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Unnecessary and avoidable hospital admissions for older people

A report to the Department of Health and Ageing

By Siggins Miller

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Executive summary

Consumer demand for hospital services in Australia is increasing. Older people are significant users of hospital services, presenting at hospitals more often than other age groups and occupying a substantial proportion of beds. It has been argued that many admissions of older people are avoidable, and that the demands placed on the hospital system may be relieved if alternatives can be found.

The aim of this report is to provide the AHMAC Working Group on the Care of Older Australians with an evidence-base on unnecessary or avoidable admissions to complement its other projects, and to document successful interventions and alternative models of care on which policy and program responses can be built. It comprises a review of relevant research literature, interviews with nominated expert informants, a listing of current Australian initiatives, and conclusions and recommendations drawn from all these sources.

Part 1: A review of the literature

A review of the international research literature found that the scope of available studies was highly varied, both in content and method. Estimates of avoidable admissions in the elderly ranged from 3% to 84%. AIHW has made a national attempt to track avoidable admissions in the elderly using definitions primarily focussed on ambulatory care sensitive conditions, indicating that people 65 and older are about 12% of the Australian population, and account for 44% of avoidable admissions.

Distal predictors of avoidable admissions identified in the literature are socio-economic factors (low income, decreasing social networks, domestic violence, health illiteracy, Indigenous status) and poor management of preventable predisposing conditions and health risks. Proximal predictors are reduced access to quality primary care (including RACFs, GPs, rural areas) and ambulatory care sensitive conditions, particularly if patients have other risk factors and receive poor post-discharge care.

Structural causes include fragmented communication networks and lack of integration among providers, and funding incentives and structural barriers that inhibit coordination. Hospital-based causes of avoidable admissions include poor decisions about suitability for admission and the narrow scope of hospital services.

The literature describes successful interventions at various points in the system. Preventive interventions to increase the general health of elderly people and avert preventable conditions include vaccination, fall prevention, nutrition and physical activity programs. Successful interventions in primary care include specialist geriatric care in RACFs, options for acute care in primary settings, after hours primary care consultation, medication management, and health assessments. Interventions in secondary care are short stay or observation wards, routine discharge planning, presence of specialist and GP staff in the ED, and the use of decision-making protocols in admission. A number of interventions across health care levels include quick response services, geriatric day hospitals, comprehensive geriatric assessment, advance health directives, and coordinated care.

The literature also describes alternative models of care including early risk screening, hospital in the home, residential rehabilitation, supported discharge, day rehabilitation, geriatric observation services, day surgery, fast track services, and case management.

Part 2: The views of informants

Informants interviewed for this project identified these factors as determinants of avoidable hospital admission: inadequate definition of what should be regarded as avoidable or inappropriate, the circumstances of elderly people and their carers that led to admissions, the heterogenous needs of the elderly population, structural features of the Australian health care system and characteristics of the funding environment, and the needs of the gerontological workforce. They proposed interventions that considered good practice and high priority to reduce avoidable hospital admissions of the elderly.

Part 3: Discussion and findings

The information gathered from the research literature, the knowledge and experience of the informants, and current Australian activity in this area has been triangulated to identify interventions that achieve their intended goal, and may be implemented with confidence; interventions with strong

face validity or human worth that should be considered, but need further work to establish their efficacy; and interventions whose value is assumed even though there is little evidence to indicate that they reduce admissions and require further investigations before they are implemented.

Both immediate and more distant causes of avoidable admissions arise at four levels of intervention in the health care system - prevention, primary care, ambulatory care, and hospital care. Preventive measures reduce the risk of the condition's occurring. If the condition does occur, successful management of the condition at the level of primary care stops it from escalating to the point where ambulatory care is required. In turn, successful management of the condition at this level stops acute admission to hospital care. Following discharge from hospital, appropriate management at the ambulatory and primary care levels, decreases the likelihood of re admission.

Themes to be addressed in such a multi-pronged approach to reducing avoidable admissions include:

- *Primary prevention*: Preventive programs at the primary level that aim to increase over all health and wellbeing, decreasing the likelihood of chronic disease, vaccine preventable diseases, falls and malnutrition; and improving the nutritional status of older people.
- *Primary intervention and management*: Programs of care for sufferers of chronic diseases and ambulatory care sensitive conditions, including programs that promote self-management; access to GPs, including in rural and remote areas; pharmaceutical programs that plan and coordinate drug treatments to reduce the risk of adverse drug events arising from reactions or interactions.
- *Pre-hospital*: comprehensive geriatric assessment and management; quick response services; primary options for acute care.
- *Alternatives to admission*: Hospital in the home or RACF; geriatric day hospitals; community-based palliative care services
- *Pre-admission*: Staffing of EDs; targeted admission procedures; a decision-making tool to help make appropriate admission decisions; short-stay observation wards
- *Preventing re-admission*: Coordinated discharge planning practices to reduce the risk of readmission; step-down services; transitional care; rehabilitation.
- *Workforce issues*: Attract and retain qualified professionals to the aged care sector; increase the skill level of existing workers.
- *Integration and coordination*: Integrated funding systems that allow patient care to be coordinated across levels of health care delivery; communication; case management.
- *Consumer focus*: Acknowledgment of the broader needs of the ageing population; avoidance of ageism; a system of advance directives that allow patients and their guardians to make end of life decisions, reducing the need for unsolicited care.

The findings give examples of each of these themes, with conclusions about actions to provide a way forward in reducing avoidable hospital admissions for the elderly in Australia.

Current initiatives to avoiding unnecessary hospital admissions of the elderly

Appendix 1 presents a stocktake of current and proposed initiatives to reduce avoidable hospital admissions at local, state, and national levels, based on existing records and information supplied by each Australian jurisdiction.

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Unnecessary and avoidable hospital admissions for older people

Introduction

In April 2003, the Commonwealth Department of Health and Ageing commissioned Siggins Miller Consultants to undertake a study of unnecessary and avoidable hospital admissions for older people in Australia. The stated objective of the project was to provide the AHMAC Working Group on the Care of Older Australians with an evidence base on unnecessary or avoidable admissions to complement other projects in the work program of the Working Group, and to document successful interventions and alternative models of care on which policy and program responses can be built.

In collaboration with the Commonwealth's task group, the consultants were asked to fulfil the following requirements:

- Review available literature and other sources about:
  - the extent and causes of unnecessary and avoidable hospital admissions for older people (both planned and unplanned);
  - consumer experience of unnecessary and avoidable hospital admissions for older people;
  - factors that contribute to inappropriate admissions for older people;
  - successful strategies and initiatives to reduce unnecessary or avoidable admissions; and
  - appropriate alternate forms of care.
- Liaise with States and Territories, as well as private sector providers, to identify current or planned initiatives, models of care and interventions for avoiding unnecessary admissions of older people to hospital and providing appropriate alternate forms of care;
- Consult with consumer groups to gain their perspectives;
- Identify and analyse successful strategies and initiatives and the factors which are critical to their success; and
- Develop a report consolidating the results of the review and research, and any recommendations arising from this work.

The task group clarified the scope of these objectives and the project method in initial discussion with the consultants - in particular, the search of electronic databases and internet sites to find relevant research material, identification of key stakeholders (including the Clinical Reference Group to the Care of Older Australians Working Group, and Commonwealth, State and Territory Officers), an agreed list of key informants and information sources, and collation of existing stocktake reports on current activity in Australia.

Contents of this report

The results of these activities are detailed in this report as follows:

1. A review and analysis of Australian and international literature identified by library and website searches
2. A content analysis of interviews with key informants
3. Conclusions and key findings to provide a way forward, based on the materials and views collected.

A list of current and proposed initiatives at local, statewide, and national levels in Australia, and other initiatives from the United Kingdom, New Zealand and Canada is included in an Appendix.

Methods

Literature review

The review began with two searches of databases and websites for materials about hospital admissions for the elderly. A search by the Library of the Department of Health and Ageing yielded 114 items. At the same time, we conducted a search that focussed on policies, programs, issues, and specific strategies to avoid or prevent Emergency Department presentation or admission to acute wards. The search strategy for interrogating electronic databases may be found at Appendix 4.

This strategy initially produced 264 items, seven of which overlapped the Departmental Library's search. A first filtering of these results led us to omit 111 references as not directly pertinent to this task, but secondary citations and hand searches added a further 45 helpful sources. We also asked the informants interviewed for other parts of this project to tell us of published studies relevant to the project that our search had not identified, or any relevant unpublished studies. These references were categorised by theme and retrieved electronically or by hand for the purpose of the review. In addition, we downloaded descriptive materials and policy documents from 35 websites in Australia, Canada, New Zealand, the USA, and the UK.

The literature review also includes data from the Australian Institute of Health and Welfare tracking potentially preventable hospital admissions in the population as a whole, and for patients 65 and over.

Informant interviews

Interviews were arranged with 31 nominated informants, only one of whom declined to participate. 19 telephone interviews varied in length from 15 minutes to over an hour. Ten informants preferred to respond by email, and in several cases also sent us additional publications or details of relevant projects. We record our thanks to these respondents, whose names are listed in Appendix 2, and a copy of the interview protocol may be found at Appendix 3.

Conclusions and key findings

Finally, the report discusses issues in developing the evidence on avoidable admissions, and canvasses possible actions to address the range of issues they entail, including examples of such actions.

Initiatives

Appendix 1 contains a listing of current and proposed initiatives at local, state, and national levels in Australian, and initiatives from the UK, New Zealand and Canada. Anna Howe, Richard Rosewarne, and Janet Opie completed a related task for AHMAC in 2002.[1] The listing draws in part on data presented in the Howe report, and adds initiatives identified from international, State and Territory websites, and from informant interviews. Some informants suggested others who were potential sources of information about current initiatives, and we also contacted them.

[1] Howe A., R. Rosewarne, J. Opie (2002). *Mapping of services at the interfaces of acute and aged care.* Balwyn East: AACS

Part 1: Review and analysis of the literature

Introduction

The aim of the literature review is to examine:

- the extent and causes of unnecessary and avoidable hospital admissions for older people (both planned and unplanned);
- factors that contribute to inappropriate admissions for older people;
- successful strategies and initiatives to reduce unnecessary or avoidable admissions;
- consumer experience of unnecessary and avoidable hospital admissions for older people; and
- appropriate alternate forms of care.

We first reviewed all the relevant studies, whatever their methodological quality, to distil what they reported about the extent and nature of avoidable admissions; determining factors (including socio-economic issues and preventable risks); access to alternative sources of care (including RACFs and GPs, and physical access); the range of ambulatory care-sensitive conditions; post-discharge care; structural and hospital-based causes; and consumer experience.

Since a central purpose of the review is to identify and describe successful strategies and initiatives, we took the additional step of classifying the available studies of interventions according to the hierarchy of categories now regarded as reliable for evidence-based reviews.

The hierarchy of evidence listed in the NH&MRC guidelines is as follows: (NH&MRC 1998)

1. Statistical modelling
2. Systematic review
3. Randomised controlled trial
4. Pseudo-randomised controlled trial
5. Clustered randomised controlled trial
6. Concurrent control or cohort
7. Case control
8. Historical control
9. Interrupted time series
10. Case series pre-test / post-test
11. Case series post-test
12. Descriptive
13. Pilot

Ideally, the evidence-base should consist predominately of studies at the first three levels of evidence, with systematic reviews and randomised controlled trials prominent. By this measure, about half the intervention studies cited are of low level methodological quality.

According to the guidelines, the average time taken to undertake a systematic review is about 30 full time person-weeks. In the three-month timeframe allocated for this task, we clearly could not perform a full systematic review of interventions to reduce avoidable hospital admissions in the elderly. We have therefore relied on published systematic reviews to identify successful interventions and their critical success factors, and added our own systematic analysis of the quality and findings of individual studies that fell outside the published reviews.

The quantity of literature on specific interventions is not large. Descriptive studies have limited value, but do generate hypotheses for further trials. There is little replication in the existing evidence - that is, while there is widespread uptake of alternative forms of care, and in some instances interventions, there is little identifiable published or unpublished evaluation of these programs. Such evaluation could indicate the efficacy of an intervention for different subgroups of populations, in various settings, and across different conditions.

With a few notable exceptions, the current evidence is too sparse to make general assertions that any form of intervention or treatment constitutes ‘best practice’.

The following table lists the number of intervention studies reviewed in each category, in descending order according to methodological strength.

Table 1: Studies on avoidable hospital admissions of the elderly by method of study

Statistical modelling

Statistical modelling, usually structural equation modelling, that uses existing statistical data to model cause effect or cost benefit relationships.

1 study examined the outcomes associated with placing a GP in the emergency department

1 study examined the number of admissions that could have been avoided if a specialist had been available for consultation

1 study developed a model to identify patients at risk for readmission

1 study examined the cost-effectiveness of an exercise program for elderly people

Systematic review

Systematic location, appraisal and synthesis of evidence from scientific studies.

5 Cochrane Systematic Reviews were identified. Cochrane Systematic Reviews review only randomised controlled trials. These reviews covered the following topics:

- Discharge planning: The review identified 8 studies. The effects of discharge planning on readmission rates were mixed. No statistically significant differences were detected for patient health outcomes.
- Hospital in the home: The review identified 16 studies. There were statistically significant findings; Patients allocated to hospital at home expressed greater satisfaction with care than those in hospital, carers however expressed less satisfaction with hospital at home compared with hospital care and allocation to hospital at home resulted in a reduction in hospital length of stay, but hospital at home increased overall length of care.
- Medical day hospital care for the elderly: The review identified 12 studies. Medical day hospital care for the elderly appears to be more effective than no intervention but may have no clear advantage over other forms of comprehensive elderly medical services. When resource use was examined the day hospital group showed trends towards reductions in hospital bed use and placement of survivors in institutional care.
- Interventions for preventing falls in the elderly: The review identified 32 studies. The reviewers list the interventions that are likely to be successful in preventing falls, concluding that interventions to prevent falls that are likely to be effective are now available; less is known about their effectiveness in preventing fall-related injuries.
- Services for helping acute stroke patients avoid hospital admission: The review identified 4 trials. There were no statistically significant differences between the patient and carer outcomes of the intervention and control groups either within individual trials or in pooled analyses. There was a trend toward greater hospital bed use and increased costs in the intervention groups.

Other non-Cochrane style systematic reviews identified were these:

- Hospital utilisation review methods. This paper provided a description of utilisation review (UR) methods that have been used in the United States and the direction UR is likely to take in the future. The focus of the paper is on the methods used to perform UR operationally. Particular attention was paid to the predominant form of UR employed in the United States, concurrent review of the need for a hospital level of care, and on the criteria used to assess appropriateness of hospital admissions and days.
- Alternatives to emergency hospital based care. This review identified 34 studies. The evidence suggested that broadening access to primary care and introducing user charges or other barriers to the hospital emergency (A & E) department can reduce demand for expensive secondary care, although the relative cost-effectiveness of these interventions remains unclear. On a smaller scale, employing primary care professionals in the hospital A & E department to treat patients attending with minor illness or injury seems to be a cost-effective method of substituting primary for secondary care resources. Interventions that addressed both sides of the primary-secondary interface and recognised the importance of patient preferences in the largely demand-driven emergency service were more likely to succeed in complementing rather than duplicating existing services. The evidence on other interventions such as telephone triage, minor injuries units and general practitioner out of hours cooperatives was sparse despite the fact that these interventions are growing rapidly in the UK. The authors

conclude that the review findings clearly demonstrate that shifting the balance of care is possible.

- Health assessments. This review identified 21 randomised controlled trials. The reviewer concludes that health assessments have been associated with improved health outcomes for older people, but an evidence base for specific components to be included in the assessments is yet to be derived.
- Post-acute care. This literature review of 24 studies concludes that post-acute care models that adhere to the 10 principles of post acute care should be implemented nationally.
- Home-based support programs. The review identified 15 studies. Home visiting was associated with a significant reduction in admissions to long-term institutional care in members of the general elderly population. Meta-analysis of six studies of home visiting to members of the general elderly population showed no significant reduction in admissions to hospital. The reviewers conclude that home visits to older people can reduce mortality and admission to long-term institutional care.
- Preventive programs for elderly people. This review identified 20 randomised controlled trials. The reviewers concluded that a potential for cost savings and improved health outcomes has been demonstrated, but that due to methodological problems the over-all benefit of preventive programs is unclear.
- Alternatives to acute hospital care. The paper reviewed 21 studies. The authors conclude that apparent substitutes for hospital care increase overall demand for services with little impact on overall hospitalisation or costs, and that inappropriate hospital admissions would not necessarily be dealt with in primary care settings in a more cost-effective manner.
- Supported discharge. The review identified nine randomised controlled trials. The proportion of those at home 6-12 months after admission was greater with supported discharge. This was associated with a consistent pattern of reduction in admission to long-stay care over the same period, without apparent increases in mortality. There was uncertainty about the effect of supported discharge on hospitalisation. There were no rigorous research data on functional status, patient and carer satisfaction, and, in consequence, uncertainty about the overall effectiveness of supported discharge. The authors conclude that the results of this review provide reassurance that supporting discharge from hospital to home is of value. However, important sources of uncertainty remain, suggesting the need for further research.
- Intermediate models of care. The authors conclude that partnerships between organisations facilitate effective models of intermediate care.
- Reasons for inappropriate presentation at hospitals. The literature under review looked at various aspects of inappropriate attendance at A&E, including what actually constitutes inappropriate attendance, who is responsible for misuse of A&E, and why A&E is so often abused. Suggestions are offered that the role of A&E is more diverse than simply a receiving station for sudden injury or illness and that there are quite pertinent reasons why people choose to attend A&E rather than their own GP's surgery.
- Emergency department case finding and liaison interventions. This paper reviews 18 studies. The authors conclude that although further evidence is desirable on the cost-effectiveness of ED-based case finding and liaison interventions for older people, there is sufficient evidence for the implementation of theses interventions in terms of patient outcomes.

Randomised controlled trial

Participants are randomly allocated to groups either for the intervention or treatment being studies or control/placebo using a random mechanism and the outcomes are compared.

- 1 study examined case management and care planning
- 2 studies examined the costs of hospital in the home compared to hospital care
- 1 study compared home and hospital as sites for stroke rehabilitation
- 1 study examined hospital in the home
- 2 studies examined the efficacy of an early assessment and referral program for elderly people at risk of becoming frail
- 2 studies examined the efficacy of pharmaceutical interventions targeting specific health conditions
- 1 study examined the safety and efficacy of an after hours telephone consultation service

- 1 study examined the cost-effectiveness of a clinical observation unit (patient outcomes not assessed)
- 1 study examined the effect of a general practitioner in the emergency department
- 1 study examined the appropriateness of cardiac surgery as an explanatory factor in hospital admission variation rates
- 1 study examined the efficacy of a readmission prevention program for cardiac patients
- 1 study examined the efficacy of a fall prevention program
- 1 study cited in a literature review examined the efficacy of a post discharge program to high readmission risk patients
- 1 study examined the efficacy of comprehensive geriatric assessment

Pseudo-randomised controlled trial

Participants are allocated to groups for intervention / treatment or control / placebo using a non-random method, and the outcomes are compared.

- 1 study examined the effectiveness of providing doctors with feedback about the level of avoidable hospital admissions

Clustered randomised trial

Participants are randomised to intervention or control in groups (for example, families).

- No studies identified

Concurrent control or cohort

Outcomes are compared for a group receiving the treatment / intervention being studied, concurrently with control participants receiving the comparison treatment / intervention (usual or no care)

- 1 study examined the cost-effectiveness of a post-discharge program of care
- 1 study examined the efficacy of a program which made, services usually only available in acute settings, available to general practitioners
- 1 study examined the efficacy (with a particular focus on cost-effectiveness) of making primary care services available in the emergency department
- 1 study examined the efficacy of a program of enhanced primary care to 'at risk' elderly people
- 1 study examined the efficacy of quality control interventions on reducing inappropriate hospital use
- 1 study examined the efficacy of an influenza vaccination

Case control

Participants with the outcome or disease and an appropriate group of controls without the outcome or disease are selected and information is obtained about the previous exposure to the treatment or intervention or other factor being studied.

- No studies identified

Historical control

Outcomes for a prospectively collected group of subjects exposed to the new treatment/ intervention are compared with either a previously published series or previously treated participants at the same institutions.

- 1 study examined the effect of a physician assistant on the hospitalisation of nursing home residents

- 1 study examined the cost-effectiveness of a pneumococcal vaccine for residential nursing facility residents
- 1 study examined the efficacy of a early discharge post-acute care program
- 1 study examined the efficacy of a geriatric assessment facility in the emergency department
- 1 study examined the efficacy of a program which diverted inappropriate presentations away from the emergency department
- 2 studies examined the efficacy of an admission avoidance team or a quick response service
- 1 study examined the efficacy of a home care program based on geriatric assessment and case management

Interrupted time series

Trends in the outcome or disease are compared over multiple time points before and after the introduction of the treatment/intervention or other factor being studied.

- No studies identified

Case series pre-test / post-test

A single group of participants are exposed to the treatment/intervention. Outcomes are measured in the participants before and after exposure to the treatment or intervention for comparison.

- 1 study examined post discharge admission rates in the elderly
- 1 study examined the efficacy of a pharmaceutical intervention
- 1 study examined health outcomes for elderly people discharged from the emergency department

Case series post-test

A single group of participants are exposed to the treatment/intervention. Only outcomes after the intervention are recorded in the case series, so no comparisons can be made.

- 1 study examined the efficacy of short stay wards, day surgery and fast track facilities in hospitals
- 1 study examined the efficacy of a facilitator in the emergency department
- 2 studies examined the efficacy of a Quick Response Service or admission avoidance team
- 1 study examined the utility of a community liaison pharmacist
- 1 study examined the role of promoting community health
- 1 study evaluated domiciliary services

Descriptive

A paper that describes a small section of the literature, or an untested idea for study.

- 1 study outlined the possible role of a case manager in the emergency department
- 1 study described the opinions of health professionals about the appropriateness of certain admissions
- 1 study examined the range of services that could be made available in the hospital
- 1 study described a system of advanced directives
- 1 study described intermediate care models

Pilot

A study in which a new survey, protocol or questionnaire is validated.

- 9 studies piloted protocols seeking to reduce admission

Identifying and quantifying the problem

Definitions

The extent of unnecessary and avoidable hospital admissions in the elderly is difficult to assess. The research in this area is plagued by methodological difficulties. In particular, the literature uses unsystematic measurements of 'avoidable' and 'unnecessary', primarily arising from the manner in which these key terms are defined. The literature in this area is characterised by a failure to define explicitly what an avoidable or inappropriate hospital admission is. In many instances, definitions can at best be inferred from the paper. Papers that do attempt explicitly to define avoidable or inappropriate hospital admissions do so in a variable, vague and broad manner. Furthermore, the terms *unnecessary* and *avoidable* are often confused. To illustrate this problem, a selection of definitions of avoidable hospital admission drawn from the literature includes the following:

Dempsey (2000) offers a general definition that is characteristic of the literature. Avoidable hospital admissions include:

- *Inappropriate hospitalisations.* Inappropriate hospitalisations occur when a practitioner uses a poor decision-making model and admits a patient who should be sent home.
- *Avoidable hospitalisations.* Avoidable hospitalisations are those that could be avoided if alternative models of care were available.

Weisser *et al* (1997) identify three types of avoidable hospital admissions.

- *Hospitalisation for death.* Hospitalisation for death occurs when palliative care facilities are not available in the home.
- *Nursing home admission via the hospital.* This type of hospitalisation occurs when an elderly person requires placement in a residential aged care facility after a health crisis. The transition is often preceded by a stay in hospital from acute onset of the health condition.
- *Hospitalisation for evaluation.* Hospitalisation for evaluation occurs when a health care professional (usually a GP) needs one of their patients monitored.

Jackson and Tobias (2001) also suggest three types of avoidable hospital admissions.

- *Preventable hospitalisations.* Preventable hospitalisations are those that result from diseases that may be prevented by population-based interventions (for example, a reduction in nicotine related diseases through media and legislative interventions).
- *Ambulatory care sensitive hospitalisations.* Ambulatory care sensitive hospitalisations are hospitalisations resulting from diseases that may be prevented if ongoing interventions are delivered in primary healthcare settings (for example, vaccine preventable diseases constitute a portion of ambulatory care sensitive hospitalisations).
- *Hospitalisations avoidable through injury prevention.* Hospitalisations that are potentially avoidable through interventions designed to increase personal safety levels (for example, fall management interventions that reduce the number of elderly patients presenting at hospitals with fractures).

The absence of a universal and specific definition of the terms 'unnecessary' and 'avoidable' has an effect on the quality of the available quantitative data about hospital admissions. That is, the data definitions are highly variable and have questionable validity. For the purposes of this literature review, we shall use the following definitions:

Unnecessary hospital admission

An unnecessary hospital admission is an admission of a person to hospital even though their condition does not warrant admission.

Inappropriate hospital admission

While there is no generally agreed definition, an inappropriate hospital admission usually means an admission made for inadequate or mistaken reasons.

Avoidable hospital admission.

An avoidable hospital admission is an admission that could have been avoided through interventions aimed at the primary care and ambulatory care level. Avoidable hospital admissions include unnecessary or inappropriate hospital admissions.

Planned admission to hospital

A planned admission to hospital is an admission for investigations or treatment not available outside the hospital setting.

Unplanned admission to hospital

An unplanned admission to hospital is an admission for a level of care not available outside the hospital setting, usually following an acute worsening or onset of a condition.

The distinction between 'planned' and 'unplanned' is largely ignored in the scope of the literature, which focuses primarily on unplanned admissions to hospital. A very small number of articles deal with planned admissions. These are generally studies that have evaluated interventions to increase primary caregivers' access to acute treatment options. Accordingly, the information in this review will focus largely on unplanned admissions.

Hospital statistics on potentially preventable hospitalisation

Table 2 presents statistics available on inappropriate hospital admissions, complicated by the lack of operational definitions in the literature. Specifically, many studies asked practitioners to evaluate the appropriateness of an admission, assuming that adequate alternatives for health care were available (Inglis *et al*, 1995). It may be that some elderly people are admitted to hospital because adequate facilities for their care are *not* available in the community.

Table 2. An overview of the available statistics

Study	Country	Target population	Type of admission	% deemed avoidable
Dempsey (2000)	NSW, Australia	General (N=521)	General	19%
Department of Human Services (2001)	Victoria, Australia	General	'Walk ins', Emergency Department	84%
Roughead (1999)	Australia	General	Drug Related	32-69%
Roughead, Gilbert *et al* (1998)	Australia	Elderly	Drug related	Reviewed four studies; 7-11%
Chan, Nicklason & Vial (2001)	Tasmania, Australia	Elderly	Acute	15% of all acute admissions were avoidable drug admissions
Jackson & Tobias (2000)	New Zealand	Elderly (65–74)	General	61%
Hider (1998)	New Zealand	General	Acute	12%
Runciman, Roughead, Semple & Adams (2003)	Australia	Elderly (75+)	Adverse drug events	30%
Eagle, Rideout, Price, McCann & Wonnacott (1993)	Canada	Elderly (65+)	'Walk ins' Emergency Department	3%
Denman-Johnson, Bingham & George (1997)	UK	General	'Walk ins' Emergency Department	9.5%
Sanderson & Dixon (2000)	UK	General	Ambulatory Care Sensitive	70%

			Conditions	
Pappas, Hadden, Kozak & Fisher (1997)	United States	Elderly	General	6% of all avoidable admissions
Dwyer & Jackson (2001)	Extrapolate a number of international studies to the Australian context.	General	General	15%
Finucane, Wundke, Whitehead, Williamson & Baggoley (2000) cited in Dywer & Jackson (2001)	Australia	Elderly	Nursing Home Admissions	10%
Beringer & Flanagan (1999) cited in Dywer & Jackson (2001)	Australia (Victoria)	Elderly	Nursing Home Admissions	10%
Stewart, Pearson, Horowitz (1998)	Australia	General	Re-admission	18%
Ansari, Carson *et al* (2002)	Australia, Victoria	General	Ambulatory Care Sensitive Conditions	42%
Coast, Peters & Inglis (1996b).	UK	Elderly	General and geriatric care	20%
Coast, Inglis & Frankel (1996a)	UK	General	General	GP estimate: 8-14% Consultant estimate: 5.5-9%
Fellin, Apolone, Tampieri, Bevilacqua, Meregalli, Minella & Liberati (1995)	Italy	Elderly	Reviewed four studies: selected ward studies or general admissions	21-36%
Santos-Eggimann & Blanc (1995)	Switzerland	General	General	3.7-6.4%
Restuccia, Shwartz, Ash & Payne (1996)	United States	Elderly	General	12.4%
Young, Wagner *et al* (1996)	United States	General	Ambulatory Care Sensitive Conditions presenting at the emergency department.	5%

Ambulatory care sensitive conditions

Ansari, Carson *et al* (2002) conducted a study that sought to track avoidable admissions for ambulatory care sensitive conditions in Victoria. They defined an avoidable admission as an admission thought to be avoidable if preventive care and early disease management had been applied (see also Department of Human Services 2002).

Based on these definitions, the Australian Institute of Health and Welfare has published a national attempt to track avoidable hospital admissions. We requested that AIHW extract statistics for the number of hospital separations, separations not within the state of residence, the separation rate, the standardised separation ratio and the 95% interval for the ratio for each condition, for all ages; and a

second version of this data for the 65+ age group on a state by state and national basis (data for the Northern Territory and for the Australian Capital Territory was not available). Table 3 combines the two sets of data, in order to compare the total number of avoidable admissions for each condition for those aged 65 and over with the total number of admissions for all age groups.

