs that should not be
exceeded, under usual circumstances.

Based on consensus criteria, 40% of residents in the study received at least one
inappropriate medication, and 10% received two or more inappropriate
medication orders concurrently. Seven percent of all prescriptions were
considered inappropriate. Furthermore, physicians prescribed a greater number
of inappropriate medications for female residents. Regression analysis,
corrected for clustering effects within facilities, showed that a greater number
of inappropriate medication prescriptions were also ordered in larger nursing
homes. However, inappropriate prescriptions were not related to the proportion
of Medicaid residents, or the number of physicians practising in the homes.
The authors concluded that the prescription of inappropriate medication in
nursing homes is common. Female residents, and residents of large nursing
homes are at the greatest risk for receiving an inappropriate prescription.

Gurwitz et al. (1990) also considered medication use in nursing homes. They
claimed that there is ample and compelling evidence to suggest that
medications are frequently used inappropriately in nursing homes and cite a
number of studies which have investigated approaches designed to minimise
the problem. Interventions appear to have centred on consultant pharmacists’
activities, but there is little evidence to document their impact or cost
effectiveness. By contrast, face-to-face educational interventions directed at physicians have been shown to be effective in improving prescribing for some medications. Furthermore, the prominent role played by nursing staff in the utilisation of many medications in the nursing home implies that an educational intervention excluding nursing staff would be insufficient to influence drug utilisation positively in many situations. The use of aperients, controlled almost exclusively by registered nurses, is a case in point.

While not focused on residents in nursing homes, the findings of the next study, which relates to the treatment of elderly patients by general practitioners (GPs), are a cause for concern. Manias (1998) reports on a study to evaluate the association between knowledge of drug use, and quality of drug management by GPs. A cross sectional design was used to evaluate a sample of 37 GPs knowledge of non steroidal anti-inflammatory drugs and their use in problems of the musculo-skeletal system, among the aged.

Practice performance was assessed using elderly ‘standardised’ patients. The reliability of knowledge test scores was evaluated using a measure of internal consistency. Rank order and linear correlation analysis evaluated the relationship between knowledge of drug use and the quality of therapeutic management in practice. The reliability of the knowledge test was 0.55, while that of performance scores was 0.6. The correlation between overall performance on the standardised patient cases and total knowledge score was 0.22 (CI 0.0-0.63). The knowledge scores were poorly correlated with quality of therapeutic management in office practice.
Specific medications of importance in nursing home care

Two categories of drugs, those that are psychoactive and analgesics, are used extensively in nursing homes, and their impact on residents has been examined by a range of scholars, including Schmidt et al. (1998), Bernabei et al. (1998) and Chambers (1999). Schmidt et al. (1998) analysed the influence of resident characteristics and selected organisational factors on the appropriateness of psychotropic drug use in 33 Swedish nursing homes. Specific criteria based on published guidelines were developed to measure appropriateness. Residents diagnosed with a psychiatric disorder and younger residents were found to be at greater risk of inappropriate medications. Facilities with pharmaceutical management teams had fewer deviations from the criteria, but these indicators explained only 15-20% of the variation in drug prescribing.

Manias (1998) also reported on the medication needs of residents in aged care facilities. This paper identified issues affecting medication management using the psychotropic family of drugs as an example. Strategies aimed at improvement included education, guidelines documents, legislation and consumer medication information.

Bernabei et al. (1998) looked at the management of pain in elderly patients with cancer in nursing homes. A total of 1492 Medicare certified and/or Medicaid certified nursing homes in five US states, were enrolled in the Health Care Financing Administration’s demonstration project. The study population comprised a group of 13,625 cancer patients aged 65 years or over who were
discharged from hospital to one of these institutions in the period 1992 to 1995. The data were obtained from the multi linked Systematic Assessment of Geriatric Drug Use via Epidemiology (SAGE) database. The major outcome measures for this study were the prevalence and predictors of daily pain and analgesic treatment. Pain assessment was based on patient’s report, and was complemented by a multidisciplinary team of nursing home personnel who observed whether each resident complained of, or showed evidence of pain, on a daily basis, for a period of seven days.