The *separation rate* refers to the number of separations per 1000 head of population, for that age group.

The *standardised separation rate ratio* is the ratio of the state separation rate and the national separation rate. Where the ratio is less than one, the state has a lower separation rate than the national rate.

The *confidence interval* represents the range of values that the actual rate is likely to be in. Where the range incorporates values less than one, there is a 95% probability that the state has a significantly lower rate of separation than the national average. If the rate is less than one, but the confidence interval incorporates a value of one or more, there is a chance that the actual separation rate is the same as the national average.

The data is purely descriptive. It was collated to track the rate of avoidable admissions across a range of ages and conditions. According to the data, elderly people account for 43.97% of all potentially preventable hospital admissions for ambulatory care sensitive conditions as defined by Ansari *et al*

The proportion attributed by this data to older people varies widely from very small differences for pelvic or ENT infections, appendicitis, dental conditions, and asthma to very large differences for congestive cardiac failure, chronic obstructive pulmonary disease, and angina. The rate for all chronic conditions is calculated as about 60%, and for acute conditions at about 23%.

There is currently no consensus on what level of preventable hospital admissions in the elderly constitutes a problem. According to the Australian Bureau of Statistics, people 65 and over represented 12% of the Australian population in 2001. That is, 12% of the total population account for 44% of potentially avoidable hospital admissions for ambulatory care sensitive conditions. Elderly people suffer more illness and frailty than younger people, and require hospitalisation more often than younger people. A justified decision needs to be made about an unacceptable level of avoidable hospital admissions in the elderly in order to attach meaning to the current data.

However, AIHW has chosen Ansari's definition as the basis for this collection because it is virtually the only available attempt to develop a rigorous measure of reasons why older people are admitted to hospital. It must therefore be noted that the data encompasses only ambulatory care sensitive conditions, and does not address a range of other potentially avoidable reasons for admission described in the literature and of concern to informants – for example, admissions following injuries, falls, mental health problems, drug interactions, and the like.

The extent and nature of admissions that could be amenable to prevention or early intervention efforts are therefore underestimated by this data.

Table 3: Separation statistics for potentially preventable hospitalisations, by state or territory, patients 65 years and over and all age groups, all hospitals, 2001–02

	NSW	Vic	Qld	WA	SA	Tas	Total(b)	% of all admissions attributable to the elderly
Vaccine-preventable conditions								
Influenza and pneumonia								
Separations(c) – 65+	1,906	1,260	982	557	445	175	5,394	41.50%
Separations – all ages							12995	
Other vaccine-preventable conditions								
Separations(c) – 65+	228	101	66	36	47	5	492	13.78%
Separations – all ages							3570	
Total vaccine-preventable conditions								
Separations(c) – 65+	2,133	1,360	1,048	593	492	180	5,884	
Separations[(c)]- all ages	5,816	3,222	3,157	2,001	1,457	378	16,545	35.56%
Chronic conditions								
Asthma								
Separations(c) – 65+	1,398	1,153	732	349	448	77	4,196	10.25%
Separations[(c – all ages)]	14,302	9,376	6,814	4,227	4,775	655	40918	
Congestive cardiac failure								
Separations(c) – 65+	12,810	10,686	6,651	2,993	3,574	863	37,954	87.18%
Separations[(c – all ages)]	14,665	11,902	7,797	3,514	4,026	971	43534	
Diabetes complications								
Separations(c) – 65+	23,510	29,532	13,366	7,739	7,138	2,883	85,444	59.75%
Separations[(c)]– all ages	37,283	44,081	25,243	15,281	11,653	6,283	142992	
Chronic obstructive pulmonary disease								
Separations(c) – 65+	14,721	10,111	7,778	3,637	3,584	1,104	41,479	75.61%
Separations[(c)] - all ages	19,408	12,850	10,619	4,707	4,710	1,504	54856	
Angina								
Separations(c) – 65+	10,771	8,326	6,751	2,311	2,663	868	32,075	
Separations[(c)] – all ages	17,051	12,254	11,132	3,451	3,777	1,327	49878	64.30%

Iron deficiency anaemia								
Separations(c) – 65+	2,543	2,872	1,359	962	689	225	8,771	
Separations – all ages							16456	55.34%
Hypertension								
Separations(c) – 65+	1,408	777	691	287	293	104	3,580	55.34%
Separations[(c)] – all ages	2,441	1,406	1,351	516	540	158	6469	
Nutritional deficiencies								
Separations(c) – 65+	9	17	11	4	n.p.	3	47	
Separations – all ages							123	38.21%
Total chronic conditions								
Separations(c) – 65+	64,711	60,411	36,058	17,606	17,741	5,922	205,094	
Separations[(c – all ages)]	106,247	93,262	63,813	32,747	29,934	11,034	343649	59.68%
Acute conditions								
Dehydration and gastroenteritis								
Separations(c) – 65+	4,165	3,494	2,751	1,053	1,184	322	13,092	34.79%
Separations[(c)] – all ages	11,758	9,760	8,277	3,443	3,111	865	37 654	
Pyelonephritis								
Separations(c) – 65+	5,803	4,640	3,432	1,537	1,577	260	17,436	
Separations – all ages							36018	48.40%
Perforated/bleeding ulcer								
Separations(c) – 65+	1,207	1,051	579	450	384	87	3,808	
Separations – all ages							5779	65.89%
Cellulitis								
Separations(c) – 65+	3,717	2,624	1,868	719	792	202	10,033	
Separations[(c)] - all ages	9,451	6,667	5,798	2,416	1,959	572	27,674	36.25%
Pelvic inflammatory disease								
Separations(c) – 65+	42	40	30	17	n.p.	7	155	
Separations – all ages							6591	2.35%
Ear, nose and throat infections								
Separations(c) – 65+	608	422	391	181	234	43	1,899	
Separations[(c)] – all ages	10,634	6,653	6,829	3,550	3,046	563	31 995	5.93%

Dental conditions								
Separations(c) – 65+	1,004	866	558	344	389	77	3,288	
Separations[(c)] – all ages	10,725	12,223	9,102	5,623	3,831	771	40,039	8.21%
Appendicitis								
Separations(c) – 65+	349	277	225	76	85	27	1,055	
Separations – all ages							23817	4.42%
Convulsions and epilepsy								
Separations(c) – 65+	1,483	1,206	702	413	322	100	4,289	
Separations[(c)] – all ages	11,146	7,298	5,901	2,778	2,153	759	30 963	13.85%
Gangrene								
Separations(c) – 65+	898	897	447	207	204	105	2,781	
Separations – all ages							4409	63.07%
Total acute conditions								
Separations(c) – 65+	19,251	15,487	10,968	4,991	5,183	1,230	57,754	
Separations[(c)] – all ages	78,585	61,719	51,211	25,519	20,071	5,194	247732	23.31%
Total potentially preventable conditions								
Separations(c) – 65+	84,639	75,874	47,290	22,786	23,061	7,223	264,177	
Separations[(c)] – all ages	188,348	156,295	116,847	59,567	50,942	16,397	600,759	43.97%

(a) These conditions are defined using ICD-10-AM codes.

(b) Excludes non-residents and Unknown state of residence.

(c) Excludes multiple procedures and diagnoses for the same separation within the same group.

(d) Rate per 1,000 population was directly age-standardised to the Australian population at 30 June 2001 using December 2001 population estimates as divisors.

Scope and nature of the literature

The scope, context and population of interest in the available literature impose some limitations on generalising the results. Many of the available studies have a very specific focus, examining just one type of admission (for example, presentation and admission through the emergency department). Few studies examine admissions in an Australian setting. Finally, the elderly are rarely the population of interest, or are part of the population of interest in the studies.

Key points to note from this literature

- Work done in the 1980s led to a contention, widely accepted in the literature throughout the 1990s, that elderly people were more likely than other age groups to present inappropriately at emergency departments. For example, a number of studies at that time found that elderly people presented to the emergency department with non-urgent somatic symptoms that often reflected psychiatric disorders or social need (McCoy *et al*, 1992). It is likely that this earlier research was affected by misdiagnosis. Recent research shows that elderly patients do not misuse emergency departments in hospitals (Eagle *et al*, 1993, Sempere Selva *et al*, 2001, Stathers *et al*, 1992).
- Phelps and Shepperdson (1998) found that hospital workers believed elderly patients were often admitted to hospital for social reasons. However, data from actual elderly admissions found that elderly patients were in fact admitted for health reasons, not social reasons. According to the authors, such admissions are a result of poor health care practices, rather than indicating a social care problem. Similarly, in one study, younger patients presenting at emergency departments were 2½ times more likely to present with symptoms that were a primary care issue (Eagle *et al*, 1993). This is supported by the results of Oates *et al* (1997) who found that although elderly people constitute a significant category of emergency department users, they were more strongly represented in the urgent patient categories than younger patients. (Eagle *et al*, 1993) found that hospital workers overestimated the number of elderly patients that present at hospitals. They felt they spent a disproportionate amount of time caring for elderly patients, and their conditions often did not warrant presentation or admission to hospital, but were often admitted for social rather than medical reasons**.** However, Phelps and Shepperdson (1998) say quantitative data does not support these anecdotal reports, which may indicate a level of age discrimination that needs to be addressed. In fact, the elderly often prefer to receive home care, rather than be admitted to hospital (Dwyer and Jackson, 2001, British Journal of Nursing, 2002).People who repeatedly present at the emergency department do so because they are sicker (Hansagi *et al*, 2001).
- Elderly people are four times more likely to be hospitalised than younger age groups, and occupy hospital beds for longer periods of time (O'Grady *et al*, 1996, Varghese and Cumming, 2002). However, this hospitalisation is not inappropriate when no other facilities are available to meet their care needs, or because premature transfer to residential care would result in failed opportunities for the patient to recover from acute illness.
- A large proportion of avoidable hospital admissions in the elderly is admissions of patients awaiting suitable accommodation, or awaiting a referral to suitable accommodation (Hardy *et al* 2001; Department of Human Services 2001; Whitehead *et al* 2001).

There is a notion in the health care industry that increasing demand on hospital services is linked to an increasingly inappropriate use of hospital services. This causal link is not necessarily real. Areas that have high rates of hospital admissions do not have a higher percentage of inappropriate admissions. The percentage of admissions classified as inappropriate does not change significantly with the number of admissions (Restuccia *et al*, 1996, Gertman and Restuccia, 1981). In fact, the rate often varies according to funding incentives (Paldi *et al*, 1995). Gertman and Restuccia (1981) demonstrated that an increase in the overall percentage of inappropriate hospital use can be associated with either an increase or a decrease in overall hospital demand, with differing effects on cost control and cost efficiency. In order to design successful interventions, it is therefore necessary simultaneously to examine absolute utilisation rates and appropriate utilisation rates. It should also be noted that hospital utilisation rates are plagued by methodological difficulties that make it difficult to ascertain the rate of inappropriate admission (Ash, 1995).

Factors in unnecessary and avoidable hospital admissions of the elderly

By definition, research into the causes of unnecessary and avoidable hospital admissions must occur in the field. As such, existing research lacks scientific rigor in terms of establishing causal pathways. The primary focus of the literature is atheoretical intervention trials. In these studies, the success of the intervention suggests a cause.

A number of the causes that appear below have been inferred from studies that outline successful interventions. Other studies use correlation and regression to identify predictors of unnecessary and avoidable hospital admissions. Thus, while the factors listed below are well established in the literature as associated with unnecessary or avoidable hospital admission, they cannot be identified as causes without further research.

According to the definition of an avoidable hospital admission we have adopted for this review, an avoidable hospital admission implies the presence of a manageable and sometimes ongoing condition. Condition management occurs at four levels - prevention, primary care, ambulatory care and hospital care (Anderson *et al*, 2001).

Preventive measures reduce the risk of the condition's occurrence. If the condition does occur, successful management of the condition at the level of primary care stops it from escalating to the point where ambulatory care is required. In turn, successful management of the condition at this level stops acute admission to hospital care. Following discharge from hospital, appropriate management at the ambulatory and primary care levels, decreases the likelihood of re-admission.

Thus four broad categories of causes of avoidable hospital admissions emerge:

Distal predictors:

A. Socio-economic factors
B. Poor management of risk factors

Proximal predictors:

C. Reduced access to quality primary care
D. Ambulatory care

A: Socio-economic factors

Low income

According to Australian Bureau of Statistics, the majority of the elderly population are low income earners. This statistic reflects their low rate of participation in the labour force and their reliance on government pensions. It is likely that elderly low income earners have restricted access to primary care, as they are dependent on bulk billing facilities. Accordingly, low income rates are associated with an increased presentation at hospitals, and admission to hospital for non-acute or potentially avoidable conditions (DeCoster *et al*, 1999, Hull *et al*, 1997).

Decreasing social networks

The number of primary carers available to elderly people from their family is decreasing and constitutes a risk factor for avoidable admissions. Similarly, elderly people generally have reduced social networks, often living alone (Department of Human Services 2001). For example, in one study, being an elderly pensioner was a significant predictor of attendance at the emergency department (Hull *et al*, 1997). Living alone is generally associated with decreased access to transport, reducing access to primary care practices. Individuals living alone often fail to seek help for health problems until they have escalated to the point where primary care cannot manage the condition (Department of Human Services 2001). Decreasing social networks are a distal predictor of avoidable hospital admissions.

Elderly victims of family violence

A growing body of literature points to domestic violence as a cause of repeat presentation and admission to hospital in the elderly (Lachs *et al*, 1997). This statistic is higher than in the general

population because elderly people tend to be frailer, and the effects of physical abuse are more serious.

Functional illiteracy and health literacy

About 44% of the elderly population are functionally illiterate (Baker *et al*, 2002). Such individuals have difficulty reading and comprehending prose and documents and performing basic numerical functions (Miller and Siggins, 2003). Health literacy has been defined as "a constellation of skills, including the ability to perform basic reading and numerical tasks required to function in the health care environment. Patients with adequate health literacy can read, understand, and act on health care information" (AMA US, 1999). The AMA (US) report says:

"An individual's functional health literacy - the ability to read and comprehend prescription bottles, appointment slips, and other essential health related materials required to successfully function as a patient - may be significantly worse than their general literacy, because functional literacy is context specific. That is, an individual may be able to read and understand materials with familiar content, but struggles to comprehend materials written at the same level of complexity if that material contains unfamiliar vocabulary and concepts".

The impact of health literacy on the number of avoidable hospital admissions and inappropriate presentations at hospital is noted in the literature (Baker *et al*, 1998, Baker *et al*, 2002, Lau *et al*, 1997). Baker *et al* (1998) concluded that patients' reading ability was "independently associated with their risk of hospitalisation". Importantly, inadequate health literacy is more than just a reading problem, and manifests itself in both oral and written communication. Misinterpreting complex sentences or sophisticated vocabulary can impair understanding and acting on oral instructions given in the medical context. "Inadequate health literacy may be a marker for a complicated array of problems with provider-patient communication, and health behaviours that affect the risk of hospital admission, but are not directly related to reading ability."

Aboriginal elderly people

The elderly Aboriginal population is significantly more likely to be admitted to hospital for primary preventable conditions than white Australians of the same age (Ishak, 2001). Their ill health may be attributed to a range of factors, including reduced access to primary care and deprived socio-economic status. Ishak (2001) believes the appropriate intervention would be to provide adequate primary health programs, rather than targeting hospitals.

B: Risk management

Preventable predisposing conditions

Malnutrition: Up to 55% of the elderly population (65+) may be suffering from malnutrition (Milne *et al*, 2003). Malnutrition is associated with a broad range of physiological conditions including impaired immune response, impaired muscle and respiratory function, delayed recovery times and an increased risk for complications. Psychologically, malnutrition predisposes individuals to apathy and depression (Milne *et al*, 2003). This general, but preventable decline in the health of elderly people acts as a distal predictor of avoidable hospitalisations.

Exercise: Regular exercise is known to reduce the risk of coronary heart disease, stroke, diabetes, fractures and mental disorders (Munro *et al*, 1997). Failure to promote regular exercise to the elderly population contributes to an increased incidence in a number of physiological and psychological conditions, contributing to avoidable hospital admissions.

Tobacco (US Department of Health and Human Services, 1990): Tobacco smoking is estimated to kill approximately half its long-term users and is the leading preventable cause of morbidity and premature mortality, particularly from cardiovascular disease, cancer and chronic obstructive pulmonary disease. Whilst there is an inverse relationship between age group and smoking prevalence rates, this is likely to be a reflection of the premature deaths of smokers as well as a decrease in the propensity to smoke by older people.

Older smokers may be less motivated to quit. Highly motivated individuals are likely to quit at a younger age. Thus older smokers are likely to represent a group of smokers whose addiction levels are high. In addition, many older smokes have misconceptions about the benefits of quitting. Some believe that they are no longer at risk of smoking related diseases because they have already survived smoking for many years. Others believe that any damage that may have been caused by smoking is irreversible after decades of smoking. These misconceptions are shared by some doctors, who may as a result be less concerned about elderly patients' smoking, and less likely to counsel older patients to quit. Tobacco use represents a clear cause of avoidable hospital admissions in the elderly.

Elderly risk management

Complex health needs: The health care needs of the elderly are more complex than those of other age groups. In particular, elderly patients have high rates of chronic conditions and complex comorbidities, for example, poor mobility or depression (Department of Human Services 2001). The current failure to provide an appropriate level of primary and intermediate care, targeted to the specific needs of the elderly, is contributing to a reliance on the hospital system by this section of the population.

Falls: About 30% of the elderly community fall each year. Over 10% of these require medical attention (Gillespie *et al*, 2003). A host of individual and environmental risk factors contribute to the incidence of falls in the elderly. Individual risk factors include insufficient exercise and maintenance of strength, impaired balance and gait, deterioration of vision, medication use and misuse, chronic medical conditions, impaired cognition and a prior history of falling. Environmental risk factors include uneven, slippery or loose floor surfaces, inadequate lighting, poor step and stairway design, unsecured floor coverings and rugs (Commonwealth Department of Health and Aged Care, 2000, NSW Health, 2001) Falls represent a cause of avoidable hospital admissions in the elderly because the provision of timely interventions could reduce the incidence of falls. However, the few predisposing risk factors (medication, environmental and physiological) require individualised assessment and thus individualised intervention programs (McIntyre, 1999). Elderly people who fall frequently report a reduction in activity levels and social isolation (Mackenzie *et al* 2002). Thus a falls act as both a primary cause and a secondary cause of avoidable hospital admissions, by contributing to other risk factors.

C: Access to quality primary care

Lack of access to effective primary care is one cause of avoidable hospital admissions. Where effective primary care is available, conditions are less likely to escalate to the point where admission to hospital is necessary. Similarly, access to primary care reduces unnecessary presentations to hospitals and in turn, unnecessary admissions to hospital. A number of sites where there is a deficiency in the availability of primary care have been identified in the literature:

Residential Aged Care Facilities.

Carers at Residential Aged Care Facilities (RACFs) often lack 24-hour access to general practitioners. This increases avoidable hospital admissions by a number of pathways.

- Failure to provide an appropriate level of primary care means that conditions escalate to the point where secondary care is required. A range of disincentives discourage the GP from visiting RACFs, including unsatisfactory levels of remuneration, poor management of facilities, and extra administrative duties (AMA, 2002). One successful intervention reduced avoidable hospital admissions by increasing the availability of general practitioners and secondary care providers (gerontologist physician assistants). The nursing home was thus able to provide a comprehensive level of medical care to their patients, reducing admissions to hospital (Ackermann and Kemle, 1998).
- RACFs without a GP on staff generally supplement primary care by referring to a number of GP practices. These practices are often overloaded and cannot provide services in a timely manner. In most cases, locums handle after-hours calls. The result is that many patients are referred on to secondary care providers (Bowman *et al*, 2001).

- Staff at RACFs lack the confidence or knowledge to make appropriate decisions about transferring patients to hospitals. Typically, inappropriate admissions from nursing homes arise out of erroneous judgments about the quality of care available to the patient in the nursing home, the availability of certain services in the hospital and the severity of the condition (Saliba *et al*, 2000). As a result, patients may be transferred to the hospital inappropriately, resulting in increased rates of avoidable or unnecessary admissions (Department of Human Services 2001).

Even though some elderly people are more reluctant to enter residential aged care facilities, and even though there is an oversupply of RACF beds in some areas of Australia, in other areas there is still an undersupply of places (Department of Human Services 2001). This can mean that some people do not have an adequate level of care to manage their conditions, leading to escalation and otherwise avoidable hospital admissions.

General Practitioner facilities

As the percentage of the population classified as elderly continues to climb, the number of GPs *per capita* for older people declines. GPs are also less willing to make home visits, and are working shorter hours (Department of Human Services, 2001b). Reduced flexibility of GP services reduces access to care for homebound elderly patients. Together, these influences on primary care services contribute to the volume of both unnecessary and avoidable presentations to hospitals, and potentially to inappropriate admissions.

Again, Medicare reimburses practitioners by occasions of service. This can motivate doctors to have shorter consultations. However, shorter consultations are often inappropriate for elderly patients, as they typically have complex health needs and need longer attention. The introduction to the MBS of the Enhanced Patient Care items attempts to address this issue by providing incentives for GPs to spend more time with elderly patients and contribute to planning and coordination of their care, but it remains to be seen whether GPs are using them to achieve their intended purposes.

Absence of a relationship with a regular doctor correlates with use of the emergency department for some non-urgent conditions (Porath *et al*, 1996, Sarver *et al*, 2002). A portion of those presenting in this way will be admitted in error. Similarly, elderly patients living in an area where there is a shortage of healthcare professionals are more likely to be admitted to hospital for an ambulatory care sensitive condition than elderly patients living in other areas (Parchman and Culler, 1999). Access to quality primary health care prevents escalation to the point where hospitalisation is required.

Undiagnosed mental health problems represent a cause of avoidable hospital admissions. GPs who diagnose more mental health problems, especially depression and anxiety, typically have lower costs and fewer avoidable admissions than GPs who diagnose fewer mental disorders (Campbell *et al*, 2000). Undiagnosed depression also contributes to an increased length in hospital stay (Ingold *et al* 2000). Mental disorders are typically associated with a range of physical symptoms. These may prompt the GP to refer to a secondary care setting in order to find the cause of the symptoms. Mental disorders and their associated physical symptoms are typically treated in primary care or allied health care settings. GPs who recognise and diagnose mental health problems and associated physical symptoms record fewer hospitalisations (Campbell *et al*, 2000).

Rural areas

Research presented in the Victorian Ambulatory Care Sensitive Conditions Study suggests that patients from a rural area are more likely to be admitted to hospital with conditions that could have been avoided if the appropriate ambulatory care was available (Ansari *et al*, 2002). This finding implies that rural areas lack an appropriate level of primary care facilities.

Self-rated access to care

A Californian study found that individuals living in areas where residents had difficulty accessing primary care had higher rates of hospitalisation for chronic conditions (Bindman *et al*, 1995). The

authors found that the relationship held even after they controlled for differences in demographics, income, the prevalence of study conditions, the propensity to seek care and physician admitting practice styles. This finding is supported by the results of Parchman and Culler (1994), who found that hospitalisation for ambulatory care sensitive conditions were higher in areas in which there were fewer primary care practitioners. Reduced access to primary care also affects an individuals likelihood of presenting inappropriately at the emergency department – a significant proportion of avoidable admissions come from here (Padgett and Brodsky, 1992, Petersen *et al*, 1998).

D: Ambulatory care sensitive conditions

The incidence of ambulatory care sensitive conditions and hospitalisation for such conditions is increasing (Kozak *et al* 2001). Ambulatory care sensitive conditions represent a major cause of avoidable hospital admissions in the elderly. The rate of hospitalisation for ACSCs decreases in populations with access to ambulatory care for these conditions (Brown *et al*, 2001). Failure to provide access to appropriate ambulatory care for the conditions listed below is a cause of avoidable hospital admissions, because without ongoing care these conditions often escalate to the point where hospitalisation is required. Furthermore, where these conditions coincide with the presence of another risk factor, for example, socio-economic deprivation, the likelihood of presentation and admission into hospital increases.

Angina
Asthma (Becker *et al*, 1993)
Bacterial pneumonia
Cellulitis
Chronic obstructive pulmonary disease
Congestive heart failure (Bowman *et al*, 2001)
Convulsions
Dehydration
Dental conditions
Diabetes (Thompson *et al*, 1993)
Gastroenteritis
Hypertension
Hypoglycaemia
Infections (ear, nose, throat, kidney and urinary tract)
Iron deficiency anaemia
Pelvic inflammatory disease
Tuberculosis
Vaccine preventable or manageable diseases, particularly pneumonia (Baltussen *et al*, 1997) and influenza (Deguichi *et al*, 2000)

Ambulatory care-sensitive conditions may be suitable targets for interventions that target both health care providers and consumers. For example, it has been found that failure to have a personal action plan, avoidance coping and a lower preference for autonomy were significant predictors of hospital admission for asthma related complications (Adams *et al*, 2000).

In 2001, the Victorian Department of Human Services established the Hospital Admission Risk Program (HARP). HARP is a component of the Hospital Demand Management Strategy and focuses on avoiding unnecessary emergency presentations, hospital admissions and readmissions (tertiary prevention) by targeting people who have manifest health need, particularly when their disease is chronic or complex. HARP targets multiple levels of the health care system, and its funded interventions seek to provide:

- Preventive models of care developed collaboratively between acute and community providers, targeting manifest health needs and high users of the public hospital system
- Improved management of at risk patients
- Improved support and self-management
- Improved responsiveness and proactive event management
- Increased health system capacity to respond to needs
- Better continuity of care
- Improved intersectoral cohesion
- Improved system effectiveness and efficiency.

HARP's working parties seek to fulfil these aims for different subpopulations, conditions, or structures (chronic obstructive pulmonary disease, chronic heart failure, community-hospital and GP-hospital interface, integrated care for clients with complex needs, mental health, and technology.) The program has been implemented recently, and the published reports are predominately descriptive. They focus on developing structures and processes around interventions to reduce avoidable admissions for the groups addressed by working parties. Early experience suggests HARP has the potential to reduce demand on hospitals significantly, including avoidable hospital admissions. (Department of Human Services 2003 a-f)

Quality of post-discharge care

Elderly patients are a re-admission risk group. A review of UK, US, and Australian studies suggests that readmission rates for people aged 75 and over are 20% on average (Caplan, 2001). Elderly patients typically suffer from an elevated risk of acute admission, longer recovery rates and higher rates of comorbidity (Au *et al* 2002; (Department of Human Services 2001) - risk factors for re-admission. A proportion of avoidable hospital admissions in the elderly may be attributed to a lack of appropriate follow up at the ambulatory care level.

Presence of other risk factors.

There is an increased risk of admission to hospital for conditions associated with ACSCs for populations of low socio-economic status (Bindman *et al*, 1995, Booth and Hux, 2003). Some authors conclude that this is due to a higher incidence of these conditions in populations suffering from socio-economic deprivation, while others attribute the increased rate of admission to reduced access to primary care. Given that the majority of the elderly population is of low socio-economic status, the presence of socio-economic deprivation and proximal risk factors constitute a likely source of avoidable hospital admissions in the elderly (Crampton and Salmond 2000).

Elderly patients with multiple chronic conditions have higher rates of complication and admission to hospital (Wolff *et al*, 2002). The authors suggest that a significant number of these complications and hospitalisations could have been avoided with adequate care.

Polypharmacology is a risk factor for hospital admission. Elderly people are regular users of approximately three - five prescription medicines at any one time (Andrews *et al*, 2001). Multiple drug use increases the risk of complications, adverse reactions and falls. As frequent users of multiple drugs, the elderly are significantly more likely to be admitted to hospital due to adverse drug reactions than other age groups (Hallas *et al*, 1992). Adverse drug reactions may be due to non-compliance, intended self poisoning, under-dosing and interactions and represents one of the most common types of medical errors (Hallas, 1996, Smeaton *et al*, 2002). For example, one study reviewed linked non-steroidal anti-inflammatory drug use to acute renal failure in elderly persons, a condition that requires hospitalisation (Griffin *et al*, 2000). The authors conclude that this represents a relatively uncommon but avoidable cause of hospitalisation in elderly people. According to a study conducted by Ioannides-Decos (1994), 16.8% of geriatric admissions are drug related, half of which are avoidable**.** Related research conducted by Doucet *et al* (2002) suggests that the majority of adverse drug reactions may be attributable to drug-drug interactions and excess dosages.

Structural causes

A number of successful interventions have targeted one or more of specific causes of avoidable hospital admissions outlined in the preceding section. However, the potential impact is limited in that they only target one level of care. Integration of health care services has the potential to significantly decrease the number of avoidable hospital admissions. At present, there are two major structural causes of avoidable hospital admissions in the elderly.

Fragmented communications networks and the lack of integration among health care providers

It is widely recognised in the literature that a significant contributing factor to the rate of avoidable hospital admissions is the poor quality of the communication networks between the levels of primary care (Department of Human Services 2001).

Patient management breakdown often occurs in the transition between hospital care and community based care because of overstretched services, *ad hoc*, poorly defined, fragmented and inconsistent communication networks among care providers, and the fragmented structure of the primary care network itself.

Lack of integration among health care providers can lead to an inappropriate admission to hospital because patients do not know that certain services are available, cannot access suitable resources, and existing services do not coordinate to meet gaps in the clients' care needs (Rose, 1989). Lack of coordination of community care services also has a negative effect on consumer experience. Patients are often subjected to multiple assessments in which they feel vulnerable and as if they are being judged (Caban, 1993). Integrated care management among hospitals, ambulatory carers, primary carers and government policy bodies can reduce avoidable hospital admissions.

Funding incentives and structural barriers that inhibit coordination

The Victorian Department of Human Services (2001a) considers that differing funding mechanisms present a major barrier to the integration of health care services. Different service sectors have different funding sources (Commonwealth, local government, State government), different accountability structures and different funding models (block funding versus output funding). Block funding can reduce access among primary, intermediate and secondary health care, affecting the quality of care a patient receives. For example, Morrissey, Harris *et al* (1995) found that block funding in the US decreased primary physicians' willingness to order tests, investigations and follow up treatments. Conversely, some funding models may actually provide incentives for hospitals to admit inappropriately (Paldi *et al*, 1995). The Victorian Department of Human Services also recognises that, until a standard patient identification system is developed, funding and performance measures that run across all levels of health care cannot be developed (Department of Human Services 2001a).

Hospital-based causes of unnecessary admissions in the elderly

Poor decision-making

The primary cause within the hospital of unnecessary admissions in the elderly is poor practice. Key factors that may lead to inappropriate decision-making are individual preferences and personal experiences of the practitioner, as well as 'extra-medical' reasons (Dempsey, 2000). Mozes *et al* (1996) identify four reasons why elderly patients may be admitted to hospital erroneously: (a) inadequate assessment of the patient's condition as being of an intermediate risk or requiring observation, (b) incomplete information about the availability of alternative care options, (c) financial or other incentives for decision makers to prefer hospital care, (d) inefficient distribution of facilities and medical staff in the local region. A number of studies have used specialist teams or decision-making tools (for example, the Appropriate Evaluation Protocol) at the point of consultation, and reduced the rate of admission, implying that decision-making at the point of consultation based on inappropriate criteria contributes to unnecessary admissions.

Scope of hospital services

The current scope of services available at hospitals is a secondary cause of unnecessary admissions. A number of successful interventions has reduced the rate of admission by providing additional services at the hospital - for example, on call specialists, or general practice teams (Brazil *et al*, 1998). Patients who present with a condition that requires admission if a service or treatment is not to be provided immediately may be classified as avoidable, for if that service were available, they would not be admitted (Mozes *et al*, 1991). This inefficiency can be targeted if hospitals expand the range services and staff available to meet the demands of consumers (Malone, 1995; Steel, 1995).

Causes of unnecessary and avoidable planned admissions

The few studies that deal with planned admissions to hospital focus on increasing primary care givers' access to acute care facilities. They report interventions that reduced the number of planned admissions to hospital by providing access in the community to investigative and treatment techniques

usually available only in a hospital setting (Aish *et al*, 2003). A cause of planned, but avoidable admission to hospital may be limited access to the facilities or expertise needed to manage patients' conditions effectively outside the hospital.

Consumer experience of unnecessary and avoidable admissions

Very few of the studies we have examined address the consumer experience of unnecessary and avoidable hospital admissions. According to Glasby and Littlechild (2001), patients are often experts in their own conditions. Surveys of patients admitted to hospital allow insight into the events leading up to the admission. Specifically, consumers can often best identify the broad range of social, physiological and economic factors that lead to their admission, and identify which of these could have been affected by a preventive measure (Glasby and Littlechild, 2001).

The few articles that do examine consumer opinions primarily focus on patients' admission to the hospital, usually through the emergency department. Their findings are these.

- Elderly frequent users of emergency departments (Olsson and Hansagi, 2001). Elderly patients generally reported less threat in terms of their condition than younger frequent users of the emergency department. They also reported higher levels of satisfaction with their treatment at emergency departments, contributing to the likelihood that they would use the department again.
- General survey of patients presenting at the emergency department (Davies, 1986). A general survey of patients presenting at the emergency department revealed the reasons for using the department were not wanting to bother their GP; perceiving that the severity of their condition warranted emergency treatment; and regarding the emergency service as more efficient and convenient than their GP service.
- General survey of patients presenting at the emergency department (Gill and Riley, 1996). A general survey of patients presenting at the emergency department revealed that 82% rated their condition as urgent enough to receive emergency attention. Their level of access to primary care did not vary with the rate of presentation. The authors conclude that increasing access to primary health care would not significantly reduce the number of inappropriate presentations to the emergency department.
- Survey of patients enrolled in a program aimed to increase primary options for acute care (Aish *et al*, 2003). Consumers were happy to be treated in alternative care settings, as most wanted to avoid hospital.
- Survey of patients admitted through the emergency department (Littlechild and Glasby, 2001). Elderly people considered a range of options before being admitted to hospital, reporting that they did not want to be a burden on the health care system and occupy hospital beds unnecessarily. In 40% of admissions, the patients were able to identify a range of both long and short-term preventive measures that would have enabled them to avoid an admission to hospital. Most patients identified fragmented service provision as a key barrier to recovery.

Capacity to choose

Advanced health directives provide a means for patients to express their care preferences to their family and health care providers before they lose the capacity to do so (Moya Ruiz *et al*, 2002; Teno, 2000). Many gerontologists advocate an increase in the use of advanced directives as a means of preserving patients' wishes and reducing unnecessary admission rates.

Many elderly people suffer from progressive illnesses that impair their capacity to make decisions about their health care needs. They may be admitted to hospital for treatment and care when they are terminally ill. One successful intervention implemented a system of advance directives in nursing homes. The advance directives were completed either by the patient, or by the patient's guardian where the patient lacked the capacity to complete the directive him- or herself. The patient's charts were flagged with the directives, and the advance directives were updated on a yearly basis. The intervention nursing homes were compared to matched control nursing homes. The intervention nursing homes recorded significantly fewer admissions to hospital without a corresponding effect on mortality (Molloy *et al*, 2000).

This result may suggest that many elderly people who have lost the capacity to express their care choices are being hospitalised, but that this hospitalisation does not improve clinical outcomes.

Successful interventions and critical success factors

A range of interventions aimed at reducing unnecessary and avoidable hospital admissions has been trialed, with varying degrees of success. The interventions can be grouped according to the level of health care where they intervened -at the primary prevention level, the primary care level, the secondary care level, or across multiple health care levels.

Alternative models of care, generally at the secondary care level, will be discussed separately.

Primary prevention

A range of interventions has tried to increase the general health of elderly people and avert the onset of preventable conditions. Harris *et al* (1995) review a number of preventive programs, including health and skills programs, and assessment and intervention in the home or in a clinical setting. They conclude that preventive programs have potential for cost savings and improved health outcomes, but caution that future effort should be guided by the results of the pilot studies that used sound methods.

Vaccination

The elderly population experience vaccine preventable diseases at a higher rate than other cohorts, and these illnesses are more likely to progress to complications that respond poorly to treatment and result in hospitalisation and death (Upshur and Goel, 2000). Older people are susceptible to a number of diseases which may be prevented or managed by vaccination (Ministry of Social Development, 2001). Vaccination programs for both influenza and pneumococcal pneumonia have reduced the rate of hospital admissions for complications arising from these conditions by between 30% and 77% (Baltussen *et al*, 1997, Deguichi *et al*, 2000, Mullooly *et al*, 1994). To ensure the success of a vaccination program, the vaccine must be accessible to the elderly population (especially financially), and booster shots must be provided in a timely manner.

Table 4 represents the Australian Society for Geriatric Medicine's recommendations for ensuring accessibility and regularity of vaccinations (Woodward, 1998).

Table 4. Recommendations for ensuring accessibility and regularity of vaccinations

Accessibility	Regularity
Offering vaccinations upon discharge from hospital, at residential or long term care facilities, in ambulatory care settings and other secondary health care settings.	The use of reminder systems (for example, mail outs and telephone calls) to ensure patients receive booster shots.
Providing free vaccinations for elderly people.	The use of educational forums to increase awareness of vaccines.
Increase communication between specialists and GPs about current vaccine recommendations.	The use of displays at shop fronts, community centres and residential care facilities to increase awareness of vaccines.

Fall prevention

Interventions have successfully reduced the number of falls and the number of fall-related admissions to hospital in the elderly (Gillespie *et al*, 2003, Robertson *et al*, 2001) reviewed fall prevention interventions, and found the following interventions to be successful:

- Exercise programs designed to increase muscle strength and improve balance. These exercise programs are most successful when prescribed at home by trained health professionals, however group based Tai Chi programs have also been successful.
- Home hazard assessment and modification, professionally prescribed for older people.
- Withdrawal of medicines effecting balance.
- Multidisciplinary, multifactorial, health/environmental risk factor interventions.

Generally, the key success factors in all of these interventions were that the intervention programs were individually prescribed, and delivered by trained professionals.

Nutrition

The few interventions that seek to improve nutrition in elderly people have been successful in broad terms. The effect on hospital admissions is difficult to assess. Milne *et al* (2002) conducted a systematic review of randomised and quasi-randomised controlled trials of the effect of giving oral protein and energy supplements to elderly people recovering in hospital. This significantly reduced the length of stay for the intervention group and would probably have a comparable positive effect on the number of avoidable hospital admissions. The New Zealand Positive Aging Strategy seeks to promote good nutrition, citing its known positive effects on general health (Ministry of Social Development 2001). Thus these interventions are likely to have a long term, incremental effect on reducing avoidable hospital admissions.

Physical activity

A range of physical activity programs for the elderly is in place. These generally remain unevaluated, since the benefits of physical exercise on general health and wellbeing are well established (Ministry of Social Development 2001). A probabilistic model estimated that an exercise program for the elderly would be a cost-effective way to reduce the incidence of chronic diseases and resulting hospital admissions (Munro *et al*, 1997).

Smoking Cessation

There is ample clinical evidence that smoking cessation has the potential to reduce the burden of illness to all individuals including the elderly. Smoking cessation reduces the risk of many forms of cancer irrespective of the age. These include lung cancer, laryngeal cancer, bladder cancer, pancreatic cancer and cancer of the oral cavity. Similarly, smoking cessation substantially reduces risk of coronary heart disease (CHD) and for those diagnosed with CHD, the risk of recurrent infarction and cardiovascular death. Among patients with peripheral artery disease, smoking cessation improves exercise tolerance, reduces the risk of amputation after peripheral artery surgery and increases overall survival. There are a variety of smoking cessation programs available (US Department of Health and Human Services, 1990).

Primary care interventions

Provision of specialist geriatric care in Residential Aged Care Facilities

A highly successful intervention aimed to provide specialist geriatric care in a RACF (Ackermann and Kemle, 1998). The facility received gerontologist visits three or four times a week in conjunction with routine visits by supervising and attending physicians. The number of hospital admissions decreased by 38% over a period of five years. Probability testing indicated that this was statistically significant at the $p<.03$ level. However, the study did not include a control group, and this reduction could be due to maturation effects.

Primary Options for Acute Care (POAC) intervention

A successful intervention piloted in New Zealand aimed to increase the capacity of primary care givers to offer their patients acute care (Aish *et al*, 2003, Gribben, 2001). Primary care teams were allocated $266 per patient to access investigations at levels of care or treatment not usually available or affordable in a primary care setting. For example, GPs were able to organise urgent ultrasound scans, and arrange after hours IV treatment and respite care. The program aimed for a 25% rate of hospital admissions in patients enrolled in the program: it achieved a 15% admission rate (that is, 85% of the patients were managed in the primary care setting). Similarly, there was a difference between admission rates of GPs who used the POAC program and practitioners who did not manage patients using the POAC program. Both patients and primary care providers expressed a high degree of satisfaction with the program.

Gribben (2001) discusses a number of negative implications that must be managed, including unwarranted increases in patients' perception of the severity of their condition if they do need have to be referred to the hospital; and an increase in the GPs' level of accountability, with a potential to increase their role stress. The authors identify two factors critical to the success of POAC programs, namely that GPs are provided with access to the resources required to perform

acute care activities, and that the admission reduction target is achievable without placing pressure on GPs to avoid admission if the condition deteriorates.

After hours primary care consultations

In a UK study, an intervention that showed potential to reduce avoidable hospital admissions tried to reduce inappropriate presentations at primary and secondary care facilities by increasing the availability of after hours primary care advice (Lattimer *et al*, 1998). An after hours telephone consultation service run by nurses was set up to serve a GP cooperative with a combined practice population of 97,000. The nurses undertook a systematic review of each patient's condition, and then recommended an appropriate course of action. Courses of action ranged from managing alone with the nurses' advice, contact with a GP, or referral to a secondary care facility. The intervention successfully reduced the number of presentations at the GP cooperative, but it failed to affect the number of presentations at the emergency department. However, the design of the study and the type of data recorded did not allow the effect of the intervention on *inappropriate* presentation to the hospital to be measured accurately. A better designed trial using a service aimed more specifically at intercepting patients who would normally present at the hospital would be useful in determining what services could be effective in reducing avoidable admissions.

Pharmaceutical interventions

A number of studies assessed interventions attempting to reduce avoidable admissions by targeting pharmaceutical risk factors - either inappropriate use, or risks associated with specific conditions (for example, Varma *et al*, 1999, Zermansky *et al*, 2001).

One intervention aimed to decrease the risk of adverse drug reactions (Brookes *et al*, 2000). The authors assigned a community liaison pharmacist to elderly patients who were being admitted to hospital and were taking four or more drugs. The pharmacist was responsible for compiling a complete pharmaceutical history for the patient and managing their subsequent medications. The pharmacist was also required to liaise with the patient and the patient's other health care providers to counsel them about their medications. The authors conclude the intervention was successful because it reduced the readmission rate of the intervention group in comparison to average readmission rates for that group. This claim must be interpreted cautiously owing to the absence of a matched control group and probability testing of the difference in readmission rates.

Hallas *et al* (1993) conducted another successful intervention that targeted primary health care practitioners. Patients who had been admitted with an adverse drug reaction were selected from two departments, general and geriatric. A three-part intervention was implemented. First, details of the adverse drug reaction were sent to each patient's GP. Secondly, eight monographs were distributed to all GPs in the region that detailed all the adverse drug reactions observed in the study. Finally, four evening seminars about adverse drug reactions were held. The intervention yielded an 83% decrease in avoidable drug reactions.

Prevention in the primary health care setting

A number of interventions has sought to identify elderly patients at risk of requiring an acute hospital admission, and to increase the level of care to these patients in order to avert this crisis. One intervention targeted GP patients who were 75 years or more (Jiwa *et al*, 2002). Patients who were at risk of injury or deterioration, but who had no existing life threatening illness were targeted. An 'at risk' status was assigned to patients on the basis of frailty or physical disability, multiple pathology or polypharmacy, and/or living alone or poor social support. The patients were contacted and offered an increased level of support. Depending on their condition, they received support from a wider primary care team including a dietician, physiotherapist, occupational therapist, a district nurse, a social worker and a GP. The authors concluded that the intervention was successful because the intervention group, when compared to patients of the same age who were not identified as 'at risk', did not have higher hospital admission rates. However, membership in either group was decided arbitrarily, and there may have been no differences in the admission rates of the groups in the outset.

Byles (2000) conducted a review of 21 randomised controlled trials of health assessments for the elderly. The assessments were conducted in a primary care setting and sought to maintain the health and quality of life for older people through early risk identification and management. The majority of the methodologically sound studies yielded health improvements for the participants. Elements that were unique to the successful protocols and processes were:

- Use of nursing and allied health professionals as well as GPs to conduct assessments. Psychologists or physiotherapists were confident in doing assessment, were acceptable to the clients, and could potentially reduce the GPs' workload (Byles *et al*, 2002).
- Target groups defined only by age (not risk status) – that is, they were universal assessments, not targeted to specific (and often arbitrarily defined) risk groups.
- Included teeth or oral examination, balance and gait testing, and service utilisation in conjunction with other health assessments.

The available literature also suggests that elderly patients who receive assessment and early intervention have higher self-rated health status and make better use of primary health care facilities (Pathy *et al*, 1992).

Secondary care interventions

Short stay or observation wards

Short stay and observation wards have now become a widely used means by which hospitals reduce avoidable admissions (Department of Human Services, 2001a). They are a particularly successful means of reducing avoidable admissions in the elderly (Clinical Epidemiology Unit, Melbourne Health 2001).

Short stay or observation wards are usually associated with the emergency department. They are wards where less acutely ill patients are diverted to define their diagnosis, and determine whether admission into hospital is necessary (Lenox and New, 1997). They are also suitable for patients requiring a short period of care, and may specialise in a particular type of patients (for example, the elderly). Typical patients suffer from generic symptoms (for example, chest pain, abdominal pain, seizure and fever) with a low likelihood of admission, but doctors need additional time to decide whether the symptoms point to a more serious condition that requires admission.

A review of the introduction of a short stay ward found that 71% of all elderly patients admitted to the short stay ward were discharged within 24 hours (Anderson *et al*, 2001).

Features of successful short stay or observation wards include (Department of Human Services, 2001a):

- Location within, or close proximity to, the emergency department.
- Focus on patients with an expected length of stay of 24 hours or less
- Strict admission and discharge criteria.
- Frequent review of patient condition by consultants and specialists

Discharge planning

Discharge planning is a widely implemented method for decreasing the length of stay and the number of readmissions in the elderly (Anderson *et al*, 2001, Bonevski *et al*, 2002). Discharge planning involves the development of a personal discharge plan to help patients make a smooth, safe, and timely transition from hospital to home. The process often begins early, at either the pre-admission or admission stage.

The evidence for the effectiveness of discharge planning in reducing readmissions is mixed. A Cochrane Review (Anderson *et al*, 2001) found that in most cases, discharge planning helped to reduce the number of readmissions. However, there is some evidence to suggest that this effect might hold only in the short term. Morrissey *et al* (2003) developed a questionnaire based on regression analysis to help hospital staff identify patients at risk or protected against readmission. However, the authors note that their model is highly sample-dependent. Risk of readmission is

highly context-dependent (that is, it depends on the individual) and discharge planning therefore needs to be a highly individualised process. Similarly, there are methodological problems in the majority of the literature that points to a need to interpret the positive effects of discharge planning cautiously (Hyde *et al*, 2000).

Generally, consumers react positively to discharge planning, reporting an increased level of satisfaction. An effective discharge strategy should consider a wide variety of information, including the process of recovery, medication requirements, levels of functioning (social, psychological and physical) and community support requirements.

There are four phases of discharge planning:

1. *Assessment*: Assessment occurs within 48 hours of admission, and is conducted by a specialist nurse in collaboration with all caregivers, using validated and reliable instruments.
2. *Development*: The patient, caregiver, primary nurse, physician and other health care team members all contribute to the development of a preliminary personal discharge plan.
3. *Implementation*: Implementation occurs in the days leading up to the discharge. During this phase the nurse finalises the plan of care in collaboration with the stakeholders mentioned above.
4. *Evaluation*: The evaluation stage consists of telephone contact and availability to monitor the program.

Dwyer and Jackson (2001) reviewed a particularly successful intervention that targeted patients at risk for an avoidable drug-related readmission. The intervention provided post-discharge home visits from a nurse and a pharmacist to check for compliance and early markers of deterioration. The intervention group had 18% fewer hospital admissions. Another intervention used an interdisciplinary team (nurses, a physiotherapist, an occupational therapist and a social worker) to conduct a comprehensive assessment and implement a discharge plan. The assessment covered daily living, cognition, social situation and perceived health, and post-discharge services were provided to meet the care needs identified in the assessment. Although the intervention and control group did not differ in rates of readmission, the intervention group generally displayed better functioning, and in the long term this model may help reduce avoidable admissions.

A different intervention which sought to reduce admissions to residential care facilities further supported the value of discharge planning (Anttila *et al*, 2000). The intervention included improving communication networks between care providers, encouraging visits to outpatient clinics and simplified medication instructions for elderly patients identified as ‘at risk’ for an avoidable readmission. Although the intervention reduced costs of hospital care, there was no difference between the control and intervention group in terms of admission to hospital, or permanent or temporary admission to residential aged care facilities.

Other successful interventions have targeted specific conditions in the elderly, for example, congestive heart failure (Rich *et al*, 1995). These examples suggest that discharge planning that targets the specific syndrome of the geriatric patient and provides ongoing care for that person may increase success.

Anderson *et al*, 2001, Caplan and Brown, 1997, Dwyer and Jackson, 2001, and Swerissen *et al*, 2002 list a number of other factors that increase the effectiveness of discharge planning for the elderly. They include:

- Identifying patients who are most at risk for readmission and target these patients for intensive discharge planning.
- Providing staff who specialise in discharge planning (nurses seem to be the most effective discharge planners).
- Ensuring that community support services have the resources to meet increased demand.
- Recognising the integral role of family members in the success of discharge from hospital, and involving family members in the planning process.

The strength of discharge planning may also lie in its effects on avoidable distress and time-consuming visits to community-based providers – a 'cost' absorbed by the patient and family, even if readmission is not an issue.

Staff in the Emergency Department.

A third of all admissions to hospital in the UK and Australia occur through emergency departments (Conn *et al*, 2000). Emergency departments are particularly susceptible to inappropriate presentations and consequently avoidable admissions. Inappropriate presentations may escalate into an avoidable admission for a range of reasons, including poor decision-making, absence of specialist staff, and a lack of alternative forms of care. Staffing emergency departments with certain types of practitioners can help reduce avoidable admissions.

- Junior staff are more likely to admit patients than more experienced staff members. Thus the use of senior staff in the emergency department helps to reduce avoidable admissions (Department of Human Services, 2001b).
- The availability of multidisciplinary staff in emergency departments reduces avoidable hospital admissions (Department of Human Services, 2001b). Specialist staff on hand can provide early diagnosis, treatment and condition review, and patients do not have to be admitted to hospital while they wait for specialist attention. Nurses that specialise in ambulatory care sensitive conditions and gerontology are particularly effective in managing patient admissions. One peer review estimated that 9.5% of admission through the emergency department could have been avoided if a specialist or surgeon was available for consultation in the emergency department (Denman Johnson *et al*, 1997). A successful intervention placed a geriatrician in the emergency room to assess presenting elderly patients for nutrition status, cognitive functions, thymic functions, gait and functional abilities (Gentric *et al*, 1998). The program avoided hospitalisation in 50% of the cases. Earlier research asserts that elderly patients discharged from the emergency department are at risk for loss of independence and mortality(Rosenfeld *et al*, 1990, Bridges *et al*, 2000). In light of this, a geriatrician is needed in the emergency department not only to reduce admissions, but also to provide quality care.
- One successful intervention sought to divert inappropriate presentations away from the emergency department (Hansagi *et al*, 1987). The intervention trained reception staff to conduct a short, verbal assessment of the condition urgency of patients presenting at the department. Non-urgent patients were directed to a registered nurse who gave medical advice to the patient and helped them arrange alternative care. The intervention managed successfully to refer on 55% of patients presenting at the department without ever treating them, thus freeing resources for more serious cases.
- Conn *et al*, 2000 suggest that a case manager in the emergency department may reduce avoidable admissions. The case manager can assess current admission against strict admission criteria to determine its appropriateness, decrease social admissions by finding alternative sources of care and identify patients at a high risk of readmission and initiate post discharge care to reduce this risk.
- One intervention placed a facilitator from a local extended care facility in the emergency department to avert avoidable admissions (Boston Medical Group 2001). The facilitator evaluated incoming admissions and referred them on to the extended care facility where appropriate. Anecdotal evidence suggests that many of the patients required physical therapy, and preferred direct admission to the extended care facility, rather than transfer after admission to hospital. Key informants indicated that key success factors of the program were:
  - clear lines of responsibility
  - a collaborative approach between health care providers (for example, the GP, the physicians and staff at the hospital).
  - enough patient volume to justify the cost of placing a physician (from the facility) in the emergency department.

While providing case managers or facilitators in the emergency department is a model that has logical appeal, it is as yet untested in well-designed studies.

- Dale *et al*, 1996, and Murphy, 1998a-b assert that the presence of GPs in the emergency department is a highly successful means of reducing the number of avoidable admissions. GPs have been found to handle up to 41% of cases in the emergency department with fewer resources and greater efficiency than general emergency staff. They reduce admissions by ordering fewer investigations and observations. Other authors posit that GPs have more knowledge of the range of alternatives available, and are therefore less likely to admit patients to hospital (Coast *et al*, 1996a). However, there is inadequate study of patient outcomes under this model of service delivery, and therefore concern about patient safety, or the possibility that these GP-led services may simply defer investigations. Patient outcomes should be evaluated before implementing this system to ensure that high quality care is provided.

  Many interventions seek to reduce the demand on the emergency department by increasing the availability of primary care. These interventions are often unsuccessful because patients present at the department for a variety of reasons independent of the availability of primary care services (Roberts and Mays, 1998, Liggins, 1993; Steel 1995). Providing GPs at the emergency department is more successful because it increases the availability of primary care services in a setting preferable to patients.

Decision-making tools

As we have seen, a primary cause of unnecessary admissions is poor decision-making at the point of admission. In decision-making tasks that require many pieces of information to be combined according to complex rules, human beings rely on rules of thumb, or heuristics, to make decisions.

The decision to admit requires practitioners to assess the level of care required (including the severity of the presenting problem and the presence of other conditions and risk factors) against the level of care offered in the hospital, while checking for alternative models of care. The decision to admit may be too complex for practitioners to approach in a rational manner where all the relevant information is processed accurately. In recognition of this shortcoming, a number of decision-making tools have been designed in order to reduce avoidable admissions.

AEP

The Appropriateness Evaluation Protocol (Gertman and Restuccia, 1981, Restuccia *et al*, 1996, Restuccia, 1995, Kossovsky *et al*, 2002) was developed in the late 1970s as a means of assessing avoidable admission and unnecessary stay in hospital. The authors developed a diagnosis-independent tool using 30 criteria. The criteria were a list of medical and nursing/life support services that were judged by the authors to be available only at a secondary or hospital level of care. If any one criterion is met, the patient should be admitted to hospital. The authors acknowledge that the criteria are not suitable for all patients. Thus some versions include an override system, whereby the practitioner can choose to admit the patient on the basis of a condition that is not included in the predetermined criteria.

AEP has been extensively validated for use in cross cultural settings, including Austria, France, Italy, Spain, Switzerland and the UK (Lang *et al*, 1995, Lorenzo *et al*, 1999). It has also been validated and used in Australian hospitals (O'Donnell *et al*, 1990, Schmidt and Grundy, 1993).

MPAP

The Medical Patients Assessment Protocol was developed by Mozes, Rosenblum *et al* (1996) to provide hospital workers with a more comprehensive and accurate decision-making tool than the AEP. The authors cite two main improvements that the MPAP achieves - unambiguous admission criteria using precise and comprehensive clinical definitions and cancelling the override procedure used in the AEP that allows hospital workers to admit based upon their own assessment, but which decreased the reliability and utility of other tools. The authors found that the MPAP was more reliable than the AEP and recommend it for use in quality control of medical hospitalised patients.

ISD – A

The Intensity-Severity-Discharge Review System (Adult version) is also a diagnosis independent criteria. It applies assessments of the patient's illness and intensity of care to medical and nursing notes to establish the necessity of an acute admission and number of days of care (Inglis *et al*, 1995). The ISD overcomes the problems of using a generic criteria (in the AEP) by listing both generic criteria, and criteria applicable to patients whose illness occurs in a particular body system, such as the cardiovascular system (Restuccia, 1995).

MCAP

The Managed Care Appropriateness Protocol (Inglis *et al*, 1995) was developed in response to the growth of alternative forms of care, and in particular, managed care. The criteria were designed to be generic and explicit so that fulfilment of one criterion would be sufficient for admission. However, the MCAP aimed to overcome the shortfalls of the AEP and the ISD by being more explicit, applicable to a broader set of patients and identify a broader scope of avoidable hospitalisations.

Oxford Bed Study Instrument

The Oxford Bed Study Instrument (Victor and Khakoo, 1994) was developed from a widely used interview protocol. It contains nine criteria that include medical, nursing and life support needs; if a patient meets any one criterion their admission is appropriate. The instrument is very similar to the AEP, except that it uses less items generated solely from a 'not suitable for being at home' criteria (O'Neill and Pearson, 1995).The tool tends to underestimate the number of inappropriate admissions.

Each tool has been validated. However, when applied to the same set of admissions, they produce a lot of variability in classifications (Restuccia, 1995). The amount of appropriateness varies as a function of the instrument used. Again, the instruments fail to account for situational constraints. What is avoidable and inappropriate in one setting may not be so in another setting, depending on the availability of resources and technology, as well as appropriate administrative and alternative care systems.

Similarly, the instruments fail to take in to account the different views about what constitutes an appropriate admission among different health practitioners both within and between healthcare levels (Read, 1999). Allowing nurses to have input into the decision to discharge can reduce inappropriate stays in hospital, and may have the potential to reduce inappropriate admissions as well (Restuccia, 1982). Thus while the use of decision-making tools at the point of admission help practitioners to become more systematic and objective in their decision to admit, more development of existing tools is needed.

Multiple health care level interventions

Quick Response Service (QRS) Programs

QRS programs seek to avert avoidable acute hospital admissions through the provisions of efficient, coordinated and timely provision of services in the individuals home (Brazil *et al*, 1998, Hardy *et al*, 2001b). They may use an admission avoidance team (Crane and Sparks 1999). Quick Response Service programs are characterised by:

- Links between hospital and home care services
- Assessment and management by a practitioner in the emergency department.
- Home-based services that are more intensive than those normally offered by home care programs
- Quick turnaround time from assessment to service delivery
- Time limited service.

Brazil *et al* (1998) designed a QRS program that was made available to all consumer groups. They found that the majority of users of the service were elderly. Correspondingly, the presenting

problems, classified as functional, physical, mental, social and pharmacy related, were those to which the elderly are particularly susceptible. The intervention was highly successful: 60% of all patients who used the service were classified as 'averted hospital admissions'.