A total of 4002 patients (24%, 29%, and 38% of those aged >85 years, 75-84 years, and 65-74 years respectively) reported daily pain. Age, gender, marital status, physical function, depression, and cognitive status, were all independently associated with the presence of pain. Of patients with daily pain, 16% received a WHO level 1 drug, 32% a level 2 drug, and only 26% received morphine. Patients over 85 years were less likely to receive either weak opiates or morphine than those aged 65-74 years (13% v 38%).

More than a quarter (26%) of patients in daily pain did not receive any analgesic agent. Patients older than 85 years in daily pain were also less likely to receive analgesia (OR 1.4, 95% CI 1.05-1.44). Other independent indicators of failing to receive any analgesia were minority race, low cognitive performance, and the number of other medications received. The authors concluded that daily pain is prevalent among nursing home residents with cancer and is often untreated, particularly among older and minority patients.
Chambers (1999) investigated the potential for the abuse of medications among the elderly in 10 nursing homes in the United Kingdom. He noted that a minority of ‘unscrupulous’ doctors, pharmacists or nursing home staff, might exploit the drugs prescribed to the residents. He commented that disorganised practices and homes, poor communications and ‘sloppy’ professional habits provide opportunities for over dosing, administration errors, and fraud or theft. He identified circumstances leading to the potential abuse of elderly residents medications including: cognitive impairment, mobility dependency of the resident, lack of adherence to regulations such as daily checking of dangerous drugs by nursing staff, and the inability or unwillingness of residents, their families, or junior staff, to challenge the practices and behaviour of prescribers or dispensers of medications. Measures that may to taken to avoid or minimise such abuse from occurring include the regular review of prescribing patterns by external independent sources such as the National Health Authority, the use of teams of pharmacists rather than single practitioners to provide advice and information to nursing homes, and the documentation of all effects and outcomes of pharmaceutical interventions by registered nurses over a series of shifts, thereby ceasing to rely on the veracity or practices of a single RN administering prescription medications.

**Continence care**

The 1996 Queensland Aged Care Assessment Teams’ Annual Report indicates that one of the principal reasons for the speedy admission of some residents into care is the onset of urinary incontinence. During the past decade, the management of incontinence has been the focus of considerable investigation,
in both the academic and commercial sectors. A series of authors including Peet et al. (1996), Cruise et al. (1998), Ouslander et al. (1995), Fonda (1990) and Schnelle et al. (1990, 1993) assessed the management of urinary incontinence in nursing homes and examined strategies for continence care.

Peet et al. (1996), in an analysis of 100 skilled nursing facilities across the United States, determined that 87% of the homes used pads and 83% used day time toileting to promote continence care, but only 52% practised night time toileting and 49% promoted the use of clear toilet signage. The authors determined that a greater emphasis was placed on incontinence management rather than continence promotion, and were of the view that the latter was only ‘good’ in approximately 32% of the homes in the study. Although the majority of homes reported having adequate access to aids and appliances, 39% of residents were found to have severe symptoms resulting in the wetting of beds and clothes. Furthermore, only 30% of homes had designated continence nurses, despite the magnitude of the problem. The authors concluded that the implications for meeting (US) federal incontinence care standards, and for assuring high quality resident care, are profoundly compromised if these findings are replicated throughout the country.

In a study of Australian conditions Fonda (1990) also examined the prevalence and management of urinary incontinence in institutions and made a series of recommendations to improve the management of the problem. A one-day census of ten geriatric assessment and rehabilitation services and nursing homes was undertaken in Victoria. An ‘extended’ definition of incontinence
was applied to include residents with ‘dependent’ incontinence, meaning that they were dry only because they had been prompted or assisted to the toilet.