O'Grady *et al* (1996) implemented a generic QRS that also achieved success. The program used a liaison nurse who

- identified potential candidates using existing patient databases and liaising with emergency department staff
- determined the eligibility of patients using a set criteria
- accessed the patients with a multi-dimensional tool
- liaised with relevant stakeholders (including QRS providers) to formulate a treatment plan
- notified the QRS providers of the final care plan
- advocated for the best outcome for elderly patients presenting at the emergency department.

According to the available data, about one third of patients were averted hospital admissions.

Dwyer and Jackson (2001) reviewed a number of studies, and concluded that QRS programs generally reduced admission to hospital, and were a particularly useful alternative model of care for the elderly. Two main critical success factors emerged from this literature - early planning and identification of those patients most at risk.

Geriatric day hospitals

Geriatric day hospitals or outpatient clinics offer GPs an alternative referral point for patients who would normally require acute care (Forster and Langhorne, 2003, Department of Human Services, 2001b). The clinics are generally staffed by geriatricians, and offer:

- Support for patients whose conditions would benefit from ongoing review by a geriatrician
- Intermediate care for patients whose conditions would benefit from sub-acute care, or assessment and care planning as an alternative form of care
- Full day rehabilitation services.

The clinics generally achieve a reduction in avoidable hospital admissions by absorbing patients who would normally be referred to the emergency department and by providing specialist care that can reduce readmission (Dwyer and Jackson, 2001, Forster and Langhorne, 2003). However, Hensher *et al* (1999) found that day hospitals in the UK did not reduce admissions.

Coordination of care

One successful intervention sought to reduce planned avoidable hospital admissions (Kossovsky *et al*, 2002). The authors were interested in reducing the number of elderly admissions due to elective surgery and investigations. A telephone hotline was implemented to provide GPs with a contact in the hospital. The contact was a medical professional, aware of current occupancy rates, who could discuss the suitability of admission with the GP. Avoidable hospital admissions were reduced from 15% to 9%.

Comprehensive geriatric assessment and management

Comprehensive geriatric assessment (CGA) is a collective term for a number of interventions (Swerissen *et al*, 2002). Typically these interventions provide a range of services including inpatient evaluation and rehabilitation units or outpatient based consultation services and home assessments. The interventions seek to identify the health and disability support needs of older people, and coordinate the appropriate services to meet these needs. The interventions include in-patient-based evaluation and rehabilitation units, or an outpatient-based consultation service that may include a home assessment function. A Cochrane Review found that comprehensive geriatric assessment is an effective means of reducing avoidable admissions in the elderly (cited in Swerissen *et al* 2002). CGA may also be an effective means of delaying the development of disability and delaying progression through to intermediate and secondary health care levels (Stuck *et al*, 1995). Although continuing research is required, the evidence available points to

CGA as a cost-effective and proactive means of reducing avoidable hospital admissions (McCusker *et al*, 2002). Interventions appraised in this review include the following examples:

- An intervention that successfully reduced avoidable hospital admissions integrated medical and social services with case management programs as a partly preventive measure (Brittian, 1999). The target group were elderly patients who were already receiving some form of home-based assistance. The intervention group received assessment, care planning and case management by a multi-disciplinary geriatric evaluation unit. The case managers were required to liaise with other health care providers to implement, monitor and improve the care programs as necessary. This aspect of case management included problem solving, service coordination and provision of extra services as necessary. Patients who received the integrated program were compared to patients who received standardised care, without integration. Patients in the intervention group had fewer admissions and were able to live in the community for longer than patients in the control group.
- The Senior Team Assessment and Referral Program (STAR) (Fordyce *et al*, 1997) was another multi-level intervention that may have the potential to reduce avoidable admissions in the elderly. It sought to provide comprehensive geriatric assessment that was faster and less labour intensive than other models available. The intervention used a short, comprehensive outpatient appraisal to identify elderly people at risk of becoming frail. A nurse practitioner evaluated elderly patients once a year for three years, assessing their health, functional and social statuses. The nurses provided case management when the patients were in danger of becoming frail, or were frail. When compared to a matched control group, the intervention group used more health care services in the short term, but the over-all health and functioning of the intervention group improved in the long term. This is likely to have a flow on effect to avoidable hospital admissions. Thus the STAR program warrants further research into its efficacy as an avoidable hospital admission intervention.
- One particularly successful intervention combined effective methods of assessment, home care and case management to reduce hospital admissions in the elderly (Landi *et al*, 2001). The authors used a multidisciplinary community geriatric evaluation unit to identify suitable elderly patients and implement and maintain the program. Case managers were responsible for the initial and follow-up assessments and coordinating services. GPs were also highly involved in the program in terms of case finding, care planning and emergency care. The Minimum Data Set for Home Care tool was used to conduct the assessments. This tool is widely validated and implemented; it allows assessment of multiple domains such as function, health and social support and provides specific recommendations about further assessments and home care options. The intervention yielded an 18% reduction in unplanned hospital admissions.

Alternative models of care: Primary care

Early risk screening

Health status is predicted by a broad range of variables (Guerra *et al*, 2001). Predictors of admission into hospital included living alone, financial constraints to obtain medication and diverse indicators of need (for example, poor self perceived health status) (Elkan *et al*, 2001). Given the broad range of social, financial and health factors that are predictive of health outcomes, early risk screening might be an effective means of reducing hospital admission. Elkan *et al* (2001) reviewed a number of studies that provided weekly health visits aimed at illness prevention and found they had no significant effect on the number of hospital admissions. However, further development of such programs and research about the utility may yield an effective model.

Intermediate care

Many alternative models of care are those that provide intermediate care. Intermediate care may be defined as models of care that meet the following criteria (Wistow *et al*, 2002);

- Directed towards individuals who are facing an avoidable admission, a long stay in hospital or admission into a residential care facility
- Provided after an individualised assessment has been conducted and an integrated care plan has been formulated
- Seek to maximise independence
- Time limited (around six weeks) and multidisciplinary.

A number of alternative models of care meet the criteria.

Quick Response Service

As discussed earlier, a QRS is a rapid response to the onset of an acute crisis that seeks to provide secondary care in the home, thus averting an admission to hospital. Two Australian QRS initiatives are the 'GP Home Link' and the 'Emergency to Home Outreach Service' (ETHOS) (Department of Human Services 2001). The 'GP Home Link' program was trialed in South Australia from 1997-1998. The program provided short term access to home care services for GP referred patients at no cost to the patient or GP. ETHOS provided respite and home care services for patients referred from GPs, the emergency department, and the ambulance service.

Hospital in the Home

Hospital in the home programs are similar to QRS programs in that they provide services in the home that are usually available only in a secondary or hospital setting. However, the scope of the services offered by hospital at home programs is generally broader, offering investigations as well as on going treatments (Wistow *et al*, 2002).

The evidence for the utility of hospital at home is mixed. Dwyer and Jackson (2001) review a number of studies and conclude that, while it decreases some health care costs and enhances consumer satisfaction, there is little evidence to suggest it decreases hospital admissions.

In one review of the utility of hospital at home care after early discharge for elderly patients, most of the studies in the review failed to find a significant reduction in the number of avoidable admissions (Shepperd and Iliffe, 2003). However, the commentary attached to the study notes the methodological limitations of many of the studies included in the review.

A Cochrane Review has also been conducted comparing hospital at home and in-patient care (Shepperd and Iliffe, 2003). The studies did not find a significant reduction in readmission rates. The major advantage of hospital at home as an alternative model of care may be that it is significantly cheaper than hospital care, without negative effect on clinical outcomes or patient satisfaction (Board *et al*, 2000, Bonevski *et al*, 2002, Caplan, 2000, Coast *et al*, 1998). It should also be noted that the suitability of hospital at home care may vary depending on the condition. The Cochrane review cites articles that suggest the benefits of hospital at home for stroke patients is yet to be established in the literature (Shepperd and Iliffe, 2003, Langhorne *et al*, 2002, Outpatient Service Trialists, 2003).

Anderson *et al* (2000) conducted a randomised controlled trial in teaching hospitals in Adelaide comparing home and hospital as a site for stroke rehabilitation. They found that early discharge and home-based rehabilitation could reduce the use of hospital beds at lower cost and without compromising patient outcomes, but posed a potential risk to the mental health of caregivers that should be considered in choosing this management strategy.

Several suggestions are made in the literature for improving the utility and efficiency of hospital in the home programs. Bridging services between hospital discharge and hospital in the home care are useful for managing this transition. For example, a program in NSW (Carrington Temporary Aged Care Program – CTACP) provides services that assist clients temporarily with personal care, domestic help, shopping, meals, transport and psycho-social support until hospital in the home care can be arranged (Wilson *et al* 2003).

Patient and carer response to the service indicates that it is highly satisfactory, while quality of life measures indicate that the program provides an adequate level of care. Hospital in the home

appears to enhance health outcomes for older people who are treated at home, and decrease the deterioration associated with passive, bed-based care in an inpatient. Its benefits are not only a lower cost option, but the related benefits of treating someone in their own familiar environment with diminished confusion, undertaking daily living activities (bathing, toileting, making tea), and reduced exposure to some hospital risks such as nosocomial infections (Wilson *et al* 2003).

In terms of efficiency, it has been suggested that hospital in the home services could be expanded to provide hospital care in nursing homes (Department of Human Services, 2001a). The Victorian task force also recommends increasing the exchange of information between successful hospital practices and hospital in the home programs.

Residential rehabilitation

Residential rehabilitation is a model of care that provides intensive therapy for rehabilitation, in settings such as a community hospital, rehabilitation centre or a residential aged care facility. One intervention successfully reduced admission rates for stroke patients because GPs were able to refer patients directly to a community rehabilitation team (Thorne and Jeffery, 2001).

Supported discharge

Supported discharge allows patients to be discharged earlier by providing nursing and/or treatment to support the patients' recovery in the home.

Day rehabilitation

A short-term period of therapy for rehabilitation, made available in a day hospital.

Alternative models of care: Secondary care

A number of alternative models of care may be made available in a secondary care setting. Some of these models have been mentioned in the preceding section on successful interventions.

Geriatric observation services

Geriatric observation wards, either attached to the emergency department or the general hospital, provide general hospital services to elderly patients for a period of 24 – 48 hours. Although emergency department staff generally staffs observation units, a geriatrician would be most appropriate for geriatric observation wards. Geriatric observation units manage conditions that have a low likelihood of admission, but require observation before a final decision about severity or a diagnosis can be made. According to the Clinical Epidemiology Unit, Melbourne Health (2001), conditions that are managed in geriatric observation wards usually meet one of the following criteria:

- Conditions of moderate severity that may be treated with a brief course of therapy, for example dehydration.
- Conditions which present with mild severity or uncertain symptoms, but which may quickly escalate into a serious condition requiring secondary care, for example chest pain or suspected poisoning.
- Conditions that require prolonged observation to ensure the safety of the patient.
- Some postoperative conditions
- Social situations that require time so that social services may be arranged.

Symptoms typical of patients admitted to the geriatric observation units are chest pain, abdominal pain, fever, seizure and trauma.

Where short stay units are not available or possible, hospitals could establish special protocols for elderly patients presenting at the emergency department inappropriately (Department of Human Services 2001). Such protocols could include referring the patients back to their local GP, psychiatric assessment or treatment or aged care assessment.

Day surgery

Day surgery is an increasingly popular alternative model of care (Anderson *et al*, 2001). Day surgery is appropriate for procedures which have an unexpected readmission rate of 2-3%. Elderly people with complex health problems are able to undergo day surgery, with readmission rates that range from 0.1% - 9.5%.

Fast track

Fast track facilities are services in the emergency department that are designed to treat less acutely ill patients presenting at the department (that is, inappropriate admissions) (Anderson *et al*, 2001). The evidence for their utility is mixed. The authors also note the poor quality of the literature in this area, stating the most of the studies are descriptive in nature. As the elderly are the least likely to present at the emergency department inappropriately, more research is needed on the effect of fast track facilities on avoidable admissions in this population.

Alternative models of care: Comprehensive geriatric assessment (CGA)

Comprehensive geriatric assessment is an alternative model of care that is particularly successful in reducing avoidable hospital admissions. The key features of CGA models are:

- Patients are identified in secondary care setting; although there is room to identify at risk patients in primary care settings
- CGA is provided by geriatric practitioners, either in a health care setting or in the home
- A range of services are provided in the home according to an individualised program of care
- Coordination of services
- Extensive follow up assessments and modification of the program as necessary.

Alternative models of care: Case management

Case management is an alternative model of care that is often a component of CGA programs. Challis *et al* (1998) define case management as "a direct client service for individuals with complex needs that involves ongoing contact between the client and the case manager, to ensure that services are available, accessible, and co-ordinated to meet each individual's needs." Alone, trails of case management have both increased and decreased hospital admissions. However, when it is included as a component of CGA programs, it increases the efficacy of these programs. In fact, research suggests that case management is critical to the success of CGA programs (Boult *et al*, 1998).

Part 2: Informants' views

Here we present a thematic content analysis of interviews with 31 expert informants nominated by the project's task group, and whose names and affiliations are listed in Appendix 2. They include academics, gerontologists, other medical specialists and general practitioners, nurses, allied health professionals, carers, and representatives of the health departments of every Australian jurisdiction.

We present this synthesis of informants' views in a form that allows those who take part in subsequent change management processes to gain a sense of *how* people think about these issues, not only *what* they think. For this reason, the themes also contain some direct quotations from informants.

We have triangulated their insight, experience, and knowledge with the content of the research literature and the collation of current Australian and international initiatives presented in Appendix 1 in forming the conclusions and findings that follow in Part 3.

The determinants of avoidable admissions

Concepts of 'avoidable', 'unnecessary', 'inappropriate'

Specialist geriatricians and other clinicians in the aged care area believe that part of the concern with 'avoidable admissions in the elderly' is an inappropriate bias and prejudice against hospital care for the aged, and a widely-held perception that the elderly should not 'block' hospital beds. A number of these informants say some admissions are labelled inappropriate through prejudice or ageism, or because doctors and nurses do not know what to do.

In most instances, they say, the evidence does not support the notion that older people come to hospitals for social reasons –'discopia' or 'acopia'. In the opinion of experienced specialist clinicians of all disciplines, the reason the person is not coping is because they have 'pain as yet unidentified' - for example, a fractured pelvis, pneumonia, or a small stroke, or another missed diagnosis.

These informants believe there is too much emphasis on cost-effective use of hospital beds in defining what is appropriate or avoidable, when the focus should be on what each patient needs to ensure best medical and quality of life outcomes, and on preventing humanly and economically more costly future outcomes for the person, their family, the acute care system, and society.

The culture of major teaching hospitals has come to a point where 'the interesting complex patient' has now become 'the costly outlier' to be avoided at all costs. The culture of some medical disciplines (notably emergency medicine) has always been that the dramatic trauma or the acute life-threatening episode is the most interesting and challenging - not the confused, medically ill older person.

The term 'avoidable' also worries some informants. It is an acceptable term, they argue, only if there are alternative programs, and does not imply that care may be deferred altogether. If adequate care and resources are available in the community, only then may the term 'avoidable' be applied properly.

Informants commonly expressed the view that a feature of acute medical services is that they try to put fences around hospitals, and increasingly the system sees this as a good thing. Care of the elderly in an acute hospital setting is seen as problematic: these patients are not highly valued, and are seen as burdensome to the system. 48% of people in hospitals are elderly (in days of bed occupation), yet hospitals regard this as inconvenience rather than core business.

One informant argued that the reason aged care was an issue was simply the shortage of acute beds. Over the past decade, there has been a systematic reduction in the number of hospital beds and an increase in expectations for bed occupancy rates from 85% to 99%. This group of patients had been chosen as the scapegoat. Hard figures, he asserted, showed that the acute bed crisis was the result of the decrease in acute care beds, not the impact of inappropriate admissions for the elderly.

Some informants say the so-called 'inefficiency' in the system may work in favour of the elderly patient. It is likely that a certain amount of time in hospital before a move into full time care is a good thing. When the decision is made to admit to a facility, the patient is usually quite ill. It is good to have a cooling off period, a time for convalescence and rehabilitation. This may lead to a review of the decision to place someone in a nursing home. Building in a 3-4 week time lag also gives patients

time to sort out problems, and 'get their heads around' the enormous changes involved in a move from home to RACF. Most of the geriatricians we spoke to think along these lines: hospital admission gives them and their patients necessary time to make good decisions, or to prepare properly if RACF placement is warranted.

> *"Most people in emergency departments of hospitals are there as a last resort."*
>
> *"A relatively small number are inappropriately in hospital – there was no other alternative at the time."*
>
> *"Some admissions could be avoided if over-all care management was organised differently, perhaps weeks before. An acute presenting condition may be relatively minor, but add comorbidities and you end up with a care package that can't be managed in other settings."*
>
> *'There is a no simple answer. It comes down to good support structures for people with chronic diseases."*
>
> *"You need to be careful about what you classify as avoidable. It may be true to say about residential care that minor procedures should be undertaken there, but lack of funding and GP care mean that admission for minor procedures may not be avoidable, particularly from low care settings."*

Circumstances of patients and carers

Differentiating circumstances of older people, their families, and their environments that informants regard as important factors in avoidable admissions include:

- Place of residence: there are differences among urban, rural and remote consumers reflecting differing levels of access to support in the home or in RACFs.
- Access to specialist care: there are virtually no geriatric physicians in rural and regional areas (though there are shortages in metropolitan areas too). In Queensland, for example, there is no geriatrician between Nambour and Townsville. ACATs have catchment areas the size of large European countries. Many areas have nurse and social worker input, but no medical input.
- Socio-economic status: consumers with more money are better able to organise support and care at home, or to afford private sector services.
- Household structure: the availability of carers has decreased: in modern families. Women work, and no one is available to do the caring. Meanwhile, the number of older people living alone is increasing.
- Carer burden, and carer illness or hospitalisation, are significant issues that can precipitate admissions.

  > *Carers do a hell of a lot, informally and largely unpaid. They are critical to the community system. There is great willingness amongst carers to do more, but the system is not geared to support them.*
  >
  > *These are the heroes who carry the whole burden of community care and are doing a fantastic job. Families do not fit the stereotype of 'granny dumping' but carry the stress and burden of care and forgone opportunities.*
  >
  > *Dementia care, night care and continence care are the main problems. Carers may not be able to cope with persistent nighttime care – hygiene, continence, confusion. Continence nurses can't provide support. The level of care provided is about containment, not about addressing the underlying issues. Support groups are useful, but offer no hands- on expertise.*

- Attitudes, beliefs, and expectations of older people about hospitals and hospitalization: many older people and their families believe that hospital is the only safe place to be when you are sick.

  > *The word of mouth advice is most often that the level of support in the community is 'wafer thin' and people still head for hospital.*

- Families are often very anxious about relatives in RACFs, and pressure RACF staff and GPs to send people to hospital. There is a need for prior discussion of the capacity of RACF staff to manage episodes without transfer.

- Lack of awareness or comfort with advanced health directives and thought about end of life decisions and treatment preferences. Education and discussion about advanced directives are needed, and the existence of a directive must be known to the family, the RACF, and if necessary the hospital.

Characteristics of the person

Informants say the elderly needing care are heterogeneous and thus hard to categorise.

- Many older people cope in a borderline way until a crisis occurs that puts them in hospital. Most are quite ill when they are admitted. The precipitating event is usually a major physiological problem.
- The critical at-risk group is those suffering dementia. This is a large issue in residential care settings. Dedicated, adequately supervised residential care facilities are needed, yet a person may wait 8, 9, or 12 months for access.
- An exceptional group are the elderly who are disengaged from family owing to drift, isolation, alcohol abuse, or mental illness.
- Low literacy levels in the elderly, and low health literacy in particular, are an overlooked problem. People with higher levels of health literacy may tend to avoid hospitals as far as possible. They are more likely to know that hospitals are not safe places, and thus may be less likely to acquire cross infections.

  Promotion of health literacy and self-management of chronic illness will assist in reduction of admissions. Self-help groups and other processes will help.

- Informants had differing perspectives on levels of older patients' capacity to participate in their care. Some said older people these days had a far better idea of what was wrong with them, and both the patient and family were more sophisticated in terms of medical knowledge. There was more awareness of what was needed, but resources were lacking. Others said older patients were more likely to have been raised in a time when they relied on health professionals to make the decisions and give directions, unlike younger generations.
- In the area of chronic disease, a number of trials have experimented with ways to support self-management and self-monitoring in the community. One result has been a marked increase in people's expectations, leading to greater demand for services by older people and their families (usually daughters).

Structural features of the Australian health care system

Informants identify structural features of the health care system that affect presentations and admissions to hospital:

- The cost of providing services to remote areas is high, and in some cases it is not possible to provide specific aged care services to small remote communities. The high costs associated with staff recruitment and retention and lack of infrastructure contribute to the difficulties associated with providing service.
- There is a need for a model of health services delivery that is an integrated continuum of care. The hospitals have done a massive amount to try and improve the system. The primary care sector (GPs, RACFs, allied health) needs to have a structure through which that part of the continuum can be developed, so that there is something for the hospitals to integrate with.

  Because the system consists of a range of funders (public/private, State/Commonwealth) under a range of funding silos, a concerted effort is required to create functionally integrated networks or partnerships that can manage patients according to their needs. This continuum must include health promotion / illness prevention, early intervention acute care, post acute care, rehabilitation, chronic management, support and maintenance and palliative care as required and clinically indicated. Access to the phases of care will require access to all disciplines in whatever combination the clinical need dictates. The provision of care should be in the most appropriate location including the community, hospital, step down facility,

ambulatory care setting, the home and residential care. It must be patient focussed and follow their need for intervention and care.

- Waiting times for GP appointments, and the lack of available specialists, can result in conditions not being diagnosed and treated in time to prevent hospitalisation. Many rural or remote communities have no resident GP, nor is one available within close proximity.
- One informant says new services and pilot programs are unnecessary, but what is needed is better coordination of existing services, which do a fantastic job. Access to the many excellent services developed over the past 15 years has been restricted to ordinary working hours, and this means that hospitals are critical to providing accessible care when it is needed. A model that moves the elderly out of hospitals and into their homes in a timely way will need the support of a much deeper and accessible network of community based services. Without that the currently high level of unidentified need and morbidity in the community will grow.

  It is wasteful to have too many nursing home beds - this just creates more need, and the money is better spent on other services. While the situation varies within and between states, the states with the most nursing homes have the biggest problems.

  The Australian Health Care system is excellent if you are basically well - we have a great drug system and universally available acute care. If on the other hand you are part of a mutually dependent elderly couple both with chronic illnesses with regular or intermittent acute exacerbations then you are in trouble.
- There is a structural gap between primary care and acute care. If, for example, a GP sees a person with pneumonia who needs four-hourly monitoring, the only option they have now is hospital.

  We don't have an intensive, immediate, reliable, responsive, emergency capacity in the primary care system. There are domiciliary nursing services for after discharge.
- Community-based capacity in the system at the moment has been designed around the need for efficient use of acute beds (discharge planning), and the need to have alternatives to RACFs. Very little of the thinking that informs the design of the health care system has been based on working from consumer needs up to the structure needed to support them.

  It can be argued that what is needed is to zero base our thinking about the current structures and funding programs in the community and see how a comprehensive continuum of care from low level supports to short term, intense, immediate clinical responses in the home or in the RACF can be supplied.

  At the high end of community care in this system the immediate response in the home or RACF would have to take on the same ethos as hospitals, which are currently the only place in the health care system where you cannot be turned away.

  Whatever gets designed to fill the gap in the current structure of the system must not run with the same incentives of the community based services - that is, look for any way to refuse service and stay within budget.
- The availability of RACF places plays a part in a longer length of stay when the patient is ready for discharge, but not so much in avoidable admissions *per se*. There is a need to fund interim care so that transfer from high care to low care is not done through hospitals.

  People focus on avoidable admissions from RACFs but the reality is that people who are admitted to hospital from RACFs are there for as long as it takes and then go back. The most at risk group are those on community packages. Some of the ideology in the community-based providers is actually producing crises because they try to keep the person at home at any cost for too long. Less ideology and more skill in sub-acute care in the community and in RACFs would mean that fewer people needed to be transferred to hospital.
- There is no capacity in any State and Territory or Commonwealth programs for live-in carers. People living alone are more likely to go into hospital or RACF prematurely.
- Emergency departments are one-stop shops for radiology, pathology, allied health and pharmacy. There is a lack of comprehensive diagnostic capacity in the community. This is in both low tech and high tech areas. For example, the capacity to get hold of continence advisors, social workers

or therapists to do a home visit is minimal. This is a major disincentive for consumers: in the current structures, all the cost and convenience incentives for consumers are held by the hospital system. On the other hand, one informant said:

> *Some UK studies of the cost-effectiveness of using EDs as primary care providers have shown that the cost benefit is quite high. The push towards more community based service provision may not be cost-effective but it builds capacity without capital injection.*

- Dementia care needs to be addressed as a separate issue - supported, secure and dedicated care.
- Acute beds are built for rapid throughput. The systems are not there in hospitals to deal with ill dementia patients. We need dedicated acute care of the elderly units, a different skill mix, and a different allied health mix.
- In allied health, the issue is the waiting lists - the quantity, not the absence, of allied health.
- Waiting times for HACC services allow conditions to worsen.
- A COPD working party report in Victoria has identified that there are community clinics, but that they are located in places that are hard to access for many people via public transport, or car parking is distant, which makes it very difficult for patients who can't walk for any distance or who are breathless.

Characteristics of the funding/program environment

- The potential for change in the ways health care is delivered to the elderly is constrained by the current system, which is overly focused on hospitals and acute care, and locked into inappropriate funding streams. It is too easy to say the solution is simply more money –health care reform is needed to change the system incrementally and also reallocate existing sources.

Private sector and insurance issues

- For private and not for profit hospitals, there are disincentives in the way that the health funds reimburse care of complex frail aged medical patients. The funding model appears to work best for short stay, predictable surgical procedures, not for nursing home type long stay medical patients. Under many contract arrangements, private hospitals wear all the drug costs, and this is a disincentive to take complex cases.
- There should be a fresh look at the need to re-establish the 'C Class' rehabilitation-convalescence hospital as well as community-based services.
- For some people, services in the home do not suffice, but hospitalisation is overkill.
- The Australian Health Service Alliance (a body that acts on behalf of a number of health funds to negotiate contracts with private hospitals) says that reinsurance rules in Australia have worked against health funds becoming actively involved in hospital prevention programs, particularly for the elderly. It actually works out to be less costly for funds to provide hospital benefits for the over 65s than to offer community-based programs through home nursing, carer support etc. Until this is rectified, private funds are unlikely to offer financial support. There must be a financial incentive for funds to make it happen.
- The introduction of outreach programs from private hospitals goes some way to assisting with the reduction in avoidable hospital admissions. However, hospitals have to meet strict criteria before they can offer such programs, and this needs and is receiving review.
- In the private hospital sector, a number of informants said that, as an industry sector, they are keen to see things done to prevent avoidable admissions, but there is an inhibition for health funds to cover support services - in particular, the impact of re-insurance schemes and risk equalisation. All funds share costs of hospital benefits for those over 65. This group makes up 12% of the membership, but uses 45% of the benefits. The problem is that this equalisation applies only to hospital treatment. The cost of alternative services cannot be debited unless the hospital has an early discharge program. If they do organise an alternative service, it becomes another profit centre for the hospital, and cost centre for the industry.

> *As expensive a program as in hospital. … Cost impact may be better in hospital…. Cheaper to wait until you go into hospital and pay the bill.*

- Informants in the private sector say the regulatory environment provides disincentives to invest funds in prevention. In relation to chronic disease management programs, the private sector sees some privacy issues. Some consumers do not want to have that level of intrusion into their lives, and from the insurer's point of view there can be a large investment with no guaranteed return in the short term.

Issues in the extent and nature of the funding of community-based services

- Support services in some States and Territories are inadequate. For example, it is seen to be okay if the elderly are bathed only three times a week in hot climates. The coverage of and funding for domiciliary nursing services are inadequate. Access to wound dressing, supervision of medication, dementia care support, and daily supervision is mostly inaccessible, except through the EACH program, and EACH is not yet uniformly available. Domiciliary nursing services and allied health workers are available post-acute, but not otherwise. Rehabilitation services that do exist cannot access adequate domiciliary support of all kinds for their clients.
- In the current program and funding environment, not only is there limited access to allied health services such as home modification, but program barriers in place mean one cannot organise such services while the client is an inpatient, yet they cannot go home until the modifications are made.
- Community based providers of services are limited in the coverage they can supply given resource levels relative to demand. There are often long waits for things like home nursing.

  If you want to discharge a patient, there may be no-one to dress a leg ulcer for 3-4 weeks. The mix of hospital and community resources is not right.
- There is a lack of flexible respite options in the community.
- In many places, or at certain times in the budget cycle, carers have poor access to respite.
- The availability of properly funded allied health professionals in hostel, RACF, and community settings is very poor relative to need. Many hospital admissions could be averted by the skills that physiotherapists, speech therapists, psychologists and social workers have. In many instances, what the older person needs is not medical but allied health services
- Remuneration and reimbursement must go beyond medicine to the full multi-disciplinary team required not only to diagnose but also to intervene effectively in the major determinants of avoidable admissions. No one discipline has the monopoly on the broad range of skills required.
- There is a good range of services in the community now, but they cannot be applied flexibly to meet the unique needs of individuals and families. In particular, they cannot be deployed quickly enough. In some programs, there are barriers to effective use of resources because of criteria that are bureaucratically determined rather patient focused.

  There is a need for funding and management models that allow the system to push a lot of resources into the home or nursing home when they are needed, and then pull them out again.
- The structure of the health system in the community is such that hospitals are and will remain the only really convenient and accessible one stop shop for older people with complex diagnostic and care needs.

  Going to a GP is the beginning of days of going from one place to another for x-ray, pathology, and pharmacy services, and sometimes physio and rehab services.

  The limited availability of other forms or other places of care means that hospitals are not a bad fallback. They can bring together the social and the geriatric medicine elements needed. It may not be cost-effective to create a whole new set of places or structures. Hospitals may not be as inappropriate as is currently thought at least as a clearinghouse or starting point for care planning and referral.
- The general practice issue is a major one. The working hypothesis is that no access - or poor or delayed access - to a GP and no home visits lead to delays in treatment and progression to hospitalisation. Timely access is the key:
  - Lack of after hours GPs

  - The lack of bulk billing GPs has meant triage categories 4 and 5 are going to GPs less and less, and to EDs more and more
  - 48% of ED presentations in Victoria are of triage category 4 - 5 in the city, and 50-60% in the country areas. These could have been seen in the community if people could access GPs.
  - Waiting times for GPs, especially in rural areas and underserved outer urban areas.
  - Weekend and Monday availability of GP services: a Victorian study demonstrates more presentations to EDs owing to the closing of GP services on those days.
- The decrease in the availability of bulk-billing and the poor availability of any GP services in some parts of the country leads to waiting times of more than 2-3 weeks, during which people get sicker and then require hospitalisation, or are fearful of becoming sicker and seek hospital-based care when they may not need it.
- GPs cannot get funding for after hours call outs to RACFs, so the level of service is low, and patients are sent to hospital as a risk management strategy for the facility and for the consumer.
- The enhanced primary care items were rolled out with little or no systematic education. The Divisions are now trying to catch up.

  The enhanced primary care items pay only GPs, and it's hard for GPs to communicate with themselves.
- There would be a huge positive impact on GPs' workloads if there were access to multidisciplinary teams at GP surgeries (social work, physiotherapy, psychology etc).

  It could probably halve their workload, and reduce polypharmacy, reduce expenditure, avoid admissions, and get better outcomes.
- The lack of full roll out and sustainable funding models for the support of chronic disease self-management is a concern. If the valuable initiatives developed under the national demonstration projects are not sustainably mainstreamed, significant opportunities for reducing avoidable hospital admissions will be lost, and quality of life for older people with chronic diseases will be reduced.
- The availability of 'diversion' options for avoiding hospital admissions varies over a week. There is a disproportionate number of admissions on Friday night and on long weekends from residential care facilities.
- Rapid response services need to be funded properly and sustainably, and built into the health care system as a layer in between the hospitals and the community.
- There are funding and access barriers to the ability of GPs to get people into see a geriatrician in a community-based setting, so they send them to hospital.
- Competition legislation is a barrier to saying to GPs: 'Come and use office space in the public sector hospital, but only bulk bill". The hospital also cannot offer them free space, because they are part of the private sector and have to be salaried, so Medicare cannot be used

  The Commonwealth doesn't like collocation of after hours services with public hospitals for fear of cost shifting.
- ACAT nurses are now almost totally in the gatekeeper role. We need the capacity to move them back to being people also dedicated to keeping an eye on a particular population of the frail aged.
- The level of paper work now imposed on ACATs, and the fact that funding for them has fallen in real terms (owing to CPI increases not passed on, and award changes not funded) means that doctors are less and less available to work in that role. The support to GPs goes down, access to good diagnosis decreases, hospital admissions increase, and health and wellbeing decrease.
- Private sector providers express concern about ACAT teams in light of delays with assessment and finding places in residential care:

  Could this possibly be discrimination against private providers?

Issues in the funding base of RACFs

- The funding for nursing homes, and the way that those funds are allocated by RACFs, mean that with the increasing number of very high dependency residents with dementia, the system does not adequately supervise people, especially over night. This results in people getting up unassisted, falling and breaking bones, and needing transfer to hospitals.
- The funding for GP home visits and for GP diagnostic work in the RACF sector makes access to these services increasingly problematic. GPs who visit RACFs often do so between 7-8pm. They mostly rewrite the drug sheet, but have no time for a formal medical review. If they are rung during the day, they usually cannot leave their clinics to do a review. This almost inevitably means the client has a hospital presentation, where they see a junior doctor, and are admitted.
- Lack of consistent GP care is a major issue. Few general practices offer after hours cover. People get a locum who has no idea of the background issues, and this often results in a hospital referral.
- Access to medical resources - GPs - is hit and miss in RACFs. They do not provide regular reviews and updates of care plans. There is a paucity of services in many facilities.

  > *Geriatricians have a feel for the area. GPs are not trained in geriatrics, and hospital doctors have no feel for it. Theirs is a different model of care, not a multidisciplinary care model - no case conference, no communication with the entire team. This is not a good model for the elderly, who have multiple problems.*
- One of the key gaps in the funding and program structures is between low care and high care in the RACF sector. The shortage of high care means that if clients end up in an acute hospital and cannot return to a low care setting, they may wait a very long time. While it can be argued that this could be prevented by better and earlier diagnosis, in practice the person may have been functioning at the edge of their capacity, and be tipped over by an acute incident such as a bladder infection. That is, the cause of the admission was not a chronic predictable problem that could have been managed in the community. The funding systems and levels of resource allocation need to take account of this not uncommon scenario, and address the apparent mismatch between low and high care bed availability.
- A lack of availability of RACF-based respite leads to hospitals being used for this purpose, especially but not only in rural areas where public and private hospitals are the only available venue for respite.
- The hospital system currently gets many patients from nursing homes - people who are dying. While one can argue that it is more sensible to provide nursing in a familiar environment, the ratio of nursing staff is so low that there are no resources to provide adequate palliative care.
- There is a lack of patient focus in hospitals. The key hospital imperative is to get people out – an imperative not focused on finding the most appropriate destination and care that is acceptable from the patient's perspective.

  > *With this culture and these pressures in hospitals, even if there were alternative services available, I fear they wouldn't be used.*
- Case management plans for the complex frail aged, and visiting them in nursing homes or at home, are currently not adequately remunerated through any of the existing Medicare items or special purpose programs.
- Availability of nursing home and hostel beds is not as big a problem for avoidable admissions as inadequate numbers of qualified staff and an inadequate skill base.
- There is no funding for hostels to provide appropriate geriatric medical care

Workforce issues

Informants identified a number of features of the health workforce they believe contribute to hospital presentations. They included:

- An under-skilled workforce: doctors, nurses, and allied health professionals who are inadequately trained and supported to know what they are looking at in the elderly, and consequently to know what to do and (most importantly) what *not* to do.

Older people who are in receipt of community based services, such as HACC and CACPs, are more likely to have early intervention or assistance with health or wellbeing issues that are likely to cause hospitalisation.

- Inadequate undergraduate and postgraduate training for all the key disciplines across medicine, nursing, and allied health.
- The result is failure to diagnose and recognise treatable illness in the elderly population early enough. There is a significant number of conditions (for example, osteoporosis, diabetes, falls, chest infections, heart failure, fractures) where early recognition and intervention can avoid hospital admissions.

  Waiting times for accessing GPs, and the lack of available specialists can result in conditions not being diagnosed and treated in time to prevent hospitalisation, particularly in rural and remote areas.
- Insufficient numbers of specialist geriatricians to back up the generalists at all points in the health system, and also provide hands on specialist care for those who need that level of care.
- Inadequate efforts to promote the importance of following a specialty in gerontology, and its rewards. There are specialist doctors and allied health professionals in areas such as sports medicine, but no such workforce exists in gerontology.
- The gerontology workforce needs access to all disciplines. There are no clear career paths for allied health and nursing staff who choose to specialise in geriatric care.
- The quality and availability of a specialist nursing workforce is critical. Currently there is a high proportion of nurses in the aged care sector who are over 50, and the level of continuing professional development is low. Development of a specialist nursing workforce in the aged care sector, and a requirement for continuing professional education and its implementation must be a high priority.
- Under-served outer urban and rural and remote areas not only have no access to specialist geriatrician support and advice, but suffer from inadequate numbers of primary care health professionals as well. As the cost of housing in the inner areas of capital cities rises, older people are moving to outer urban fringes, and the community health service infrastructure is not moving with them.

  The cost of providing services to remote areas is high, and in some cases it is not possible to provide specific aged care services to small remotely located communities.

  The high costs associated with staff recruitment and retention and the lack of infrastructure in some communities contribute to the difficulties associated with providing service.

  Many remote communities have no resident GP, nor is a GP available within close proximity.
- The workforce expects the elderly to deteriorate. When they do, this is often the result of bad care rather than inevitability. It could be fixed by care delivered by people who want to work with the elderly, and who are properly remunerated and motivated, with better training and supervision, rather than a workforce that has no choice with skills that are out of date for the hospital system.
- Concerns about medico-legal liability if patients are not transferred and there is a poor outcome would be decreased if there were greater access to a secondary consultation service with specialists and an upskilling of the GP and nursing workforce in RACFs.
- The shortages in the nursing workforce, the incapacity to compete for the workforce that does exist and the difficulty in retaining permanent nursing staff in RACFs results in an over reliance on agency staff. There is a perception that agency staff lack the skills, knowledge and compassion and that they cannot possible get to know residents and their habits and needs. This leads to avoidable accidents that in turn lead to admissions.
- Part of the problem in achieving the level of skill needed in the RACF / hostel nursing workforce is the 15% funding discrepancy between the funding for staff in hospitals and in residential care settings. It is therefore difficult to attract and retain a well-trained young workforce.

General comments on funding and program issues

- A system is needed that is patient focused and covers the full continuum of care - palliative care, medical care, dementia care, nursing care, attendant care, and supported self management.

  The key will be to say what is the appropriate service delivery model and then say how best to fund it. At the moment, the system keeps adding disjointed bits and funding them separately rather than zero basing the whole thing conceptually and financially and working from the consumer up.

  We have done a lot in general practice, but there have been significant implementation failures that have meant that return on that investment has not been maximised.

  When you take a consumer perspective you soon see that medicine alone does not provide all the answers therefore need more coherently planned and funded multidisciplinary capacity and the necessary reimbursement structures and pools to attract and retain allied health and nursing and attendant care staff into the aged care sector and retain them.

- Hospitals in the public and private and not for profit sectors are still run and funded as silos within the health system. Even in those States and Territories where there are organisational structures that sound as if they take a population versus a facility approach the hospitals within areas, districts and regions are still operating much as they ever have. In fact, it is still the case that when hospitals in the public sector get into trouble financially, districts, areas and so on look to the community sector for funds to bail them out.
- In the private sector there are no real incentives, and many disincentives, to remain focused on those who make it in the front door.

Key elements of good practice in interventions to reduce avoidable hospital admissions

Informants listed what they considered key elements of good practice in reducing avoidable admissions. They included:

Early intervention

- Universal access to health systems that have the capacity for good early diagnosis of common and complex conditions in the community.
- Well-developed capacity to manage conditions better when they are diagnosed early.
- Interventions must contain a good diagnostic and history taking process.
- Good practice should include an element of active case finding by GPs who are trained in what to look for, and who have ready access to geriatrician backup and support.
- Early intervention strategies which ensure that GPs, emergency ward staff, key community based service providers and community based support groups are aware of and responsive to issues that may cause hospitalisation.

Access

- Access to diagnostic capacity in the community - radiology and pathology.
- Increased capacity to do minor procedures in the sub-acute sector.
- Streamlined and more accessible ACAT assessment in the community that reduces the tendency to admit people to hospital to get an ACAT assessment.
- Options that provide care without admission – for example, hospital in the home and community nursing.

RACFs

- More early intervention and acute care in nursing homes.
- The development of systems in RACFs to identify and prevent the most common causes of admissions to hospital (constipation, dehydration, oral health, swallowing), and increased access to speech therapists and other allied health professionals in the community and in RACFs to address and prevent these common problems.

- Delivery of health care in RACF should be well delineated and properly funded. A specific Medicare item number should be developed.
- Culture and practice change programs in RACFs to increase client and carer focus and reduce rigid routines for toileting and turning bed-bound people that can lead to poor outcomes and poor use of resources. Staff tied up in rigid routines take more time to complete tasks and spend unnecessary time with some residents and not enough with others, leading to poorer care.

Integration of services

- Flexible service responses.
- Develop rapid flexible response capacity between acute and community sectors that can be geared up and geared down in the home or in RACFs.
- An increase in the partnership approach between health care providers and carers in general, and in particular at key transition points such as transfer to hospital, or enacting advance directives.
- Step-up as well as step-down services – that is, convalescence care as an alternative to admission.
- Appropriate rehabilitation services available both in the hospital and post-discharge, including transition care options.
- Seamless coordination mechanisms among GPs, hospitals, and community care providers.
- Cooperation and coordination between existing services.
- Good communication strategies among relevant parties, and a clear understanding of roles and responsibilities – hospital staff, discharge planners, transition care providers, residential aged care facilities, HACC, ACAT etc;
- We should not seek to replicate all elements of necessary service or skill mix in every hospital, but include strategic and business partnerships, with good communication and information sharing between facilities to increase access to scarce expert workforce.
- Develop standardised communication tools across the sector, and reduce provider competition and protectiveness about their particular assessment tools and processes.

Managing illness

- Better disease management protocols - for example, in diabetes, regular foot checks to reduce ulcers and hence admissions, exercise programs to assist with weight control, etc.
- The range of strategies should be able to demonstrate a particular focus on those at highest risk from failures in diagnosis - in particular, early diagnosis of dementia with the introduction of appropriate care in the community (the Victorian CDMS model is useful to consider).
- Significant attention to prevention of medication errors.
- GP education and upskilling to reduce the prescription of technically correct medications (such as some blood pressure medications) that are know to increase the risk of falls in the elderly.
- An increase in consumer and carer education to alert people to the effects of polypharmacy.
- Monitor advances in technology and surgical technique that require revised care pathways and can potentially reduce length of stay (for example, hip replacement and drug-eluting stents).
- Increased use of telemedicine and remote monitoring of patients in the home or RACFs is the ideal future.

Communication and information for consumers

- Increased health literacy and self-management of chronic conditions for consumers and carers.
- Good practice must include a self-care component, training and support for self-care targeting consumers and carers, and training and resources for primary care providers to support and recommend self-care.
- Attention to consumer and carer and community education about advance directives and the issues surrounding end of life and the management of terminal illness.
- Easy access to information about and referral to community based or RACF-based packages of care for hospital and community-based providers.
- Delivery of programs and services that are culturally appropriate.

- Availability of timely and appropriately targeted and disseminated information for consumers, carers and providers about options and supports available, and how to access them.

Accessibility

- A system where the necessary social and medical supports are available as close as possible to where the person lives.
- Systems whose elements are planned based on local need. The correct balance and mixture should be such that it varies from place to place based on need and demography.
- Timely responses and services for the elderly in areas of home support - not just heath assessments and treatments.

Carers

- A system that looks after carers as actively as it should look after the identified patient.
- Maintenance of strong carer support systems that include training for carers and clients in health maintenance and specific illness management.
- A system needs to look at ways to support health care providers to do the humanly correct thing at the end of life.
- Interventions must have the capacity to reorganise the health system around the patient, not just be focused on provider or facility needs or outcomes.

Workforce issues

- An upskilled GP, allied health and community and RACF nursing workforce that has access to an adequate number of specialist geriatric medicine, nursing and allied health practitioners who can provide secondary consultation services or hands on assessment and management when needed.
- Comprehensive workforce development, culture change, and change management processes in new initiatives cannot assume that existing general hospital, RACF, or community-based doctors, nurses and allied health professionals can simply be slotted in to work with the elderly - they need access to expertise in the medicine of old age.

  > *We should include considered, well-planned and resourced change management strategies in the parts of the hospital system affected by change. It won't happen by osmosis from one off demonstration projects, no matter how good they are, or how persuasive the results.*

- An adequate workforce that is skilled and properly remunerated.
- Access to a specialist geriatrician workforce must increase.
- Proper funding to cover full terms and conditions of staff, out of hours loadings, relief, and staff supervision and support.

Structural change

- Adopt models of care that require stakeholder engagement and break traditional ways of thinking.
- Plan for and fund the documenting of implementation, monitoring of outcomes, and dissemination of findings and experience.
- Identify and resolve the funding and structural barriers to sustainable initiatives that provide continuity of care, and to the level of intervention that makes people and their families feel safe to manage in the community or the RACF.
- Interventions must be publicly visible, open and accessible to referring providers and to consumers and families

Part 3: Discussion and findings

Developing the evidence on the extent and nature of avoidable admissions

Elderly people present to hospitals proportionately more often than younger people. In response to demands now placed on hospitals, health workers may attribute the numbers of elderly people in hospital to inappropriate or avoidable admissions, although a range of other explanations may explain this incidence. The perception has generated discussion and stimulated research with the goal of reducing avoidable admissions in the elderly.

The existing evidence base for identifying avoidable admissions is fragmented and incomplete. The published literature does not uniformly reflect the view that admissions of the elderly to hospital are disproportionately high. So far, the problem has not been adequately defined or scoped. A well-developed evidence base would require:

- Universal definitions of key terms such as 'avoidable', 'inappropriate', 'unnecessary', 'planned' and 'unplanned' admission to hospital.
- An agreed description of the target population.
- Clear and consistent counting rules that allow hospitals to track avoidable admissions as a measure of quality control.
- An *a priori* decision about what rate of avoidable hospital admission is unacceptable and therefore constitutes a problem.
- A national effort to scope the potential problem in the field. This effort would include studies that seek to quantify the problem of avoidable hospital admissions, examining all types of hospital admission *in the elderly* at a national level.
- On identification of a problem, a systematic research effort to identify the predictors and causes of avoidable hospital admission in the elderly. This research should consist of well-designed studies that use a range of methodologies and analysis, providing convergent evidence for causal pathways to avoidable admissions.

Development of such an evidence base allows accurate problem identification, ensuring that resources are not unnecessarily applied to fixing a problem that does not exist. If a problem is evident, systematic identification of the pathways to avoidable admissions will drive a comprehensive and appropriate intervention strategy and ensure appropriate resource allocation strategies.

Developing the evidence for proposed interventions

The capacity of various interventions to reduce or avoid unnecessary hospital admissions of older people is asserted on grounds of widely varying merit. The evidence for proposed interventions exists at least three levels:

- The literature reports strong research evidence that the intervention achieves the intended goal, and it may be implemented with confidence
- The intervention has strong face validity or human worth, and should be considered, but further work is needed to establish its efficacy
- Informants mention the intervention often and assume its value, even though there is little evidence now to indicate that it reduces admissions, and further investigations should be made before it is applied for this purpose.

A multi-level approach

Causes of avoidable admissions arise at four levels of health care - prevention, primary care, ambulatory care, and hospital care. Preventive measures reduce the risk of the condition's occurring. If the condition does occur, successful management at the level of primary care stops it from escalating to the point where ambulatory care is required. In turn, successful management at this level stops acute admission to hospital care. Following discharge from hospital, appropriate management at the ambulatory and primary care levels, decreases the likelihood of re admission. To manage avoidable hospital admissions effectively, all these intervention points must be addressed.

A multi-pronged approach to reducing avoidable admissions would include:

- *Primary prevention*: Preventive programs at the primary level that aim to increase over all health and wellbeing, decreasing the likelihood of chronic disease, vaccine preventable diseases, falls and malnutrition; and improving the nutritional status of older people.
- *Primary intervention and management*: Programs of care for sufferers of chronic diseases and ambulatory care sensitive conditions, including programs that promote self-management; access to GPs, including in rural and remote areas; pharmaceutical programs that plan and coordinate drug treatments to reduce the risk of adverse drug events arising from reactions or interactions.
- *Pre-hospital*: comprehensive geriatric assessment and management; quick response services; primary options for acute care.
- *Alternatives to admission*: Hospital in the home or RACF; geriatric day hospitals; community-based palliative care services
- *Pre-admission*: Staffing of EDs; targeted admission procedures; a decision-making tool to help make appropriate admission decisions; short-stay observation wards
- *Preventing re-admission*: Coordinated discharge planning practices to reduce the risk of readmission; step-down services; transitional care; rehabilitation.
- *Workforce issues*: Attract and retain qualified professionals to the aged care sector; increase the skill level of existing workers.
- *Integration and coordination*: Integrated funding systems that allow patient care to be coordinated across levels of health care delivery; communication; case management.
- *Consumer focus*: Acknowledgment of the broader needs of the ageing population; avoidance of ageism; a system of advance directives that allow patients and their guardians to make end of life decisions, reducing the need for unsolicited care.

Elements of such a multi-pronged approach include several current Commonwealth, State and Territory initiatives to encourage self-management of chronic and ambulatory care sensitive conditions; broaden the range of community-based and domiciliary aged care options; increase access to GP care (especially in underserved rural, remote, regional and peri-urban areas); promote coordinated care, and the like. Examples of prospective actions directed specifically to reducing avoidable admissions for the elderly may include:

Primary prevention

Routine health assessments of elderly people

Systematic reviews of Australian studies suggest that routine health assessments of elderly people for preventive care and early intervention have positive effects on their health, with a flow-on effect for hospital admissions. Further studies are needed to determine what elements of health assessment are essential to ensure its effectiveness. Given the quality of the evidence-base, this research could be conducted at the same time as implementing the intervention.

Primary intervention and management

Primary options for acute care

Preliminary evaluation of this New Zealand pilot program suggests that making some acute investigations and treatments available for GPs in community and practice settings reduces avoidable hospital admissions. The evidence base should be developed through multiple RCTs in Australian populations before this intervention is implemented widely.

Routine assessment and planning of medications at any point of the care continuum

Two studies identified in this literature review achieved a reduction in avoidable admissions via review and planning of elderly people's medication, conducted by a pharmacist. Given the prevalence of adverse drug reactions as a cause of avoidable admissions, this type of intervention warrants further investigation. Specifically, RCTs need to examine the elements and timing of the most effective intervention.

Pre-hospital actions

Quick response services or admission avoidance teams

Preliminary evidence gleaned from pilot programs suggests these services may reduce avoidable hospital admissions. These services could be implemented on the basis of further RCTs that investigate long- and short-term patient outcomes and consumer preferences.

Alternatives to admission

Hospital in the home

Hospital in the home is a widely used model of alternative care that has a high degree of logical appeal. However, the evidence currently suggests that hospital in the home is not a means of reducing avoidable hospital admissions. Given that it is cheaper and in some cases preferable for consumers, it warrants further investigation. Development of the evidence by further trials of different models of hospital in the home may show it does reduce avoidable admissions.

Geriatric day hospitals

Geriatric day hospitals provide an alternative model of care with logical appeal for reducing avoidable admissions. However, preliminary evidence does not confirm that implementing this model of care reduces avoidable admissions. RCTs and systematic reviews are needed before geriatric day hospitals can be either discounted or implemented as an alternative model of care for reducing avoidable admissions.

Palliative care

Although the literature has little to say about whether the availability of palliative care services in the community – in homes, RACFs, or hospices – reduces admission to hospital of terminally ill people, it has face value and strong human merit. Trials should be conducted to examine the impact of responsive community-based palliative care on hospital admissions.

Pre-admission

GPs in the emergency department

Preliminary evidence suggests that GPs reduce avoidable admissions when they are available for patient consultation in the emergency department. Further studies using stronger methodologies (randomised controlled trials) in Australian settings are required before this intervention should be implemented widely. Longitudinal assessment of patient outcomes and cost benefit analysis is also required to ensure this intervention does not compromise quality of care or increase overall costs by delaying investigations.

Introduction of short-stay observation wards

The evidence for the efficacy of short-stay observation wards is sound. Results of the systematic review of currently available evidence confirm that this intervention can be implemented.

Gerontology staff and doctors and nurses in other specialties consulting in the emergency department

A number of studies suggest that gerontology staff and specialist doctors and nurses are all helpful in reducing avoidable hospital admissions, changing the culture and increasing the confidence of EDs dealing with elderly patients. Well-designed studies should be conducted in the Australian context of the impact of staff specialists in EDs, and in providing consultation both within hospitals and for primary care, as a tool for preventing avoidable re-admissions.

Development of an admissions protocol for use in the emergency department

A number of decision-making protocols have been developed for use in hospitals to reduce avoidable admissions. However, before one or more of these tools can be disseminated for widespread use, a number of shortcomings must be resolved. First, there is a current emphasis on studies that use retrospective data and seek to establish criterion related validity, and the tools need to be studied in prospective randomised controlled trials (RCTs). Similarly, a protocol needs

to be developed that can be adapted to suit the range of services available at the hospital and alternative models of care available in the community, and that resolves difference of opinion about what constitutes an avoidable hospital admission.

Preventing re-admission

Discharge planning

Discharge planning is a widely used model of care that has intuitive appeal and a number of positive provider, facility, and consumer benefits. However, the current evidence-base does not support widespread implementation of discharge planning as a means to reduce avoidable hospital admissions. There is need for further investigation of the merit of discharge planning using RCTs that investigate short- and long-term effects.

Advanced health directives

A system of advanced health directives has logical appeal for reducing avoidable hospital admissions, supported by evaluation of a few pilot programs. Use of advanced health directives can be encouraged on the basis of existing accurate, legally sanctioned systems. Further trials should examine the efficacy of these directives, and systems adopted to ensure that primary and secondary care providers are aware of their existence and the process for carrying them out.

Workforce planning initiatives

Elderly people are typically exposed to multiple risk factors, and often suffer multiple conditions that range in severity and duration. Their health needs are complex.

One of the main problems identified in the literature and by informants is that the aged care sector does not have enough suitably qualified workers. The residential aged care sector is reported as having the lowest requirements for continuing professional development for nurses, and its current staff profile is described as older nurses not highly skilled in acute or subacute care. Similarly, there are insufficient geriatricians at all levels of the health care system. The view of specialist geriatricians is that few workers in other health care sectors possess the knowledge or the skills to manage the complex health conditions of the elderly. This lack is further exacerbated by the shortage of qualified geriatric nurses and doctors who could support them by providing secondary consultation services.

Programs of tertiary institutions are said to contribute to this problem: undergraduate and post-graduate programs in aged care are inadequate, and there are no clear pathways for nurses and allied health professionals who want to specialise in geriatric care. Current Australian efforts to promote aged health care as a desirable field through financial and social incentives are in the early stages of development, and will continue to need to be pursued with vigour.

Future workforce development initiatives should build the system's capacity to ensure elderly people receive high quality care from professionals who are knowledgeable about their unique health needs. A second goal should be greater access to qualified aged care health workers areas currently understaffed, such as residential aged care facilities and rural areas.

Examples of initiatives to attract and retain qualified professionals into the aged care sector, and to encourage family based support include:

- An emphasis on ongoing professional development for doctors, nurses and allied health in aged care and the needs of older people.
- Specialised undergraduate and postgraduate tertiary programs and clear pathways of study and experience for professionals wishing to purse a career in the aged sector.
- Financial rewards and other incentives that promote work with older people as a desirable field of work.
- Performance management systems to ensure the delivery of high quality care.
- An increased requirement for those who want to work in the residential aged care sector for continuing professional development of a high standard.

- Continued growth of high quality, flexible and responsive support systems for unpaid family carers, and community attention to increasing the availability of informal carers.

An integrated health care system that facilitates coordinated patient care

While there are efforts at most levels of the health system to reduce a 'silo' approach to health services, structural barriers to integrated health care for consumers still remain. First, communication networks among services are sometimes *ad hoc*, fragmented, and inconsistently designed and managed. Patients cannot be tracked through the system and their care may not be managed easily across services. Secondly, funding sources, models and accountability structures sometimes act as barriers to providers who want to implement an integrated plan of investigation or treatment. A fully integrated health care system would entail:

- Integrated funding systems and services that allow patient care to be coordinated across different levels of the health care system.
- Clear and open lines of communication that facilitate coordinated care.
- Development and implementation of a widespread system of case management for patients whose care needs occur across different levels of the health care sector.
- Funding systems and structural mechanisms that enable practitioners to treat their patients across different levels of the health care sector.
- Funding systems and structural mechanisms that encourage, rather than discourage, investment in preventive programs and alternative models of care by the private sector.

A consumer focus and a broader strategy to meet the needs of an ageing population

Reduction of ageism

There seems to be a discrepancy between the opinions health care workers expressed to us at interview and results in the literature about the extent and nature of avoidable hospital admissions. Health care workers tend to overestimate the number of avoidable admissions, and their opinions focus on inappropriate presentation at hospitals by elderly people for non-medical reasons. Nevertheless, elderly people who need care are heterogeneous, and the causes of presentation are highly varied.

Some informants interviewed in this project felt that the concern over avoidable hospital admissions in the elderly was generated partly by prejudice and bias against the elderly among health care workers. These attitudes are partly reflected in the use of derogatory terms such as 'bed blockers' and an overemphasis on 'inappropriate attenders' in research studies.

Ageism may be an aspect of the recognised lack of consumer focus in the health care sector – an issue currently receiving attention in a number of national, State and Territory initiatives. Health systems in developed countries are generally based around hospitals, even though hospital stays are unique and isolated incidents for patients. Commentators note that, in resource-constrained times, this creates an emphasis on reducing costs for the sector and motivating patients to use available services appropriately. Inadvertently, they say, prioritising fast treatment and cost efficiencies in this way may be at the expense of individual patient needs and personalised care, and in practice may increase the likelihood of readmission and decrease the efficiency of the system.

In addition, while the tradition that the doctor makes the expert decisions about treatment is gradually giving place to a much stronger emphasis on patients' collaboration in making decisions, in busy hospitals - and especially in emergency rooms and outpatient clinics - this change in culture is hampered by entrenched practices and lack of time for clear communication.

Health literacy

Coupled with the poor health literacy of some parts of the older population and a reported tendency by older patients to be more compliant with advice than their younger counterparts, this means even less change for this cohort in this setting.