A total of 1659 individuals were surveyed including 333 short stay and 1326 nursing home residents. The mean age of the short stay participants was 77 years, while that of nursing home residents was 81 years. Only 43% and 23% respectively of those surveyed were independently continent, while 26% and 11% respectively were dependently continent. Episodes of incontinence occurred one or more times per day in 33% of residents, and there was a high degree of association between incontinence and physical and mental infirmity. The study proposed a range of management protocols aimed at different sub-populations that might respond more effectively to different interventions. These ranged from prompting, 2nd hourly toileting schedules, and mobility assistance, to regular bed checks and medication reviews. Similar protocols were also recommended by Schnelle et al. (1990, 1993).

Cruise et al. (1998), and Ouslander et al. (1995) examined specific issues associated with urinary incontinence. Cruise and his co-authors (1998) examined the association between variability in noise, light, and incontinence care practices and residents’ night time sleep. Using a variety of technologies including wrist actigraphs and pressure sensitive Kynar bed pads, the authors concluded that noise and incontinence care practices were associated with substantial sleep disruption, and interventions minimising environmental events are needed to promote better sleep patterns in incontinent nursing home residents.
Ouslander et al. (1995) developed a non-invasive assessment strategy to enable nursing home staff to identify incontinent residents who respond well to prompted voiding. Using a cohort of 191 incontinent long stay residents from seven nursing homes, trained research nurses aides prompted voiding from 7 am to 7 pm for one week. The intervention was maintained in responsive residents five days a week for an additional nine weeks. Research staff conducted physical checks for wetness hourly from 7 am to 7 pm for three days to obtain baseline data during days 5 through 7 of the seven-day prompted voiding intervention, and for three days at the end of nine weeks. Outcome measures were percentages of wet individuals at check time, and those who responded to prompting, with responders defined as residents with an average of one or fewer wet episodes per day in days five to seven. The authors concluded that a substantial proportion of nursing home residents respond well to prompted voiding, and that the most responsive residents can be identified using data collected during a three-day trial of the intervention.

**OTHER INDICATORS**

**Oral health**

The provision of oral health care and dental hygiene represents one of the most challenging activities for staff in aged care facilities. Whether for natural or artificial teeth, the task of keeping them clean and healthy is multifaceted and frequently unmanageable among those with cognitive impairment. Vigild et al. (1998) undertook an oral health care program with a one-year follow-up for residents with severe behavioural disorders in nursing homes in Denmark. A
total of 264 residents participated in the program, which comprised an initial oral examination, subsequent dental treatment based on the principles of realistic treatment need, and visits by a hygienist every three months. The follow-up data revealed a significant decrease in the mean number of teeth with primary decay and periodontal treatment need for those with their own teeth. Regarding denture related conditions, a decrease was found in the presence of traumatic ulcers, denture stomatitis and the need for prosthodontics treatments. An improvement in denture hygiene was also observed. The authors concluded that professional dental intervention has a beneficial effect on oral health indicators even when introduced to rather unapproachable recipients of dental care services.

**Enteral feeding**

Bourdel-Marchasson et al. (1997) conducted an audit of percutaneous endoscopic gastrostomy (PEG) feeding in nursing homes. Their aim was to describe early and late tolerance of long-term enteral feeding among older adults. This was one criterion which had been identified by Philips (1991), and in early versions of the model developed by the CHSRA researchers (2000), as a measure of quality care in nursing homes, mentioned previously in the chapter. For this reason, the later study is described in detail.

Fifty-eight residents among a total of 240 in nursing homes in southwest France were examined; 12 were under the age of 65 years and the remainder older. The gastrostomy insertion was performed because of a vegetative state in six residents, swallowing difficulties in 31 and anorexia in 21 residents.
Surgery was conducted between 1990 and 1995. A control group was assembled in December 1996, which included all residents for whom the question of nutritional support was mentioned in their records, but where no artificial nutrition had been implemented due to the residents’ or family refusal, or staff decision. This group included 50 residents, five of whom were under 65 years and 45 older. In 22 cases the nutritional problem was a swallowing difficulty and in 28 cases it was anorexia. Pressure ulcers were present before insertion in 34 residents in the PEG group and seven in the control group.