Socio-economic status and health

The Australian population is ageing. This demographic change is projected to have a significant socio-economic impact on our society. Socio-economic status is clearly linked to health status, and the health of the elderly depends on factors that occur independently of the health care system.

Accordingly, the success of interventions to reduce avoidable hospital admissions or improve the health and wellbeing among elderly people, if implemented only within the health care system, is restricted by their inability to address broader, distal determinants of health. An effective health care system must recognise and engage the broad determinants of health.

In the literature, and in some other countries' approach to meeting the needs of older people, aspects of a broader strategy to address the impact of ageing on the population and thus reduce avoidable admissions include:

- A stable and secure income that provides an adequate standard of living.
- Affordable, adequate housing options that accommodate disability and are quality controlled by the government.
- Programs to increase literacy and health literacy levels.
- Access to timely and high quality health services that meet the specialised needs of elderly people and promote wellbeing throughout the life cycle.
- Access to affordable public transport, with special attention to ensuring health services are easily accessible by appropriate public transport.
- Structures and systems that support the lifestyle choices of elderly people.
- Special structures and support to maintain diversity and meet the unique needs of elderly people of different cultural backgrounds, and elderly people living in rural areas.
- Flexible work systems that allow elderly people to participate in the paid and unpaid workforce for longer.
- A strategy to reduce ageism, increase positive attitudes towards age and ageing and facilitate the personal growth of elderly people.

Broader needs

In 2001, the Commonwealth government released the *National Strategy for an Ageing Australia*. The policy covers such areas as income, infrastructure (housing, transport, communication), flexible work options, ageism and education. A linked policy is the *Aged Care Program*, which seeks to promote health aging and provide quality care for frail older people. Several Australian States and Territories also have whole-of-government strategies on ageing. In 2001, New Zealand published a whole-of-government *National Positive Ageing Strategy*. Planning within the hospital and health care system can usefully inform and be informed by these broader strategies.

Appendix 1

Initiatives in avoiding unnecessary hospital admissions in the elderly

Appendix 1 presents a list of current and proposed initiatives to reduce unnecessary and avoidable hospital admissions in the elderly at local, statewide, and national levels, and selected initiatives from the United Kingdom, New Zealand and Canada.

Anna Howe, Richard Rosewarne, and Janet Opie completed a related task for AHMAC in 2002 (*Mapping of services at the interfaces of acute and aged care*. Balwyn East: AACS 2002). The list below includes the relevant data in that report, and adds initiatives identified by informants at interview, and drawn from international, State and Territory websites.

New South Wales

Interventions before admission to hospital

- The main intervention to reduce admissions from residential care was **outreach visits** by a geriatrician in response to a request by the facility.
- The **Home and community care program (HACC)** is a community support program providing community care as an alternative to nursing home, hostel or institutional care. The HACC program under which the Home Care service is just one of the available provisions, helps frail aged and younger people with disabilities to live independently in their own homes and take part in the community. It also provides services to carers of people with disabilities and the frail by providing respite that gives them a break from their caring. The HACC program provides services like Home maintenance and/or modification, Meals or 'food services', Transport allied health services, Community based nursing Education and training and Respite care services.*
- **NSW Care for Carers Program** is a New South Wales Health initiative developed to provide additional help for carers of elderly by providing respite, transport, counselling and education to carers.†
- A joint service development initiative between Hunter Health and the Hunter Urban Division of General Practise is initiating the **Regional After Hours GP Service (RAHS).** The aim of this service is to reduce the number of non-urgent, ambulatory patients seen by ED to increase resources available for emergency patients. The service includes a telephone triage and advice line, funded transport services for patients who need to see a GP but don't have own transport and home visit services for patients who can't travel. The service is expected to be running by July 2003.†

Summary of NSW Health falls injury prevention investments

- **Management Policy to Reduce Fall Injury Among Older People**: NSW Health has developed a management policy to reduce fall injury among older people that aims to establish a long term coordinated approach to fall injury prevention. The policy focuses on a coherent approach to fall injury reduction - addressing the risk group of older people before and when they are at greatest risk and in the major settings in whey they spend their time ie. community; supported aged care; and acute care settings.
- **Rural and Metropolitan-based Falls Injury Prevention Programs:** Both a rural and a metropolitan-based falls injury prevention program have been established in NSW. The metropolitan program is a 3 year collaborative effort by six metropolitan Area Health Services, termed Make a Move, and the Rural Falls Injury Prevention Program is a 3 year collaborative initiative of ten rural area health services in NSW.
- Both of these programs aim to coordinate best practice health promotion for the prevention of falls in older people, with a primary focus on increasing the access of older people to fall-safe activities designed to improve muscle strength, flexibility, balance, and fitness.

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- **Preventing injuries from falls in older people – best practice guidelines**: The resource details the causes of falls, highlights existing evidence regarding what works in falls prevention, identifies falls prevention strategies for local areas in NSW, and identifies potential roles for Area Health Services in the prevention of falls.
- **Falls risk indicators for NSW:** In an effort by NSW Health to identify where resources regarding falls prevention are likely to occur in the next 15 years, information for each Area Health Services and each Statistical Local Area has been generated regarding: population projections by age group; fall-related bed day projections by age group; and fall-related health service costs and utilisation.
- **Plan and deliver exercise for older adults – allied health professionals:** NSW Health proposed to Fitness NSW that a new certification category for health professionals who provide exercise classes to older adults be piloted for 3 years in NSW. Health professionals proposed for this category include those with a degree containing units in anatomy, physiology, biomechanics and/or function (eg. Exercise Scientists, Physiotherapists, Occupational Therapists, Therapeutic Recreation and Physical Education Teachers).
- **NH&MRC – falls injury prevention research**: A partnership with the NH&MRC has been established with a consortium of partners, including NSW Health. This grant is being coordinated by Dr Stephen Lord at the Prince of Wales Medical Research Institute. Proposed research projects are to be conducted in the following areas: human balance – measuring stepping and walking stability; risk factors for falls, specifically looking at vision and neuropsychological functioning; preventing falls in acute and rehabilitation hospitals; preventing falls and fractures in 'at risk' groups; identifying safe footwear and walking surfaces; and developing falls assessment screens validated for use in a variety of settings.
- **Training, accreditation and insurance, mapping the requirements for fitness professionals and other physical activity instructors:** The University of Western Sydney undertook a mapping exercise for NSW Health to identify organisations and the postcode location of their physical activity leaders by Area Health Service. It is possible that some of these physical activity leaders could be trained to conduct physical activity initiatives with older people 65 years and over.
- **NSW Falls Injury Prevention network:** The Falls Network was established in 1993, its purpose being to bring together, on a regular basis, health professionals interested in the issues of falls prevention in older people and to provide a venue where ideas could be discussed, resources shared and research reviewed. An active email discussion list for the network also exists. NSW Health funds a part time project officer to oversee the administration of the network.

Interventions in hospital

- **The DEED project. Discharge of Elderly from the Emergency Department** that commenced in the Prince of Wales Hospital some years ago has been fully evaluated and dissemination of these findings has contributed to the spread of this kind of service. The service provided intensive outreach with multidisciplinary medical, allied health and nursing interventions).*
- **Geriatric medical consultancy.***
- Admission to a **Geriatric Medical Unit** for active treatment.*
- **Step down units** for slow stream rehabilitation to complete treatment before discharge.*
- **Inpatient post-acute care** was provided in conjunction with ACATs that were based in hospitals. However, not all ACATs in non-metropolitan areas had access to inpatient beds; hence this service was not available in all areas.*
- **Discharge planning** was the most widely available service in metropolitan areas, and can be taken as routinely available, with varying levels of ACAT involvement.*

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

Initiatives following discharge to prevent readmission

- **Check up phone call or visit.** This initiative is now standard and therefore is widely presented.*
- **Rehabilitation and nursing services** organised by the hospital and provided in the community post discharge were widely reported in metropolitan areas. In non-metropolitan areas, nursing services were more widely available than rehabilitation services.*
- **The Rehabilitation in the home** service at Prince of Wales Hospital began under the NDHP in 2000. The involvement of each patient's doctor is a major feature of the program, using the Enhanced Primary Care Case Conferencing item. In this intervention, the placement of an enrolled nurse as part of a community team to work with people who live alone, took patients home from hospital, checked the food levels in the fridge and provided follow up support, has reduced readmission considerably.*
- **Community nursing** was available in most areas but did not necessarily mean ready access or that the level of service was always sufficient. Further, in many cases, this service was not a special post-acute nursing service but rather referral to standard community nursing services.*
- **Interim care services** were the least widely reported of all post-acute services. Interim residential care services was reported by only three metropolitan and two non-metropolitan ACATs, and interim community care services were reported by five metropolitan and two non-metropolitan ACATs.*
- In non-metropolitan areas, **specialist outpatient geriatric medical clinics** were the most widely available services providing rehabilitation in community settings; these services were reported by half the ACATs. Few ACATs reported availability of inpatient settings to which admission could be made directly from the community or other rehabilitation services for HACC clients or more dependent aged care package clients*
- **Veterans' Health** funds a range of services, including home nursing, throughout NSW. †
- **St George's Hospital, Sydney,** has a **Hospital In The Home Nursing Program** to avoid transferring nursing home patients to hospital. (It also has an ambulatory care ward - a day area for medical procedures that do not require admission, but this is used more for younger people than the frail elderly.) †
- The NSW **Chronic and Complex Care Programs progress report, March 2003** reports that all chronic and complex care priority health care programs aim to prevent crisis situations and unplanned urgent admissions to hospital. Programs in place are for respiratory disease, cardiovascular disease, heart failure, stroke, diabetes, cancer, and palliative care. Interventions exist in each program to deter the frequency of non-urgent presentations at EDs.†

  Interventions developed and implemented in the respiratory priority health care programs include:

  - Active promotion of early discharge to nursing outreach programs
  - Identifying people at appropriate points in their care for improved targeted interventions.
  - Developing and implementing of clinical pathways to care.
  - Engaging GPs and other service providers.
  - Developing of a database to track patients and measure outcomes.
  - Implementing evidence based therapies.
  - Providing coordination across the continuum of care.
  - Providing carer support.

  Interventions developed and implemented in the heart failure priority health care programs include:

  - Developing multidisciplinary-shared care involving GPs, patients, rehabilitation providers, Aboriginal Health education officers, and community and support groups.
  - Engaging GPs in care plans.

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- Developing discharge planning tools.
- Establishment of an emergency point of contact.
- Establishing a heart foundation clinic.
- Improving standardised assessment guidelines.
- Mapping of services to identify strengths and gaps and development of personalised care plans.

Interventions developed and implemented in the stroke priority health care programs include:

- Developing information management solutions.
- Improving care pathways.
- Patient education on self-management strategies.
- Providing education and information to patients and carers on stroke, risk factors and treatment and complication indicators.
- Monitoring compliance with treatment and liaise with GP's and community services.
- Case conferences across services.

Interventions developed and implemented in the diabetes priority health care programs include:

- Developing and implementing standardised protocols, structured documentation and education on best practise in diabetic foot care fro doctors, nurses and podiatrists.
- Developing the capacity of the local Aboriginal communities to manage diabetes.
- Providing an after hours emergency hotline.
- Conducting a community program with GP's which enables them to access recall/reminder systems for diabetes management.

Interventions developed and implemented for the cancer and palliative care priority health care programs include:

- Introducing area wide standardised best practise guidelines for the management of cancer both in acute and community settings.
- Providing greater coordination and continuation of care and fast track triaging of known cancer patients presenting to hospital unexpectedly for exacerbations of treatment.
- Providing a coordinated 24-hour, 7-day response for registered palliative care patients to palliative care advice.

Future initiatives - policy and planning

- The **NSW Action Plan on Dementia** provides details on strategies in place for 2001-2003 that may influence the levels of avoidable hospital admissions directly or indirectly. The **Department of Ageing, Disability and Home Care** seeks to improve the coordination of health, community and residential services at a local level and fund an initiative to improve data collection through dementia advisory services. **NSW Health** will fund two projects to develop and implement strategies to resolve gaps in service provision and promote responses to dementia needs in local planning processes. †

Victoria

Hospital Admission Risk Program (HARP) funded projects 2002/2003 †

- **Austin & Repatriation Medical Centre's community link rapid response service** is a service for older people presenting to the ED, Banyule, Darebin or Eltham Community Health Centres, or local GPs, and implements case management strategies for each individual. †
- **Bayside Health's better care for older people project** provides a comprehensive community-based support program for older frail and chronically ill people, focussing on cardiovascular and pulmonary disease, cancer, diabetes and mental illness. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- **Eastern Health's primary care liaison project**: †
  - **The Eastern Health GP Liaison Team** seeks to ensure effective communication and coordination around discharge planning, Hospital in the Home admissions, HARP, and Hospital Demand Management strategies.
  - **Rapid outreach response** provides a multi-disciplinary rapid assessment response to frail, older clients who have experienced a significant increase in dependency as a result of their medical status.
  - **Community hospital integrated response program (CHIRP)** enhances the interface between ED and primary health care providers to ensure that clients are better managed in the community.
  - **Complex care for older patients** improves outpatient support and care for older clients with complex medical conditions who are at risk of readmission and extended length of stay.
- **Latrobe Regional Hospital's prevention and reduction of avoidable emergency presentations** aims to prevent or reduce the ED presentations to LRH of elderly people by connecting them to appropriate community and GP services. †
- **Melbourne Health**: A comprehensive community hospital team approach to **falls prevention** targeting high risk patients Develop and implement an integrated model of falls risk management across the community and hospital sectors, targeting people who present to Royal Melbourne Hospital's ED owing to a fall. †
- **Northern Health's Aged care outreach service** is a multidisciplinary service model with community and residential care providers to increase the capacity of the local health system to respond to the needs of older people with chronic or terminal illness. †
  - **Broadmeadows Health Service's Aged care** shared care model to develop and pilot a shared care arrangement for elderly people, involving GPs, to provide high quality community, in-patient and post discharge care to older people to assist them to live as independently as possible.
  - **BECC GP Liaison Initiative** seeks to enhance clinical practice and improve communication processes in relation to the needs of older people with complex needs by targeting the interfaces between GPs, sub-acute, hospital, residential care, ACAS and primary care settings.
- **Royal District Nursing Service** is increasing the use of the **domiciliary medication management review** with at-risk elderly clients (65+) in the Frankston Hospital catchment area to reduce medication-related emergency presentations and admissions. †
- **St Vincent's Health's Treating the elderly in the right place** facilitates appropriate community care by establishing an integrated system with the capacity to provide comprehensive assessment and coordination of services from a centralised hub, including access to a suite of service options including acute, sub-acute and post-acute. †
- **Southern Health's Care in context** provides a range of interventions that identify and manage complex conditions outside acute settings, including earlier assessment, risk profiling, improved triage protocols, care coordination and a widely accessible, multi-agency care plan. †

Interventions before admission to hospital

- Victoria aims to improve the level of appropriateness in targeting the **HACC program** by adding three tiers of provision. The main advantage of the tier system is to counteract the tendency for the whole program to become focused on people at the higher end of the scale of disability and dependency, which in turn would divert resources from the preventive end of the spectrum. Clients would be admitted to a new 'higher tier' of the program by conforming to a specified number of service requirements or hours of care. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- **Acute-Primary Care Liaison services** are established in all hospitals in Victoria. These services focus on the interface between the community, GPs and hospitals, with the aim of reducing hospital admissions and readmissions and have been detailed in DHS reports.*
  - **Chronic Disease Management (CDM)** initiatives are established in all Health Services. These programs are designed to facilitate management of patients with specific conditions in the community with appropriate supports rather than having frequent admissions to hospital. The focus is on providing patients with education and information to enable them to manage their condition at home with appropriate supports and follow-up.*
  - **Royal Melbourne Hospital's** winter packages program established an interdisciplinary Pre-winter Assessment Clinic for patients at risk of repeated unplanned admissions to hospital. The clinic provides multidisciplinary assessment and review of health maintenance plans with involvement of GPs and includes provision for follow-up home visits as required.*
  - **Specialist clinics**: The primary goal of specialist clinics is to support people living at home and to institute a strong preventive focus particularly in older people.*
- **Hospital In The Home** is an active program in Victoria: all 42 hospitals participate and targets are set for substitution rates. HITH is used extensively to provide support to older people in their own homes or in residential care facilities to avoid admission to hospitals. There have been recent further advances in the use of HITH directly from EDs. There is an extensive evaluation of the Epworth Hospital in the Home Project.*
- **Medical Safety Breakthrough Collaborative:** An initiative is being developed to reduce patient harm associated with medication use by 50%. With high percentages of hospital admissions being accounted for by problems with medication use (20%), the hopeful spin off is a reduction in the number of avoidable admissions due to the inappropriate use of medication. †
- **MBF** currently funds two projects that increase the level of independence in the treatment of asthma and diabetes. This project is currently under development. There is no evaluation data available at the moment, and the interventions are not restricted to the elderly. †

Interventions in hospital

- **Care coordination** was described as a process designed to improve coordination of care for patients who can be supported in the community. The aim of Care Co-ordination is to provide coordinated care to patients who presented frequently to the ED, or who were at risk of frequent presentations.*
- **Short Stay Observation Units** are a form of ED intervention designed to admit patients who are expected to be discharged within 24 hours and so divert admissions from inpatient wards.*
- **Rapid Assessment and Management Units**, designated inpatient areas that provide comprehensive and timely assessment of selected patients admitted via the ED. RAMUs are staffed by senior staff within the ED and aim to develop a management and discharge plan for patients who need urgent medical treatment but who are expected to be discharged within 48 hours.*
- **Inpatient care** of older patients who are likely to need continuing care following their acute hospital stay is managed through **Geriatric Evaluation and Management Units**. All acute hospitals provide access to GEM beds.*
- **Medical Assessment and Planning Units** are designed to streamline management of patients requiring medical intervention by providing rapid assessment, planning and coordination of medical care for the duration of the hospital stay, and beyond if applicable. These units aim to improve coordination of services and treatment planning, for example, by timely access to pathology reports, and to reduce length of stay.*
- **Functional Maintenance Programs** are designed to prevent decline in function of elderly patients who are waiting in hospital for placement and to reduce the "hospitalised culture" that can develop over the course of longer hospital stays.*

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- The **Austin Hospital** employs a physiotherapist to assess back pain in the outpatient department and to screen for specialist orthopaedic attention.
- **Ballarat Hospital** is currently in first year of a three year HARP strategy. A specialist clinic has been set up with a cardiac specialist and a multidisciplinary team (physio, OT, dietician). Elderly patients have a multidisciplinary assessment. In the case of COPD, the patient may be referred to the speech pathologist to have swallowing assessed. The strategy tries to get GPs to meet with specialists so that GPs learn what resources are available (not just medical services) and when patients may need to access them. Social support I offered for crises (eg a wife is anxious about her husband's breathing difficulties and calls an ambulance early). Care is available for carers on learning to manage the condition. The hospital is setting up maintenance programs such as exercise groups (specifically for these patients, who are not usually able to join mainstream groups, because it is too disturbing for others). †

Initiatives following discharge to prevent readmission

- **Check up phone calls or visits.***
- Four acute hospitals were identified as organising **post-acute rehabilitation services** in the community through affiliated Community Rehabilitation Centres and two reported Rehabilitation in the Home initiatives. There is, however, much wider access to community based rehabilitation through the network of 46 Community Rehabilitation Centres that operate across Victoria.*
- **Community nursing** is arranged and provided through PACs and HITH programs. One particular example is the Home Care Nursing (Warringal). On discharge, trained nurses go to the home of the patient to assist in wound management, bandages etc which reduces readmission. Similarly, the Cardiac Rehabilitation fast track precedes this intervention to assimilate patients back into the home.*
- **Interim Community Care** is provided through the Post Acute Care Program. PAC provides packages of community support services, and is distinguished from CACPs and Community Options packages.*
- **Liaison and support** in organising admission to residential care is provided by staff of hospital social work departments.*
- **Beds for clients awaiting placement**. In two services, beds were provided by either recommissioning hospital beds that had been closed or purchasing an external facility operating as extra services Commonwealth residential care services.*
- **Interim care in the home** involves additional services delivered in the home while awaiting residential care placement.*
- The Victorian **Cognitive, Dementia and Memory Services** provide assessment, diagnosis, information and advice in each DHS region, and **Psychogeriatric Assessment Teams** can provide assessment and treatment. †

Private sector

- **Melbourne Private, Warringal, and Knox Hospital** offer a **Cardiac rehabilitation fast track**, a program to assist patients after discharge with assimilation back into the home, especially after open heart surgery, and with information. †
- **Warringal and Knox Hospital** provide **home care nursing on** discharge, wound management, bandages etc. A trained nurse goes to the home to assist. The program aims to avoid readmission and assist discharge. †

Proposal for regional palliative care

- Dr Peter Martin, Clinical Director, Palliative Care Services at **St Vincent's Hospital, Eastern Palliative Care** proposes a regional approach to palliative care services that he believes will help reduce avoidable admissions and readmissions, reduce distress, and increase quality of life for those patients requiring support and palliative care for a terminal illness.

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

For the inpatient setting, Dr Martin proposes a model of **tiered inpatient services:** Acute beds based in St Vincent's and Box Hill Hospitals to ensure access to diagnostics, interventions and other specialised teams; and sub-acute beds at St. Vincent's and Caritas; Box Hill and Peter James, with the two teams having one overarching regional director.

Enhanced community hospital beds, comprising nominated beds in community hospital, enhanced environment, flexible small numbers to enable more patients to be palliated closer to home and families, predominantly care from 'generalist' nurses and GP.

Dedicated enhanced nursing home beds: Consideration should be given to a pilot of 'step down' facility for sub-groups who fall into system gaps, such as those that need slow stream for hospice, mostly nursing, care but need other specialist health professionals infrequently.

Consultative and Outpatient services: Integrate a consultative and outpatient service with both the Inpatient Inner and Eastern Campus Teams. It is a multi disciplinary outpatients service that provides supportive and palliative care, staffed by a palliative care physician, a psycho-oncologist, a clinical psychologist, other allied health providers as needed, a nurse consultant, and receives referrals from EPC, GPs, oncologists and other tumour stream teams, and community services.

Community Services (EPC): The model suggests a skilled structured assessment at key trigger points: for those with complex needs, remain with predominant care providers and seen by other specialists on team (and by RDNS), For those with average needs, shared care with RDNS and GP with regular review, Those with minimal complexity are referred to RDNS and GP with re-assessment at next trigger point or unexpected crisis.

Day hospice initially should provide respite and social interaction. It could later be expanded to include limited rehab (allied health input would need to be expanded) and symptom control (increased skill mix of nursing staff and dedicated medical time). †

Other statewide initiatives

- Family and Community Development Committee of the Victorian Parliament is conducting an inquiry in to discharge planning in public hospitals: *Quality of care and efficient separation of patients in Victorian hospitals.* http://www.parliament.vic.gov.au/fcdc/pending%20inquiries.htm. Its terms of reference are to examine the timeliness, quality of care provided and efficient separation of patients in Victorian Public hospitals, with a particular emphasis on -
  - The availability of beds, methods of access and circumstances of admission of patients to emergency services
  - The frequency and reasons for hospital emergency departments invoking 'ambulance bypass' for patients needing emergency services; and, any changes in the decision-making processes for reporting and administration of such 'bypasses'
  - The timeliness of treatment provided to patients in emergency departments
  - The number of and detailed reasons for patients needing to stay for extended periods in emergency departments
  - The number of critical care, acute care and sub-acute care beds available on a daily basis and the methods of access and circumstances of admission of patients to such services
  - The number of people on waiting lists for elective surgery and the circumstances of their admission, with particular reference to waiting list categories, surgical specialty and the timeliness of service delivery
  - The methods used to monitor and evaluate efficient discharge planning with particular reference to the adequate provision of continuity of care and unplanned re-admission
  - Methods used to assess the accessibility of hospital services within urban, suburban, regional and rural areas in Victoria

  It is also looking in to bulk billing and how the proposed changes might affect presentations to hospital. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

Queensland

Interventions before admission to hospital

- **A Medical Domiciliary Assessment Service** for individuals in the community and in residential care was provided as outreach from the Geriatric Division Extended Care Unit of a major metropolitan hospital. *
- **Chronic Disease Management programs** aim to promote self-management and hospitals had formed links with Divisions of General Practice in developing these programs.*
- **An Elective Procedures Admission Centre** Included pre-admission assessment and provision of aids and appliances and required that post discharge services be planned prior to the admission taking place. *
- **Ambulance Services** offer further potential for action in the community to avoid presentation to the ED. The system of triaging patients into five categories of severity and urgency of needed medical attention is a standardised national scale.*
- **Queensland Health Statewide Action Plan: Falls Prevention in Older People 2002-2006**
- Participation in the **National Health Development Fund (NHDF) General Practice Integration Program (GPIP)** Suite 2. Largely focuses on integrated chronic disease management. A key performance indicator of these projects is a reduction in the demand on public health system services.

Interventions in hospital

- **Short Stay Observation Units** were identified in hospitals in two Health Districts. One of these was a trial of a 23 hour Emergency Assessment Unit that began only in December 2001, and the other was an established Ultra Short Stay Unit. The SSOU study carried out in Victoria by Campbell *et al* (2001) included field visits to three other SSOUs in Queensland hospitals and the report shows that these units were focused on patients other than elderly people presenting at the ED.*
- **A GP Phone Advice** Service provided by an ED in one Health District. *
- **Early identification of at risk patients in ED** aimed to identify individuals at risk of admission and possibly delays in discharge, and organised the provision of services to avoid admission or after discharge. *
- **Hospital in the Home** offered in a number of Queensland Health hospitals
- **Hospital in the *Nursing* Home** currently being trialed at the Gold Coast and South Brisbane
- A major tertiary hospital validating a tool for identification of patients at risk after discharge from medical and surgical wards within hospitals
- **Enhanced Primary Care Initiatives** being undertaken in Brisbane's Northern Zone
- **Community Hospital Interface Program (CHIP)** located in several hospitals in the South East corner of Queensland. Community Health Nurses are located in emergency departments to liase between the hospital and community to organise care and support for older persons presenting to the ED who do not require admission
- **Quality Use of Medicines Program**. Implementation of the Australian Pharmaceutical Advisory Council (APAC) National Guidelines for the Continuum and Quality Use of Medicine Between Hospitals and Community guidelines across all Queensland Health hospitals

Initiatives following discharge to prevent readmission

- The **Mater Hospital** has a **Domiciliary Allied Health Acute Care and Rehabilitation Team** (DAART), a patient-focused, timely response model to meet the needs of patients in metropolitan

Brisbane who require access to allied health interventions in the homes. The team responds to referrals from hospitals, EDs, GPs, community workers, RACFs, and clients themselves. †

- **A coordinated care trial** in the **Brisbane North Division of General Practice** aims to coordinate timely access to appropriate services in order to reduce avoidable admissions. †
- **The Gold Coast Hospital's** avoidable admissions project supports families and carers on wound management &c. It also extends into residential care settings. †
- **Shared Care Outreach Program (SCOPe)** is a collaborative arrangement between the Toowoomba Health Service and Division of GPs to provide alternatives to inpatient care for suitable patients who are discharged to the care of their GP. *
- **The Transitional Care initiative**. The range of action of these interventions typically extended from early identification of support needs through outreach assessment, pre-admission clinics or in the ED, to arranging the delivery of needed services to clients remaining in the community or on discharge at any point.*
- Two hospitals had **designated wards** to provide more appropriate care for those waiting placement, with an emphasis on ADL and normal daily living activities rather than bed based care.*
- **Use of beds in a state government nursing home** for Nursing Home Type Patients as interim residential care.*
- **Use of places at a local hostel** for post acute care for clients assessed as low care; these patients could receive care for up to three months. *
- **A Rehabilitation Day Hospital** provided a continuation program from in-patient rehabilitation on a day only basis within an integrated multi-disciplinary approach.*

Workforce

- Queensland Health Aged Care Workforce Project – review issues related to the Aged Care workforce in Queensland

Future Policy and Planning Initiatives

- Queensland Health Aged Care Strategy 2004-2011 has been developed to guide the delivery of aged care services in Queensland. The *Strategy* is primarily targeted to those 65 years and over and those 45 years and over who are from Aboriginal and Torres Strait Islander backgrounds and covers seven key policy areas - Acute Hospital Services, Care for Older Aboriginal and Torres Strait Islander Peoples, Community Care, Dementia Care, Mental Health Services, Residential Aged Care, and Workforce

South Australia

Recent initiatives and plans outlined by South Australian Departmental officers

The plan in South Australia is to now 'populate' the space in between community and acute care with a service that is best described as 'acute community care'. They intend to undertake significant systemic and culture change. They are trying to build the evidence base as they go, make the services universally available, and ensure they have sustainable governance arrangements - not just a patched up network of local providers.

They are forming a governance structure called the **Acute Care Community Alliance Coalition**, an incorporated body under the *Associations Act*. They will be provided funding for case finding in EDs, and to take referrals from GPs. All calls will go to a single call centre. They will broker work out, keep performance statistics, and monitor and evaluate outcomes. There is a plan to broaden the scope, once the processes are well established, to cover discharge planning, post-acute, mental health, and residents of RACFs. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

Interventions before admission to hospital

- A number of initiatives involving **Divisions of General Practice** and General Practitioners were identified as playing a key role in reducing admissions to acute care.*
- **Enhanced Primary Care** Items have experienced a high take-up in South Australia. The State Government has funded some practice nurses from the EPC Assessment Item, and each Division of General Practice employs an EPC coordinator to work with GPs and others following guidelines developed by the College of General Practice. GP Liaison Nurses employed by the RDNS are also involved and more general practices are employing their own Practice Nurses.*
- **GP Home Link services** were set up in the mid 1990s with State Government funding and are now well established. These services aim to reduce presentations to EDs, and facilitate prompt return to the community. The services are directed to individuals who do not need medical interventions requiring admission to hospital. GP Health Link takes referrals from emergency departments at a cost of $600-$700 a referral. *
- **The GP Home Link** in the Eastern and Northern Metropolitan Regions is based in the community and are operated by two non-government- agencies and provide a 'quick response' both in terms of instigation of services within 24 hours, and usually in a much shorter time, and for a limited period, usually only one week.*
- **In the Western Metropolitan Region, The Queen Elizabeth Hospital (TQEH)** runs the Interface Services which provide short term care, up to a maximum of 14 days in the patient's home while waiting for other community services. It aims to prevent further hospital admission as well as providing short-term post acute care. *
- **The Domiciliary Interface Pre Placement Package (DIPPP)** is a joint Western Dom Care – TQEH service, available to TQEH patients assessed by the ACAT and who agree to a home based package of care while waiting for residential aged care placement.*
- **Hospital in the Home** programs are now routine in all Adelaide hospitals.* The program out of the **Royal Adelaide Hospital** is reporting one-day reductions in average length of stay. †
- **After Hours Primary Medical Care Trials** to enhance access to after hours primary care, were to start shortly in South Australia as part of the Commonwealth national initiative. *
- **Pre-admission clinics** were not aimed at reducing admissions but were for patients whose admission was planned; these clinics were recognised as contributing to shorter LOS as the patient work-up had been done in the community before they were admitted. *
- **Advanced Care in Residential Living (ACRL)** is a program designed for residents of aged care facilities, and is an initiative of the Advanced Community Care Association. ACCA liaises directly with GPs and allied service providers when developing projects. ACRL is intended to reduce their admissions to acute hospitals and to reduce their length of stay if admitted. This will be achieved by providing advanced nursing care in residential facilities, combined with extra medical care when it is required. †

Interventions in hospital

- **The Emergency to Home Outreach Service (ETHOS)** at the Flinders Medical Centre was a variation on the GP Home Link services detailed above. ETHOS was established in 1996 under the NDHP. It was a collaboration between aged care and community care providers, and picked clients up in acute care. It ran for two years with a return of $3 for each $1 dollar invested.*
- Adelaide's acute hospitals have **Geriatric Medical Units** which have an acute focus, but it was reported that these units and associated ACATs had been struggling to hold their own, as there has not been an increased investment in post-acute services.*
- **Step-down units in acute hospitals**. Step-down units at the Royal Adelaide Hospital and the Flinders Medical Centre to provide care for patients who were no longer receiving acute care and were waiting discharge home or admission to residential care.*

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- **Discharge planning** was not specifically identified as a post-acute service, as it is now widespread. It was noted, however, that the role of the RDNS liaison nurses based in the acute hospitals has changed with the introduction of the **RDNS Call Centre**. This Call Centre was mentioned in accounts of other services that involved the RDNS and was viewed very favourably as an effective means of communication and freeing nurses' time for direct care. *

Initiatives following discharge to prevent readmission

- **Check up phone call or visit.** This service is now recognised as standard.*
- **The Homestroke service** operates from the Queen Elizabeth Hospital and St Margaret's Hospital in the Western Metropolitan Area, and the **Rehabilitation in the Home** service is based at Flinders Medical Centre, in conjunction with the Repatriation General Hospital, in the Southern Metropolitan Area. Both services provided short term rehabilitation at home, for the purpose of completing treatment and ensuring that the individual was re-established at home, as much as to reduce the stay in acute care or bridge to post-acute services. *
- **The Dom Care Quick Response Services** provide 6 weeks post-acute care, for HACC eligible clients, and ran in parallel with RDNS post-acute services. *
- **A Hospital in the Home service** operated by Aged Care and Housing in conjunction with private hospitals was more appropriately described as Hospital to Home. The service aimed to enable early discharge for private hospitals.*
- **The Acute Transition Alliance** demonstrates how post-acute care services providing time limited community care have evolved and are continuing to evolve. It was intended to take clients on discharge from hospital and from GP referrals, but the latter did not eventuate. *
- **The Home Rehabilitation and Support Program** is jointly funded by the State and Commonwealth Governments and includes Commonwealth Flexible Care places. HRASP began operation in January 2002, and features of planning for the service include both continuity and change from the Acute Transition Alliance. *
- **Interim residential care** has developed in South Australia as one of a range of care options provided by services that had a range of action across several levels of intervention, including GP Home Link and ETHOS, as detailed above, and by the Acute Transition Alliance. Only one service, Tregenza House, was established as a 12 bed interim residential care unit, with state government funding to provide respite care and post-acute short stay care for up to one month.*
- Use of country hospital beds for non-acute care patients was noted, but appeared incidental and was not elaborated. The five Multi-Purpose Services in rural areas of South Australian were seen to be running well. *

Western Australia

Interventions before admission to hospital

- **Homeward 2000** is a service developed by the Health Department and the General Practice Division of WA in collaboration with Sir Charles Gairdner Hospital. The service provides home help and nursing support to enable people who would normally require hospitalisation for an acute condition to be treated at home. *
- **The Royal Perth Hospital Home Link Program** includes Occupational Therapist visits before admission for elective surgery to assess for possible modifications that could facilitate post-operative return home. As with other pre-admission clinics, this service is not intended to reduce risk of admission, but to contribute to shorter LOS and prompt discharge home.*
- **Hospital in the Home** provides alternatives to acute inpatient admission and has developed only more recently in WA than in other states. The aim of the operation is to establish a GP coordinated 'Community Based Health Service' in Perth to provide effective clinical management of acute medical problems in the homes of a target group of patients who would otherwise need hospitalisation. This in turn will hopefully reduce the number of short-term hospital admissions

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

for acute episodes which could have been managed at home given the provision of appropriate home care.*

Interventions in hospital

- **Discharge of Elderly from the Emergency Department (DEED)** services operate at metropolitan tertiary hospitals with EDs. The DEED service at Sir Charles Gairdner Hospital (SCGH) is incorporated into Home Link service.*
- **Departments of Geriatric Medicine** are the main form of inpatient care with services aimed at minimising length of stay (LOS), through coordination of care for the frail elderly at risk of functional loss or complex discharge. Inpatient rehabilitation services have been largely concentrated on people who have experienced a sudden and major loss of functional independence, and who can be expected to regain function with rehabilitation.*
- **A restorative care or step down care unit** is provided by Royal Perth Hospital through the purchase of beds in a purpose built unit at the Mercy Private Hospital. This unit allows for more time before discharge and aims to return patients home. This service is not part of the Care Awaiting Placement program.*
- Another variant on restorative care has been the establishment of a **multi-disciplinary accelerated rehabilitation** service in a general medical ward at Sir Charles Gairdner Hospital. Patients assessed as requiring only short term in-patient rehabilitation (for less than 10-12 days) were concentrated in a designated area with staffing for accelerated rehabilitation and other activities such as a dining room to facilitate return to normal daily living.*
- There have also been recent initiatives to reduce LOS by developing services focused on **particular clinical conditions**, such as orthopaedics and respiratory illness. These services work with relevant medical units to identify patients whose stay can be reduced, and the risk of readmission lessened, by providing community management and education of their condition. *

Initiatives following discharge to prevent readmission

- **Check up phone call or visit.** It is not standard practice for all patients discharged from hospital, but is targeted to 'at risk' patients. Departments of Geriatric Medicine have developed a risk screening tool for this purpose. *
- **General rehabilitation services**: The Community Rehabilitation Program was commenced at Sir Charles Gairdner Hospital in mid 2001 as a component of Home Link, absorbing and broadening out from previous services that targeted particular categories of rehabilitation, such as stroke or orthopaedics. The goals of the services are to provide rehabilitation in the home to reduce hospital stays and reduce admissions to nursing home care. *
- **Orthopaedic services**: Royal Perth Hospital and Bentley Hospital have retained focused orthopaedic rehabilitation services, for patients who require intensive allied health assistance for 2 to 4 weeks on return home.*
- **Care Awaiting Placement (CAP)** services are operated as part of a metropolitan wide program under DoH guidelines. CAP has several components, with interim residential care and community packages providing a range of flexible services for those waiting for permanent residential care, those requiring slow stream rehabilitation and those likely to be able to remain in the community with added support services.*
- **Interim Home Care Packages** provide Personal care with a non-therapy focus to support individuals who are waiting at home for permanent placement, Commonwealth packages or HACC services and who are at risk of admission to an acute hospital.*
- **Elderly Post Acute Packages**. The aim is to decrease length of stay, improve functioning and reduce the level of community services needed on an on-going basis.*
- Purchase of nursing home places for **Care Awaiting Placement**. CAP is designed to fund temporary accommodation and care for patients who are waiting for permanent residential

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placement, and thereby make beds available in the acute hospital for other patients requiring acute hospital intervention. *

- **Slow stream inpatient rehabilitation** is designed for the frail elderly person who after an acute care episode, has been assessed by the rehabilitation team as being able to benefit from long term rehabilitation provided in a residential facility. The specific aim is to return the patient to their optimal level of independence and return home in 2 to 6 months. There are two funding models. In one, the State fully funds the CAP bed and in the other, the State pays only an administration fee to the residential care facility to provide Commonwealth subsidised places. *
- **Use of non-acute county hospital beds.** In regional areas where there are no nursing home beds in state government or other residential aged care facilities, DoH funds Nursing Home Type Patients in local hospitals. Between 290 and 310 beds are funded as NHTP at any time.*
- A wide range of **specialist clinics** are located in day hospitals operated by the acute hospitals and they provide for early assessment and intervention as well as follow-up care on discharge from an acute episode. *

Recent work and proposals reported by Western Australia Departmental officers

Western Australian officers have completed a number of analyses of older people's presentations to hospitals, including triage categories, time of day of presentation, how they got to hospital, and whether they had seen a GP beforehand or not. The results of these studies are documented in internal background papers. †

A number of pilot initiatives are running. For example, a **residential call line** is being piloted in the northern metropolitan area: work has been done with an RACF, upskilling nurses and getting them used to using a professional to professional nursing call line. The nurses receiving calls have a set of algorithms to work through to decide if the patient should be sent to hospital, see a GP, or wait until the next day. This initiative has been going well for four months, and nurses report more confidence with the process. The experience to date, however, has thrown up problems in access to pathology and radiology: there is nowhere but hospitals to access support services. †

Other initiatives attempt to ensure that patients who need hospitalisation go to the **nearest secondary hospital**, not the major teaching hospitals. The current reality is that the three big hospitals take most of the cases, and there is under-used bed capacity in the secondary hospitals. †

There are plans to develop a **mobile assessment capacity** in a GP integration unit that aims to avoid people being unnecessarily taken to an ED. The service is planned to do assessment in RACFs and in patients' homes. †

Hospital In The Home without having to go to an ED is a new thing in WA. It is hoped that the GP mobile assessment service will allow more use of hospital in the home and hospital in the nursing home as they will have the necessary diagnosis. **General Practice Divisions WA** have a contract with the Department of Human Services to provide hospital in the home. This is year three. It has been very slow to get going, owing to a lack of GPs, and an unwillingness of hospitals to refer. There appear to be some cultural barriers (eg 'If it's not happening in the hospital, it's not as good"). The Department has done work with GPDWA to increase the acceptance of nursing diagnosis of UTI and two other diagnoses that doctors will accept without a doctor being present. †

They are in the process of assisting a GP division to apply for money from the Commonwealth for **after-hours service development funding**. Many after hours clinics in Perth are presently collocated with private hospitals. WA is looking at alternative models, and assisting Divisions to propose alternatives such as a model that includes nurse practitioners.†

There are initiatives under development in WA for the development of **chronic illness care plans** with GPs and hospital specialists, and to encourage the use of EPC items and care planning. †

Sir Charles Gardner Hospital has done a study of **"Frequent Flyers"** –people with a chronic illness who did not have a GP. It was funded under the NDHP and is not yet published, but publication is expected soon. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

An initiative in **Rockingham** with a Division of General Practice and a hospital sponsors a **"Get to know your local GP"** project. If a patient comes to ED with no GP, they are given a voucher for a bulk-billed comprehensive medical assessment, in the hope that people will get to try GP services and use ED less. This project has just started as a 6-month trial. †

A significant project with the metropolitan **Ambulance** service is a 5 month project (that aims to be self-sustaining) to developed a **single point of contact for an outreach service** for the elderly in the post-acute and home care (CACP and HACC) target groups, and facilitates early transfer of people from home to hospital or hospital to home. A GP can phone and say someone is not coping. †

There are some **domiciliary-based rehabilitation services**. †

There are now so many projects and programs, WA officers say, that the situation is confusing to discharge planners and GPs. It is difficult to find out who can access what package or service. Even in the face of the available options, lengths of stay are still longer than necessary, and avoidable hospital admissions still occur. In response to this confusion, and the impenetrable nature of some program guidelines, they are designing a **website that says what is available and how to access it**. This will go live by the end of July 2003. It is also hoped that the website will break down some of the barriers to referral that were generated by informal policies developed locally at hospital level, when people did not publicise the availability of services in the community to GPs and consumers, because they feared they would be overwhelmed by demand if they did not control access from the hospital. †

Since the Department's central policy office has been promoting this raft of initiatives and making options known, referrals to hospital in the home has increased markedly. An overarching **monitoring and evaluation strategy** is being developed as part of the Department's demand management strategy (of which this group of initiatives around avoidable admissions is a subset). †

It is hoped that this focus on what is needed in the sub-acute area is the way into a long-term whole of system change management process. It has been sold as the way to reduce demand on emergency departments, but eventually it will need to develop into a broader change management strategy. They have noted the extent to which asking providers and facilities to focus on people and their needs has been a 'wake up call'. Many providers and facility managers have noted how little they think in those terms, and how recent incentives in the system have made them think of people as costly complex outliers to be avoided or moved on. †

A key success factor in getting initiatives moving is development of a cross-functional team in the central office -a team of clinicians and policy people, who all have very different ways of looking at the problems. They have invested in experiential learning team development processes around the issues, and this has resulted in an increased capacity to think in whole of system terms. There is a functional review of the health system underway, and they hope that what has been started will be supported by that review and its recommendations. †

Tasmania

Interventions before admission to hospital

There are a number of statewide projects with Divisions of General Practice, including:

- Commonwealth funded **Southern Tasmanian After Hours Primary Medical Care Trial** (AHPMCT). The model aims to improve the links between the GP and ED using a triage system; after hours calls to local GPs can be sent to an on call "central" GP who will return the call and provide a home visit if required.*
- **General Practice Liaison Officers (GPLO)**. The National Health Development Funds (NHDF) provided financial support for all three major Tasmanian hospitals to employ a GPLO to set up systems within those hospitals to enhance information flows between primary and acute care providers, enhancing discharge planning. *
- **Improved Health Outcomes** was the subject of a Memorandum of Understanding (MOU) signed between DHHS and the Tasmanian General Practice Divisions (TGPD), the Southern Tasmanian Division of General Practice, GP North and the North West Tasmania Division of General

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Practice in 2001. This initiative builds on more general cooperative relationships that have been established between GPs, through the Divisions of General Practice, and DHHS and hospitals. *

- **Hospital in the Home** is now a standard program for relevant care modalities and is provided by all hospitals.*
- **The Aged Care Rehabilitation Unit (ACRU).** This service can prevent further acute admissions after an initial acute episode by providing outpatient treatment by a multi-disciplinary team. *
- **Statewide Client Registration System.** This Project will provide a unique identifier to assist clinicians in accessing patient health histories and to help facilitate coordination of care across the health sector. †
- **Residential aged care** provides a high quality of care and accommodation that meets the needs of individuals, protects the health and wellbeing of individuals receiving aged care services, ensure that aged care services are provided towards people with the greatest needs, facilitates the independence of individuals receiving aged care services ensuring choice, and rights available to all other people in Australia and provides equity in access. †
- **The Home and Community Care program** is a key program supporting people in their homes. HACC services are provided in the client's home or community to frail people, to people with a severe, profound or moderate disability and to their carers. †
- **A demonstration project** for non-admitted falls includes referral to a GP, or to a rehabilitation service for a day or week, and a pamphlet with advice about preventive measures and monitoring. A difficulty has been people with poor eyesight who cannot read the pamphlet. Success depends on the support people who can deal with the many people who have problems with illiteracy or confusion or unaddressed emotional effects.†

Interventions in hospital

- **The Dwyer Rehabilitation Unit** at Royal Hobart Hospital tries to improve functioning and independence by providing in-patient rehabilitation to a diverse group of patients over 18 years of age, and is focused on the acute to home or to residential care interface. †
- A pilot program of **Innovative Care Rehabilitation Services** at Royal Hobart: Hospital comprises one 25-bed rehabilitation pilot, and two more pilots are planned in dementia and disability. †
- **Royal Hobart Hospital's GP Liaison Officer** aims to improve the integration of general practice into post-acute care, by working across all interfaces. A particular aim is to reduce LoS through involvement in discharge planning, improvement of post acute functioning and decreasing risk of readmission. †
- There are also GP liaison projects at **Launceston General Hospital** and **North West Regional Hospital** (Burnie). However, in the north west the hospital finds it cannot retain GP liaison officers – they do not want to live there for both social and financial reasons. †
- There is a **general practice integration demonstration project** at Royal Hobart Hospital. †
- A project to improve awareness of the **enhanced primary care Medicare discharge planning items** is under way with all three major Tasmanian hospitals, and aims to improve linkages with GPs in discharge planning, and coordination across the continuum of care. †
- The NHDP 3 funded **Burnie Acute Care at Home** project was established in the North West as an alternative acute care at home service for patients who otherwise would have required hospitalisation.†
- **The outreach service** of the North West Hospital in Burnie was based in the ED, and its operation includes sending staff out to treat residents in nursing homes instead of admitting them to the hospital, as well as managing discharge from the ED. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

Initiatives following discharge to prevent readmission

- **Check up phone call or visit.** To the extent this service is provided, it is part of routine care.*
- **Aged Care Rehabilitation Unit** (Hobart Day Hospital): This service aims to prevent admission to acute care and to residential care for persons living at home, and improve functioning and independence by providing out-patient rehabilitation in the community. It has a geriatric rehabilitation focus, working on inpatient and outpatient service linkages and is a very active program.*
- **Package of Care Program** was being developed on a statewide basis by DHHS. The package approach was to strengthen existing package approaches and to extend coverage in five areas: post acute care for older people discharged from an acute hospital that were going home, mental health care, dementia care, disability and the frail aged. *
- **The Royal Hobart Hospital** set up its Transitional Care Unit in December 2001 for a trial period of 10 months. The aims of this unit are to reduce LOS by facilitating transfer to another setting and thereby increase efficiency of management of acute beds, and to improve patient functioning and independence by providing rehabilitation. †
- **The use of district or country hospital beds** as an interim residential step for patients from the major acute hospital who have been approved for residential care and are unable to return home occurs in only a few locations. This approach involves the use of beds in rural or district hospitals where sub-acute and nursing home type patients are transferred in the catchment areas of Launceston General Hospital in the north of the state (and 5 associated district hospitals) and North West Hospital in Burnie, in the north west of the state.*
- **Innovative Care Rehabilitation Services (ICRS)** in Hobart. This includes the provision of one 25-bed rehabilitation pilot with two more in the stage of development (dementia and disability). †

Comments on initiatives by Tasmanian Departmental officers †

Potential solutions include more nursing and allied care services, and nurse practitioners who could see people in the shorter term and do triage. Solutions to avoidable admissions certainly include:

- greater access to GPs and other primary care (low GP numbers mean that in some parts of Tasmania there are waiting lists for GP appointments)
- adequate funding for GP liaison
- care coordination, brokerage, and quick response (including allied health)
- A short stay unit in the EDs

Advanced Health Directives about treatment or hospitalisation needs to be known by the family and the RACF. Care plans are also vital for treatment - especially in chronic illness planning - and for opportunities to intervene earlier.

The plethora of care packages and the variety of uncoordinated home services are confusing, even for health professionals.

There is a shortage of respite beds, and great difficulty in finding a carer in an emergency. As a result, older people admitted for acute reasons get stuck (at present there are 80 older people in hospitals awaiting placement (50 in RHH, 20 in LGH, and 10 in NWRH).

The aim in Hobart is to build up access to community care. There is an additional problem in Launceston and Burnie in that transport is very difficult for older people to get to and from outpatient clinics. Options include an on-demand or a scheduled bus service, but long distances are involved. Transport is a whole-of-government issue, but services have not learned to coordinate.

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

Australian Capital Territory

Interventions before admission to hospital

The ACT implemented **Health First**, a 24 hour, 7 days a week call centre, in February 2001. The call centre offers a telephone based assessment of a caller's symptoms and treatment recommendations, provides general health information and has an extensive database of health service providers for information.

- **Proposed Nurse Practitioner Project 2004**. This project has been submitted to the Australian Government for joint funding. It proposes to investigate a syndicate of three Nurse Practitioner (NP) models that operate within, and collaborate across, three identified aged care service areas within a defined health service district/jurisdiction. These contexts are the residential aged care facility (nursing home), the community and the acute care hospital. The purpose of this project will be to ensure a collaborative continuity of care through internal referral and consistency in case management. If Australian Government funding is obtained, this project will explore aged care NP models as a new level of service and a way of providing high quality health care for people who do not have easy access to the health system.
- A **Link team** between The Canberra Hospital's (TCH) Emergency Department (ED) and ACT Community Health works with staff to avoid admissions where possible. Increased services are provided to the ED, with a Community Liaison Nurse (CLN) attending from 0900-1730 seven days a week, and a physiotherapist attending in the afternoon. The aim of this team is to:
    - Prevent admissions if care can be provided in the community
    - Begin the discharge planning processes earlier for clients who are admitted to TCH
    - Initiate early referral to inpatient allied health services to facilitate earlier and safer discharge
    - Liaise with ward based Community Liaison Nurses, Clinical Nurse Consultants and the treating allied health staff
    - Provide support, advice and education to ED staff regarding community services
    - Ensure that clients who are discharged from ED have access to community support services if required.

The Link team provides 24 hours discharge planning services to TCH. All clients over the age of 70 who are being discharged from ED are, whenever possible, reviewed by the CLN prior to discharge.

Similarly, Link provides 24 hour rapid response nursing cover to ACT Community Health's clients. Clients at risk of admission or readmission are able to contact an RN to seek assistance.

Calvary Hospital ED has access to the CLN between 0830 and 1700 hours 7 days per week.

- A **coordinated care trial** was undertaken in the mid to late 1990's. The trial which was based in the **ACT Division of General Practice,** aimed to provide coordinated care through case management. This service is now provided for older people through the Enhanced Primary Care (EPC) items. An Enhanced Primary Care Demonstration Site project has been established in the ACT. The project aims to increase the utilisation of the EPC items in the 75 and over age group.

Initiatives in hospital

Objectives of the Calvary Hospital NDHP4 (National Demonstration Hospital Project Phase 4) project called the **Calvary Acute Aged Bridging Service** (CAABS) include a multidisciplinary rapid and risk assessment for elderly patients - a 48 hour, 4-bed rapid assessment unit in the ED under the care of emergency physicians who determine the need for treatment, discharge or admission.

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- The 9-bed **ACT Convalescent Service** was opened on 23 September 2002 at Calvary Health Care ACT. The service provides up to 2 weeks low care for people following an acute hospital episode. It is open to all ages, but will be most beneficial for those needing an opportunity to regain daily living skills and achieve full potential for independence with additional services. Both The Canberra Hospital and Calvary Public Hospital are able to access the 9 beds. More recently, those from private hospitals have been able to gain access. Client presentations have overwhelmingly been over 65 years of age and live alone.

ACT Community Health provides dedicated discharge planners (Link Community Liaison Nurses) to both TCH and Calvary hospitals (public and private). This provides access for clients with complex needs to coordinated discharge planning information, advice or referral services and follow up if appropriate by nursing and/or allied health services.

Initiatives following discharge to prevent readmission

- **ACT Transitional Care Program:** This program began in November 2001 as a joint ACT and Commonwealth Government initiative. The program provides 11 transitional care beds and is funded under the Innovative Care and Rehabilitation Service pilots. The program provides up to 12 weeks of post-acute in-patient care for older people who no longer require acute care, but who cannot return home immediately. The aims of the pilot service are to provide the opportunity and resources for older people discharged from an acute hospital episode to regain skills of the activities of daily living and achieve their full potential for independence through improved physical functioning, enable these people to return home where possible, or where it is not possible to enter residential care at a lower level than would otherwise have been possible. In March 2003 the pilots were expanded to include 8 community-based packages with enhanced allied health support. The pilot has been extended to June 2005.
- **GP liaison officers** in both public hospitals assist patient referrals back to (General Practitioners (GPs) and continuity of care.
- **The Rehabilitation Independent Living Unit (RILU)** at The Canberra Hospital was developed as a stepdown facility to follow on from an acute rehabilitation episode, or as a lower level care setting for those requiring a specific rehabilitation episode for example amputee retraining. RILU provides a 14-bed hotel-style room unit and is primarily for patients recovering from brain injury or multiple trauma, but also for stroke and amputees. The service aims to provide individual programs for restoring independent living, and then links to community services for post-discharge support.
- **Falls and Balance Tertiary Clinic and the Falls Prevention Community Outreach Program (COAP):** A tertiary clinic located at The Canberra Hospital and two secondary, community based outreach clinics have been established. The clinics focus on older people who are at high risk of falling, with multiple or unknown risk factors that require multi-disciplinary assessment and interventions. They take referrals from across the ACT community including the local hospitals, primary health care services and aged care services. A referral service has also been established to ensure that any ACT resident over the age of 60 years who is attended by ACT Ambulance Service will be offered follow up by the Community Outreach Assessment Program.
- All ACT Health Falls Prevention services work together to provide education programs, resources and support for health care staff, aged care workers and the ACT community. This work also includes supporting and facilitating the development of early intervention and prevention programs.

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- Community Health provides:
    - Free short term (up to 12hrs) domestic assistance for public patients for clients living alone or for those with carers experiencing difficulty.
    - Rapid response short term rapid response intervention services for OT, Physio and nursing services.
    - Access to 24 hour community nursing services.
    - The ACT has funded a two year pilot project with a Residential Aged Care Liaison Nurse. The Nurse commenced in this position in February 2003. This position is addressing systemic issues in managing older people applying for placement in residential aged care facilities. The Nurse has been successful in establishing referral links between the hospitals and aged care providers, and through continued work is aiming to establish a centralized waiting list for placement which will facilitate access to aged care services.

  The aim of the pilot is to streamline the process for older people in hospitals, particularly public hospitals, requiring access to residential care places. The Nurse will work with all stakeholders to identify barriers to access and initiate solutions to these barriers. The initial focus of the pilot will be on streamlining the process of applying for and accessing aged care places within residential facilities. Streamlining this process will assist both clients and the public hospitals.

- Relevant Grants/Research: Proposed research funding for 2004/05 includes the following:
    - Home Telecare for Managing Congestive Heart Failure – Deployment Trial in the ACT
    - Information Technology in Aged Care – Home Telecare System in the Residential Aged Care Sector
    - Australian Government's Information Technology Online (ITOL) Program – A Framework for Data Transfer in Home Telecare: innovative wireless technologies to transfer data from in-home monitors to health professionals

Northern Territory

Interventions before admission to hospital

Please note: In rural and remote areas, alongside primary care interventions, community based aged care services such as HACC and CACPs are likely to be significant in preventing hospital admission even though their main aim is to prevent admission to RACF. For example, meals on wheels services are frequently the only source of nutrition.