A variety of outcome measures were established. Early mortality (4 weeks) was noted in 13.8% of the PEG group compared with 10% of the controls. The duration of follow-up of living residents was 72 weeks in the PEG group compared with 53 weeks in the controls. Only 20% in the PEG group were free of any cutaneous complications around the insertion site, and eight abscesses occurred during the first week. Pulmonary complications occurred in 39% of the PEG group, compared with 30% of the controls. Aspiration pneumonia was significantly associated with swallowing difficulties in both groups. Vomiting occurred in 15.5% of the PEG group, compared with 12% of the controls, and gastroesophageal reflux was found in two PEG residents, compared with one among the controls. Pressure sores healed in 20 out of 34 residents with PEGs, compared with two of the seven in the controls, and new ulcers appeared in six of 24 PEG patients compared with eight out of 43 in the controls.
Sensory loss – hearing

Pichora-Fuller and Robertson (1997) planned and evaluated an on-site audiologic rehabilitation program for residents in a Canadian nursing home. The program focused on the use of hearing aids and other assistive listening devices. Prior to the implementation of the program, outcome measures were obtained on two separate occasions six months apart to establish a base line. Two subsequent evaluations were conducted, one at six months and the other, one year after implementation.

The primary evaluation tool was a questionnaire designed to assess changes in the scope and quality of communication in 17 ‘everyday’ situations. Key communication situations, for which the residents and staff considered hearing to be important, were identified. For each circumstance, residents were asked about their interest and rate of participation in the situation, ability to understand, satisfaction with communication, and benefit from hearing aids or assistive listening devices (ALDs). The skill of residents and staff in using these prostheses was also tested.

The program resulted in an increase in the number of situations attended by residents. Specifically, more residents attended chapel, meetings and social gatherings. Importantly, there was a dramatic increase in the familiarity of residents and staff with ALDs. Correspondingly, the use of an FM system in the chapel and at meetings contributed to residents’ reports of improvements in communications in those situations. There was also significant improvement in the skills of both residents and staff in operating hearing aids and ALDs.
OTHER INFLUENTIAL FACTORS IN QUALITY CARE

PROPRIETORSHIP

While recognising that there are differences in emphasis between cultures, as highlighted by Koyano (1996), Chow (1996) and Wun and Kwan (1996), the provision of residential aged care has usually been under one of three types of proprietors in developed economies. These comprise: government ‘owned’ facilities; those provided by commercial operators; and those in the not-for-profit sectors such as churches or charities. A debate has continued for several years as to the merits of each system and whether or not proprietorship influences the quality of care. In 1995 Aaronson et al. attempted to examine differences between the for-profit and not-for-profit sectors of the industry. Their findings indicated that not-for-profit providers offered ‘better staffing and better outcomes among nursing homes with residents at higher risk for adverse outcomes’ (1994:773) to Medicaid beneficiaries and to self-pay residents, than do the commercial proprietors.

Hughes and Marcantonio (1993) found that nurses working in proprietary and non-profit nursing homes allocated their time in similar ways across various job responsibilities. In addition they found that, compared with nurses who work in non-profit homes, nurses who work in proprietary homes perform significantly more physical examinations on their residents. They noted that nurses employed by both categories of proprietors received similar hourly
wages, but those employed in proprietary nursing homes receive fewer fringe benefits.

Minichiello et al. (1999) confirmed that this situation also pertained in Hong Kong, where those who work for the Hospital Authority and similar governmental instrumentalities receive annual bonuses and other benefits, and those in the commercial sector receive none. In Australia, fringe benefits are not available to employees of any nursing homes, other than those at senior management levels who are able to negotiate individual employment contracts. In those circumstances fringe benefits are available equally to managers in the not-for-profit sector and those in the commercial industry.

In another study, Bell and Krivich (1990) examined the effect of ownership on the quality and cost of care in skilled nursing facilities, using unadjusted and adjusted mortality rates for such facilities in Illinois. Results indicate that, when using unadjusted mortality rates, for-profit facilities had much lower rates than either government owned or not-for-profit facilities. Differences by type of ownership disappeared when mortality rates were adjusted. The higher percentage of discharges to general hospitals exhibited by for-profit facilities, compared with other types of facility ownership, appeared to have the strongest effect on skilled nursing facility mortality rates.

**ROLE OF STAFF**

The role of staff in achieving quality care is paramount according to Blair et al. (1996), Johnson-Pawlson and Infeld (1996), Grau et al. (1995), Coulson
Pearson et al. (1993), Bowers and Becker (1992) and Smyer et al. (1992). Blair and her colleagues (1996) investigated three conditions, with residents and staff in a metropolitan nursing home randomly assigned to each. Condition 1 was designed to test whether staff’s use of operant behavioural management strategies would cause a greater increase in residents’ self care behaviour, than staff’s use of mutual goal setting (Condition 2), or routine nursing care (Condition 3). In-service training was provided to staff in Conditions 1 and 2 but not Condition 3. Over a period of 22 weeks, nursing staff encouraged residents to perform self-care tasks independently. Data analysis indicated significantly greater change in self-care behaviours for subjects in Condition 1 than for subjects in Conditions 2 and 3.

Johnson-Pawlson and Infeld (1996) tested two hypotheses, that: (a) the presence of more registered nurses (RNs) improves the quality of nursing care; and (b) increases in the numbers of all types of nursing staff improve the quality of nursing care. The study was based on a multidimensional measure of quality in nursing care in residential aged care facilities. Findings indicate that the ratio of RNs to residents is directly related to a measure of residents’ rights deficiencies. It was evident that the fewer the number of registered nurses, the greater the diminution in residents’ rights. In addition, the ratio of total nursing staff is directly related to a lower overall deficiency index and a higher quality of care score.

Grau et al. (1995) conducted a pilot study to assess nursing home residents’ perceptions of their best and worst experiences in the nursing home. Findings
suggest that residents are least satisfied with the care provided by nurses’ aides and most satisfied with that provided by professional staff. The quality of interpersonal relationships with staff was the basis for the majority of both residents’ best and worst experiences. Qualitative analyses identified specific ‘adaptive responses’ that were associated with how residents interpreted and responded to negative experiences with care.

Bowers and Becker (1992) also examined the work of the nurse’s aide through a combination of participant observation and in-depth interviews with this group of workers. Findings suggest that strategies developed by individual nurse’s aides to organise their work are important determinants of both the quality of care and worker turnover. Further, Smyer et al. (1992) noted that nursing assistants have the primary contact with residents in aged care facilities. The Penn State Nursing Home Intervention Project’s longitudinal study assessed the single and combined effect of two interventions. These were intended to affect nursing assistants’ performance by increasing their knowledge and motivation, and skills training and job redesign. Statistically significant differences in nursing assistant knowledge were evident in comparisons between participants and controls, but performance was not improved. This holds implications for policy and practice and further research is necessary to account for the findings or draw any definitive conclusions.

With particular reference to seniors with dementia in residential aged care, an Australian study is enlightening. Coulson (1994) found that the way in which staff interact with nursing home residents is dependent on the total
environment. Factors which influence outcomes for the better include: the level of knowledge a carer possesses; the available support from nursing home management; the manner in which care is organised; and the actual physical surrounds including the buildings, gardens and other resources which combine to create a total environment.

RESIDENT SATISFACTION

One of the simplest means for measuring quality of care in nursing homes is to ask the recipient. Kruzich et al. (1992) asked 289 residents in 51 nursing homes to assess the influence of organisational factors on residents’ satisfaction with their nursing homes. Longevity of employment among personnel, levels of benefits, wages for nursing assistants, and their perception of the charge nurse’s fairness and competence, as well as the degree of personalisation of residents’ rooms, were all related to residents’ satisfaction with the nursing home. Davis et al. (1997) also developed an inventory to measure residents’ perceptions of the quality of their nursing home services. Four factors were isolated as being influential:

I. Staff and environmental responsiveness;

II. Dependability and trust;

III. Food-related services and resources; and

IV. Personal control.

Pearson et al. (1993) investigated the impact of staffing mix on nursing home residents’ quality of care and life. A schedule designed to measure satisfaction with care was developed and resident interviews were undertaken using this
measure and the Life Satisfaction Index. The majority of responses to the resident satisfaction schedule were positive. The authors noted, however, that the high percentage of positive responses did not correlate with the observations of the research assistants. Further, there was some concern that, while residents were able to assess the care that they received, they were reluctant to criticise the staff or their behaviour.

This final factor, residents’ reluctance to criticise, is widely recognised and has been considered by a variety of researchers including Cooper and Jenkins (1998), Forbes and Neufeld (1997), and Owens and Batchelor (1996). Cooper and Jenkins (1998) identified six possible explanations to account for this phenomenon: social desirability, acquiescent response, fear of reprisal, gratitude, low expectations and loyalty to carers. Social desirability occurs when individuals give answers consistent with what they consider to be the prevailing norms, rather than their accurate personal opinions. Acquiescent responses, the tendency to agree with statements regardless of their content, have been recognised for decades. Ware and Snyder (1978) demonstrated that between 40% and 60% of respondents to satisfaction questionnaires exhibit some degree of acquiescent response. Other researchers such as McCusker (1984) argued that phrasing some items positively and some negatively could circumvent these problems. However, Forbes and Neufeld (1997) point out that, while it resolves one set of problems, it may introduce others, such as social desirability. Fear of reprisal is a serious matter for the frail aged, dependent on others to provide their care and support their activities of daily living. Forbes and Neufeld (1997) indicate that residents’ dependence may
make them unwilling to express any dissatisfaction that they feel for fear of antagonising service providers. They also note that this fear is especially great when the researcher is affiliated with the service provider.

Closely linked to the fear of losing access to care is gratitude that they receive it at all. Cooper and Jenkins (1998) are of the view that the gratitude which most residents feel has a significant impact on their expression of satisfaction. In addition, although many residents are grateful for the care they receive, few appear to have any clear expectations about the levels of care to which they are entitled. Bond et al (1990:15) quote a respondent as saying, ‘They [nurses] have a lot of work to do. I don’t expect impossibilities’. The final item on Cooper and Jenkins’ (1998) list is that of loyalty to paid carers. It is not unusual for nursing home residents to form close personal attachments to their professional carers. These attachments may also cause respondents to refrain from criticising staff for fear it will reflect badly on their carers. Furthermore, a number of respondents in a survey conducted by Owens and Batchelor (1996) refused to make any suggestions for improvements, as they believed that doing so would result in an increased workload for their nurses.

SYNOPSIS

The Quality of Care for Nursing Home Residents’ project was constructed around the framework of the Commonwealth Standards for Aged Care Facilities (1997), compliance with which is mandatory for all service providers by 2001. Paramount among its features is the philosophy of continuous quality
improvement, and a comprehensive account of this principle was outlined earlier in this chapter. In addition, an exposition of current international literature has been documented, encompassing general indicators of quality care in nursing homes and specific clinical indicators used to determine the outcomes of resident clinical care. Existing tools for determining quality have been highlighted, as have strategies for attaining it. A range of other factors which the literature reveals as being influential, including the proprietorship of the facility, the role of the staff, and residents’ satisfaction with the care and services they receive, have also been discussed. The next chapter describes the research design of the study.