- **Multi-Purpose Services:** MPSs are proposed for Nhulunbuy and Tennant Creek. MPSs typically integrate acute hospital care, residential aged care, community health and HACC programs. Any savings achieved by integrating services can be reinvested into a range of health and community care priorities in each centre. MPS represents a unique opportunity for Tennant Creek and Nhulunbuy to enhance their health and aged care services and develop a model of service delivery which is viable. Initial consultation with both communities has occurred and a project officer has been appointed to progress the development of service plans. †
- **The Home and Community Care Program** provides a foundation for the provision of community based aged care services across the Territory. HACC is particularly important in both service and support of other programs, such as CACPs in remote communities. †
- **Community Aged Care Packages** provide planned and coordinated packages of care to help older people with complex needs to remain living in their own homes. In the Northern Territory CACPS are widely distributed in remote communities. CACP are often the most appropriate form of care for smaller communities that cannot sustain a residential or flexible service. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

- **Aboriginal and Torres Strait Islander Flexible Aged Care Services**: These flexible models of care are proving to be successful for medium size Aboriginal communities where a mix of residential, respite, day and community care is being provided to meet each community's needs. †
- **Extended Aged Care in the Home (EACH)** Packages: Commonwealth has recently announced 20 EACH packages for the Northern Territory. These packages will provide high-level care for people in their home environment. †

Services provided through the acute care system:

- There are five public hospitals in the Northern Territory located in Darwin, Nhulunbuy, Tennant Creek, Katherine and Alice Springs. There are no specific aged care units located within the public hospital system.*
- The Northern Territory does not have a resident geriatrician.*
- As part of normal practice at **Alice Springs Hospital**, the bed manager/discharge planner **reviews all admissions** before bed allocation to identify potential for diverting potential bed admissions to the Day Procedure Unit, or establishing community support for outpatient treatments and early identification of psychosocial challenges. Planned elective surgery admissions and the organisation of pre-admission allied health assessments are also reviewed. †
- Discharge planners, as part of their general role within hospitals, coordinate services and options for people who are aged. *
- A **Community Resource Unit** operates within the Royal Darwin Hospital and assists with discharge to ensure the coordination of appropriate services for patients post-discharge.* Work undertaken by discharge planners and the Community Resource Unit includes referrals to community nursing; referrals to allied health services for short term therapy; referrals to remote community health centres; referrals to slow stream rehabilitation outpatient programs; and active networking and referral to relevant community support agencies †

Initiatives following discharge to prevent readmission

- **Darwin Transitional Care Project**. This Project is managed by the Department of Health and Community Services and is not hospital based. Clients are those identified as being at risk of preventable admission to residential care or readmission to acute care, and who wish to remain in their own home, who stands to benefit from the services provided and for whom on-going community care options can be established.*
- A **Hospital in the Home** service operates from the Royal Darwin Hospital.
- **Katherine Transitional Care Unit**: The KTCU is a joint Commonwealth and Northern Territory pilot project funded under the Aged Care National Innovative Pool and is the outcome of extensive consultation with health providers, consumers and community based organisations about the aged care needs of the Katherine region. The Unit, which is currently under development, will focus on the prevention of inappropriate admission to residential aged care or extended hospital admissions by assisting those people who require additional assistance in making the transition between acute care settings and their home. †

* Initiatives listed by Howe *et al* (2002) † Initiatives reported to the present project

Other Australian initiatives

Australian Medical Association

The AMA has an initiative in the use of **advanced directives** that allow people to specify their individual treatment in the event that they become incompetent at some stage in the treatment of patients in later life. It emphasises the impact doctors have on the level of use of these directives by having prior knowledge of the existing wishes of the individual, hospitals may not admit terminally ill patients or intervene with life-saving treatments if the interventions contravene the wishes of the individual. The guidance of medical practitioners (particularly GPs) in ensuring that the option for advance directives exists also increases the likelihood that appropriate steps will take place to observe the directives. They can do so by consulting with the patient on issues such as:

- the older person's legal interests
- financial decisions
- making a will
- executing a power of attorney
- appointing a proxy decision maker

The **AMA's submission** to the House of Representatives Standing Committee on Ageing's inquiry into long-term strategies to address ageing over the next 40 years included a summary of recommendations for provisions for the elderly. AMA recommendations on the level of avoidable hospitalisations in the elderly were:

1. When an older person is no longer able to remain at home, a range of residential care options, which can cater for their physical, functional and psychosocial needs, should be available.
2. Provision must be made for the appropriate remuneration of the involved medical practitioners who should participate in relevant quality improvement programs in aged care facilities.
3. All staff employed in residential aged care facilities should be appropriately trained and be involved in continuing educational programs.
4. Medical practitioners with expertise in aged care should be an integral part of each general hospital's services and be available for consultations and advice.
5. General hospitals should provide a designated geriatric medical service with beds for acute care, assessment and rehabilitation.
6. General hospitals should also provide appropriate multi-disciplinary outpatient services to address the complex syndromes of older age such as falls, dementia and incontinence.
7. Our architects must design 'smart' houses and residential aged care facilities which are adaptable and can have multiple uses, and utilise medical and communications technology which can help in the monitoring of an individual's health – eg with smart beds with auto analyser programs. These new houses should be cheap to produce, modular, energy-efficient, and easily mass-produced - but individual.
8. The Government will need to encourage better use of technology with rebates available for these services.
9. If an older person has need for acute care in hospital, they should then have access to transitional care if appropriate before either returning to the community or entering a residential aged care facility.
10. The expansion of the hospital in the home range of acute hospital substitution models, where the patient's GP can be responsible for creating and managing the care plan and ensuring continuity of care, provides a model for both appropriate and cost-effective care for many older people.
11. To achieve innovative changes to the health system, Australia will need to train an increased number of medical practitioners who work in specialities associated with ageing.
12. One AMA suggestion is for residential aged care facilities to appoint a GP Facility Adviser.
13. The AMA argues that GPs must be encouraged to provide care to older Australians, but the costs and complexities associated with visits to aged care facilities are huge hurdles. To achieve this

objective, the Government must urgently address the funding, staffing and facility issues surrounding the provision of high quality medical care in residential aged care facilities.

14. Undergraduate, postgraduate and continuing education of health care providers must address and emphasise the care and, in particular, health promotion among older people.

The AMA believes the Commonwealth and State Governments should address some short- and long-term goals in avoidable admissions for the elderly. In the short term:

- Increase in the number of incentives to encourage health professionals to work in the aged care sector.
- Better continuity of care by enhancing integration and communication between the relative states and territories and the local areas within these states.
- Expansion of the variety of transitional care types available.
- Greater level of specific psychogeriatric care.

In the long term:

- Better integration of training and education between educational institutions and aged care facilities.
- Expansion of the HITH range of submissions models.
- Adaptable aged care facilities that can provide access to medical and communications technology that can help in monitoring an individual's health.

An important problem to be addressed is the critical shortage of GPs who are prepared to visit aged care facilities. Travelling time, lack of a structured patient environment and the large number of non face to face services required of GPs all add to the reasons for doctors' not wanting to service the aged care facility sector. The AMA indicates the need for guidelines to be developed that include the removal of 'bed blockers'" to residential aged care facilities where transitional or rehabilitative care can take place away from the hospital. This sort of intervention would be similar to the HITH model, and should not be discounted as an option for inclusion in future initiatives to prevent avoidable hospital admissions.

The AMA (2003) also recognises the need to for workforce planning. They cite poor remuneration, extra administrative tasks, a lack of integration of medical services and the absence of adequate facilities as factors that act as disincentives for health care workers to enter in to the aged care sectors. They recommend that the government provide incentives, integration of the current silo system of health care and the creation of transitional and psychogeriatric care services to encourage workers into the aged care sector.

Aged and Community Services Australia

ACSA recently published proposals for future directions in community care which could significantly influence the level of avoidable hospital admissions. They say community care services in future will be client centred and aim to support lifestyle choices that enable people to remain independent and in their own communities. ACSA says the key characteristics of a connected, flexible service include:

- Appropriate assessment (regularity of, requirements for individuals, self identification of capacities and needs).
- Client and carer involvement (carer and client directed decision-making, client and carer rights and choices and appropriate links to informal community networks and supports).
- Service responses available (short term interventions, effective support to carers, technological support at home).
- Organisation (collaboration with providers, multidisciplinary approach, resources at organisational level, evidence based policy and practice).
- Relationships with primary health care and hospitals (standard recording procedures across primary, acute, residential and community care settings and effective linkages with acute and primary health care sectors

Australian Society for Geriatric Medicine

ASGM has issued a series of position statements on issues within the speciality, three of which have particular relevance to avoiding unnecessary admissions of the elderly.

ASGM Position Statement No. 8: Geriatric Assessment and Community Practice:

1. Geriatric assessment can be defined as a multidimensional, interdisciplinary, diagnostic process used to quantify an older individual's medical, psychosocial and functional capabilities and problems, with the intention of arriving at a comprehensive plan for therapy and long-term follow-up. It is part of the core skills and knowledge base of specialists in geriatric medicine.
2. Geriatric assessment has proven efficacy in affecting optimal living location, reducing hospital readmission, maintaining optimal cognitive and physical function and possibly reducing mortality. Geriatric assessment is useful in guiding therapeutic and prognostic decisions about older persons.
3. The patient is the focus of geriatric assessment and his/her consent must be sought if possible. The assessment process should always be multifactorial. It should involve carers and include consideration of the person's living environment and physical, mental and social status. The aim is to keep the person in his/her chosen living environment as long as possible but, if necessary, to organise residential accommodation appropriate to the needs of the person.
4. Geriatric assessment should not be applied indiscriminately to all older people. Those with moderate amounts of disability benefit the most. Patients at risk for functional decline need to be assessed when they contact the health system either during hospital admission or in the primary care setting.
5. Geriatric assessment is delivered on a referral basis by specialist geriatric medical services as part of a regional geriatric service. Specialists in geriatric medicine are fundamental to the delivery of effective geriatric assessment. Aged Care Assessment Services (ACAS) are one modality that delivers this assessment and are therefore best integrated into the regional geriatric service. This provides seamless care with specialist geriatricians as well as an array of other programs that regional geriatric services may operate, including rehabilitation services, specialist clinics and home care and support services.
6. ACASs should be based on a multidisciplinary team model with physiotherapy, occupational therapy, social work, nursing and geriatric medicine being the core elements. In addition the assessment teams should have optimal communication with general practitioners and local community services.
7. Objective assessment of cognition and function should be part of every assessment. There are validated instruments which should be used for this purpose. The use of such measures of function may not always be appropriate for every setting where geriatric assessment is undertaken. In particular when an ACAS sees someone at home it may be more appropriate to collect information on a minimum number of domains of function (Table l) rather than use an instrument validated in a rehabilitation setting.
8. Given that home is the preferred living location for most older people, it is also the best place for most assessments to be carried out. This is particularly so for people who require a low level of care. Aged care services must have the resources to provide adequate staff, including specialist geriatrician, nursing and allied health staff, to provide a prompt assessment service in the person's home.
9. An essential part of geriatric medical practice involves home visits and community consultations because older persons often experience difficulty in attending outpatient clinics. All geriatricians must have some degree of training in home visits. Home visits require different skills compared to outpatient clinic visits. A broader range of information is sought in the home visit with particular regard to the person's social and physical function. Routine physical examination can often not be as detailed in the home setting while performance based examination such as assessment of gait, cognition and function is ideally performed at home

10. 1 Often older people are assessed in inpatient settings, especially during an acute crisis. This is frequently associated with a request for a high level of care. Geriatric assessment services need to be based in acute hospitals in order to provide the rapid response needed in that environment, therefore allowing those patients in need of rehabilitation or specialised subacute care to be transferred expeditiously. This also facilitates the education and training of acute hospital staff (medical, nursing, allied health and administrative) in the needs of older people.
11. 1 Some clinical conditions common in older people need access to multidisciplinary teams with particular clinical and investigative skills and knowledge. Such teams include, but are not restricted to, those in dementia (memory), falls, continence, sensory impairments (visual and hearing), pain and wound clinics. These clinics should also be integrated into the regional geriatric service.
12. 1 Assessment services for older persons need to cater for rural, non-English speaking and Aboriginal groups, as well as those with psychiatric illness. This may involve the hiring of staff with particular backgrounds to ensure cultural sensitivity. Assessment services need to be adequately resourced to provide for geriatricians to visit rural and isolated areas if required.
13. 1 As tertiary health care shifts into the community more geriatricians will need to be involved in other forms of community practice including rehabilitation and hospital outreach services.

ASGM Position Statement No. 9: Medical Care for People in Residential Aged Care Services

1. People are rarely admitted to residential care facilities for social reasons alone. Dementia, chronic illness and physical disability are the major determinants of admission, and compulsory preadmission assessments ensure that this is so. Many among the 140,000 people currently living in Commonwealth subsidised residential aged care facilities have complex medical service needs, and augmentation of the current medical service model is required if these needs are to be met.
2. Two decades of separate reform processes in residential aged care and general practice in Australia have resulted in significant advances in both fields, but the medical service needs of people in residential care have largely been neglected by policy makers from both the residential care and general practice sectors.
3. For the physical and mental health of residents there is a need for access to a broad range of integrated high quality health services including, but not limited to, geriatric nursing, primary care medicine, geriatric medicine; psychiatry of old age; palliative care medicine; dentistry; optometry and ophthalmology; physiotherapy; occupational therapy; speech pathology; podiatry; audiology; dietetics; and psychology.
4. Many common conditions of residents including behavioural symptoms of dementia; chronic pain; depressive disorders; urinary incontinence; hip fractures risk; skin ulcers; cardio-respiratory conditions and palliative care needs; require the development, institution and adherence to multidisciplinary clinical practice guidelines and valid outcome indicators. Therefore a collaborative inter-professional mechanism for integrated guideline development must be established for this population.
5. People resident in Commonwealth subsidised facilities should retain access to regional State and Territory-funded services. Specialist multidisciplinary services should establish supportive relationships with residential facilities in their regions, and provide individual consultations (on site if necessary), on referral by general practitioners. Aged care and aged psychiatry assessment and treatment services; memory clinics; regional continence services; falls and balance clinics; movement disorder clinics; pain management services; wound management services; and community health centres; all have expertise pertinent to the needs of facilities and residents.
6. At the level of the facility some form of organisation of medical service is required. Doctors are otherwise unable to conduct peer review activities and participate in multidisciplinary policy and procedure development. If this is economically impractical in each facility, it should be achievable under the auspices of local Divisions of General Practice.
7. At the sector level there is a need for the establishment of a medical special interest group, dedicated to promoting high quality medical care for the resident population, in which the Australian Society for Geriatric Medicine should have a major role. This body could

progressively establish education and training requirements for recognition of competency in residential care medicine. This recognition could become an entitlement to a remuneration margin, thereby exposing the sector to a competitive market of interested and skilled medical providers.

8. The Australian Society for Geriatric Medicine believes that the matter of medical service provision in residential aged care requires urgent collaboration between Commonwealth, State and Territory ministerial portfolios and sections of the bureaucracy that are responsible for primary care; specialist medical services, and residential aged care, in order to establish to whom the reform mandate belongs; and to bring the medical and sectoral stakeholders together to begin the process of reform.

ASGM Position Statement No. 10: Residential Aged Care from the Geriatrician's Perspective

1. Australia is at the forefront of international research and practice in virtually every field of health care except residential aged care. We currently fail to collect even basic data about the health status of people in residential care; or about our existing health care practices and their outcomes, in this setting. We turn our backs on international residential care comparative studies.
2. High quality health care for residents is achieved through the effective integration of skilled nursing with medical and allied health care. Effective integration of care and assurance of quality require the collaborative development, implementation, and assured adherence to multidisciplinary practice guidelines, and valid quality outcome indicators.
3. A sectoral framework and mechanism for high standard multidisciplinary guideline and outcome indicator development is needed. Guideline adherence and outcome achievement require the generation of incentives through a quality-directed funding system, and an accreditation system that exhibits the professional expertise to engender the respect of nursing, medical and allied health clinicians.
4. Urgent review of the current accreditation system and the steps needed to establish a contemporary model of health service quality governance for the sector is required. In the interim an appropriately skilled and experienced advisory body, which includes medical expertise, should be established to begin to re-channel current inadequate accreditation policies and procedures.
5. The current Residents Classification Scale (RCS) funding instrument is the antithesis of a funding system that generates incentives for quality health outcomes. Urgent action is needed to replace this system with one that links funding with quality care processes and outcomes. In the interim funding should be based on "raw" RCS scores, rather than existing categories, in order to ameliorate the large-scale subversion of clinical activity engendered by the current system.
6. There is a very major loss of potential health care productivity throughout the sector resulting from the inherent inappropriateness and duplication of RCS-related, and accreditation-related, assessment and care input planning processes. Ending the duplicate wastefulness of the current funding and accreditation systems will free extensive clinical and administrative resources throughout the sector. These resources should be redeployed to establish and progressively refine a new integrated funding and governance system that assures quality guideline and outcome-based health care; and provides the necessary professional skill-mix and educational programs.
7. Strategic alliances need to be formed between providers; professional and academic nursing, medical and allied health associations and faculties; and consumers, to establish what is currently accepted best practice within residential care and where investment should be made in targeted research. Both "Centers of Excellence", and a more inclusive and decentralised network of multidisciplinary "Clinical Practice Units" should be established to facilitate these alliances and their aims. These alliances should also serve as a vehicle to facilitate Australian participation in international comparative studies of quality residential care.
8. Research is needed to examine the reasons for the poor retention and attraction of nurses in the sector. One disincentive worthy of study is the absence of effective guidelines and lack of sufficient expert support for the management of behavioural and psychological symptoms of dementia. Another is the lack of clinical benefit for residents, and employment satisfaction for

nurses, deriving from the duplicated funding and accreditation system information and documentation burdens.

9. The care of future populations of residents will require a sustainable infrastructure of adequate numbers and quality of residential care places in the face of unprecedented demographic changes. This demands ongoing review of (especially not-for- profit) providers' capacity to accumulate capital; the re-examination of existing age-based regional bed provision formulas; and early consideration of the need for a "pre-funded" contribution system to secure future long-term care financing.

National Safety and Quality Council

It is estimated that around 140,000 hospital admissions each year are associated with problems with the use of medicines. A **Medication Safety Taskforce** and a **National Medication Safety Breakthrough Collaborative** have been established under the auspices of the to develop and drive a 'platform for action' to accelerate improvements in medication safety for patients in Australia. Medicines account for up to 20% of all things that go wrong in health care and are estimated to cost $380 million per year in the public hospital system (AIHW 2002a). The Collaborative will involve up to 75 teams from across Australia working intensively together to improve medication safety. It will be undertaken in three waves over two years. The specific areas targeted include:

Wave 1: Improvement in the fundamental processes associated with:

- medication utilisation such as information for consumers
- medication appropriateness, prescribing, administration
- dispensing, and documentation processes

Wave 2: Specific medications that most commonly result in medication incidents such as:

- anticoagulants
- antibiotics
- corticosteroids
- cancer chemotherapy
- medications acting on the central nervous system

Wave 3: The systems interface where patients move from the acute setting to the community.

Private sector insurance arrangements

Private sector providers have expressed interest in innovative services in non-acute or outpatient settings to avoid readmission, but **insurance arrangements** have created a barrier. The current utilisation-based reinsurance model for equalising risk in private health insurance, though it supports community rating, creates some disincentives for health funds to develop innovative products, and offers no strong incentives to seek efficiencies of allocation by way of out-of-hospital treatment options (for example, where there is an efficient alternative to hospital care for a treatment that requires the supervision of a community nurse).

In recognition of this obstacle, the Commonwealth Minister for Health and Ageing recently announced that a new risk-based capitation (RBC) model of reinsurance would replace the existing model, beginning in 2003 and fully implemented from 2005 (*Risk Based Capitation Risk (RBC) Equalisation for Private Health Insurance – Information Paper*. Canberra: DoHA Private Health Insurance Branch, 29 April 2003)

National Continence Management Strategy

Funded by the Commonwealth government, this strategy aims to improve the treatment of bladder and bowel problems so that more Australians can Live and participate in their communities with dignity and confidence. One of the key aims of the NCMS is to reduce admission to aged care homes by improving the treatment and management of incontinence in older Australians. 70 national research initiatives have been undertaken through the NCMS with specific attention to continence as being a factor in admission to aged care homes.

The Continence Foundation of Australia

The Continence Foundation of Australia (CFA) is a not-for-profit organisation established to assist people with incontinence, their families, carers and health professionals, in understanding and managing incontinence. The CFA receives CSSS funding from the commonwealth and specific funding to operate the National Continence Helpline and to distribute educational and continence awareness material through the helpline. By improving the management of incontinence, the helpline itself plays a role in reducing admission to residential care, allowing people to remain independent longer with improved quality of life.

Initiatives in other countries

New Zealand

The New Zealand Positive Ageing Strategy

Health status has a variety of determinants. General wellbeing is predicted by health, socio-economic status, safety and security, social status, and psychological functioning. Health is thus dependent on a variety of factors that occur independently of the health care system. Accordingly, the success of interventions implemented in the health care system to reduce avoidable hospital admissions in the elderly is restricted by their inability to address broader, distal determinants of health.

In recognition of this fact, the New Zealand Minister for Senior Citizens launched the New Zealand **Positive Ageing Strategy** in April 2001. The strategy incorporates an action plan that identifies the individual work items to be undertaken and coordinated by many government departments, in response to issues raised during public consultations. It also includes items identified by departments in their assessments of the changing social environment and the ability of current policies to meet the needs and challenges of an ageing population.

The Strategy seeks to improve the over-all wellbeing of elderly New Zealanders through a broad framework for action. A major component of the framework contains strategies for improving the health of elderly people. It also includes initiatives to improve the socio-economic status of elderly people through income assistance and superannuation planning.

The residential needs of the elderly are addressed by providing low cost, energy efficient housing that is designed to meet the specific needs of the elderly, and financial assistance for meeting housing costs such as rates and repairs and income related rental schemes.

The elderly population's access to transport is being improved through concession fares, volunteer community transport schemes, programs to improve the safety of elderly drivers and changes to the licensing system that allow elderly drivers to retain their licenses for as long as possible.

A number of strategies also seek to promote a range of lifestyle choices, independent living and cultural diversity. Addressing the needs of elderly rural populations through better access to services is another initiative included in the policy. Finally, the strategy outlines pathways to decreasing ageism, especially in employment practices, and increasing opportunities for community participation.

This strategy constitutes a holistic intervention. Its success may be measured by a range of specific and broad indicators, including the rate of avoidable hospital admission. However, these changes will take years to emerge and thus the success of the strategy is not yet known. Nevertheless, the existing literature does point to a broad range of predictors of avoidable admissions. Interventions that target the broader social context of avoidable admissions are likely to be successful.

The following were the work items n the positive ageing strategy to June 2002 that may specifically or indirectly affect avoidable hospital admission levels:

- The **Accident Compensation Corporation** (ACC) initiated a policy entitled **Elderly victims of violent crime.** The aim is to work with the Ministry of Health to ensure that older people who are assessed as needing long-term residential support as a result of violent crime receive continuity of care between services and do not have to pay for this care.

- The ACC has a **Fall prevention program** for older people - an extension of community-based projects conducted in 1999/ 2000 to help reduce the number of injuries among older people, or reduce the severity of injury, by raising awareness of older people to fall-related risk factors, and promoting a variety of personal and environmental changes (eg exercise) to reduce or eliminate risk factors. The program will promote safer lifestyles for older people by helping to prevent accidents, which in turn affects admission and readmission.
- The **Ministry of Health** has a number of projects that, while not directly addressing the problem of hospital admissions, support the development or advancement of specific project initiatives. Most promote independence in the elderly and assimilation back into general society, so that the strain on carers and health professionals in dealing with increased dependence is reduced.
    - The **Ministry of Health** and **District Health Boards** have developed the **NZ Palliative Care Strategy** to ensure quality palliative care services based on need are available to all New Zealanders, including older people. Implementation of the actions over the next 5–10 years will begin by ensuring access to essential palliative care services, including assessment, and care coordination, clinical care and support care. Each DHB is to have at least one local palliative care service. All people who are dying and their family who could benefit from palliative care services will have timely access to quality palliative care services that are culturally appropriate and are provided in a coordinated way. DHBs will develop a plan that identifies local needs for palliative care, local service providers and capacity for providing essential services, and justification for choice of providers for local services.
    - The **Ministry of Health** also coordinates the development of the **NZ Disability Strategy.** The main objective is to remove the barriers faced by people with disabilities (including older people) to enable their full participation in society. Some of these barriers affect the likelihood of elderly people being admitted to hospital. With the inclusion of appropriate supporting networks and day to day forms of assistance (appropriate parking, access to buildings and safety issues in the general community) the number of ED admissions from falls and other accidents that may be caused by a failure to provide effective services to the disabled will be reduced.
    - **The Ministry of Health** is now introducing the **Workforce development project** that develops competencies for two kinds of health workers: second-level nurse, and second-level health worker**.** The aim is to ensure an adequate number of appropriately trained health workers to deliver community and residential health and disability services for older people and enhance the quality of care provided in residential and community settings. This initiative will increase the number of patients who can be catered for away from the hospital setting.
    - The **Supported living project** provides ongoing work on supported living options for older people through a range of affordable alternatives to residential care and inappropriate housing for older people. The aim is to achieve greater independence of older people and to reduce the strain on other more intensive caring facilities so that only those who require these service get to use them which frees up health professionals for other duties and leaves more room in residential care to be used as a “step down” facility, subsequently freeing up hospitals.
- The **Ministry of Social Policy** and **Housing New Zealand Corporation** are implementing a project called the **Mental health and housing** project to improve outcomes for people with mental illness by improving access to and retention of appropriate housing, and improving provision and coordination of support services for people independently housed, thus prolonging independence in the elderly.
- The **Department of Internal Affairs** has initiatives in place to assist in the maintenance of healthy living standards and independence in the elderly through such projects as: **Fire safety for buildings,** and **Lottery aged funding**, which engages the elderly in positive community activities by providing home based support
- The **Ministry of Social Policy** guides implementation of **ageing in place** strategies and **residential care subsidies** that contribute to prolonged independence of the elderly. The senior

citizens unit runs a **Volunteers Community Coordinators** project that provides local positive ageing strategies through a national network of volunteers and community coordinators.

- The **Department of Child, Youth and Family** provide **elder abuse and neglect** prevention services and **employment initiatives** for the elderly.
- The **Ministry for Transport** has a number of initiatives to increase awareness of available transport, reduce cost, and increase the availability of transport to the elderly.

Additional initiatives of a more local nature are currently in place or being developed to help reduce avoidable hospital admissions.

- **Primary Health Organisations** are the local provider organisations through which District Health Boards (DHBs) will implement the Primary Health Care Strategy.
- **A community care project** begun in early 2003 provides home help for the elderly. It is a finalist in the health innovation awards, and has the potential to keep older people at home for a fraction of the cost of hospital accommodation.

United Kingdom

Person centred care

The British Department of Health points to person centred care as a determining factor in the success of health interventions that target the elderly (Department of Health, 2001). Person centred care seeks to involve patients in the planning and provision of the health care services they require, thus providing them with appropriate, timely and individualised packages of care, regardless of health and social services boundaries. Person-centred care requires managers and professionals to:

- listen to older people
- respect the dignity, privacy, individual differences and specific needs of elderly people, especially those which arise out of cultural and religious differences
- involve older patients in decisions about their health care needs and thus enable older people to make informed choices
- provide coordinated and integrated service responses
- involve and support carers whenever necessary.

Currently, elderly people are encumbered by multiple, redundant assessments and delayed, disjointed care packages as a result of fragmented communication networks between health care providers. These aspects of the health care system undermine elderly patients' perceptions of independence and control. Person centred care involves the patient and enables them to make choices that retain their independence and discourages dependence on the health care system. Person centred care and governance are not necessarily mutually exclusive. Rather, person centred care emphasises communication with the patient, which may allow them to make informed choices between a range of governance services (Bowman, 2001).

Workforce planning

The number of elderly people will continue to rise as the baby boomer generation ages. Workforce planning is a fundamental key to ensuring that elderly people receive adequate health care.

Workforce planning involves encouraging medical practitioners, nurses and other health professions to work in the aged care sector. The British Department of Health (2001) has developed a strategy to attract health care professionals to the aged sector via training, national and international recruitment drives and better remuneration.

Other initiatives

- **National Health Service:** Future directions being considered by the NHS to reduce the level of avoidable hospital admissions include:

- Provision of information so the service user and, where appropriate their carer, can be involved in decisions about their own care.
- Establish joint commissioning arrangements for older people's services, including consideration of a lead commissioner and the use of pooled budgets.
- Ensure an integrated approach to service provision, such that they are person-centred, regardless of professional or organisational boundaries.
- A new single assessment process should be put in place.
- Integrated community equipment services should be established.
- Integrated continence services should be established.
- Suitably trained registered nurses will be involved in any assessment process which has identified registered nursing needs, including the decision on the appropriate setting for the delivery of that nursing care.

- The **NHS Plan Implementation Program** set early milestones for 2001/02, including:
  - Ensure that there are 1,500 more intermediate care beds in 2001/02, compared with 1999/2000.
  - Ensure that 60,000 more people receive intermediate care services in 2001/02, compared with 1999/2000.
  - Ensure that 25,000 more carers benefit from respite/breaks services in 2001/02, compared with 2000/01. Such services are of vital importance to people of all ages, including those with physical and learning disabilities ensure that the number of older people helped to live at home per 1,000 of the population aged 65 or over increases by at least 2% nationally in 2001/02, compared with 2000/01.
  - The achievement of these targets results in a number of proposed benefits including:
  - An average rate of delayed transfer of care for people aged 75 and over of 10%.
  - A reduction of an average of approximately 1,000 hospital beds occupied at any time by people aged 75 and over awaiting transfer of care, compared with 2000/01.
  - An increase in the per capita rate of emergency admissions for people aged 75 and over of less than 2 per cent compared with 2000/01.
  - No increase in the rate of emergency re-admissions within 28 days of discharge, compared with 2000/01.
- **The National Service Framework for Older People:** One action areas of the National Service Framework for older people applies to the level of individualised, person-centred care which can positively influence the number of avoidable hospital admissions. This is achieved through a single assessment process, integrated commissioning arrangements, and integrated provision of services, including community equipment and continence services. The specific areas of the service which directly relate to avoiding or reducing unnecessary acute admissions are to:
  - enable older people to make informed choices, involving them in all decisions about their needs and care
  - provide co-coordinated and integrated service responses
  - involve and support carers whenever necessary.

  Community equipment services and continence services are particularly important for older people. Community equipment helps older people to remain independent. Incontinence, apart from being distressing for the individual and for their carers is the second most common reason for admission to residential care.
- One component of the **National Service Framework** is the provision of **intermediate care**, whose sole aim is to provide integrated services to promote faster recovery from illness, prevent unnecessary acute hospital admissions, support timely discharge and maximise independent living. For this area, the NSF builds on the intermediate care guidance issued in January 2001, which describes the essential components of intermediate care services, and how intermediate

care should be commissioned and delivered. NFS Intermediate care services should focus on three key points in the pathway of care: responding to or averting a crisis; active rehabilitation following an acute hospital stay; and where long-term care is being considered.

- The NHS Plan set targets for expansion of **intermediate care services**. By 2004, there will be:
  - 5,000 extra intermediate care and 1,700 supported intermediate care places together benefiting around 150,000 more older people each year.
  - Rapid response teams and other avoidable admission prevention schemes benefiting around 70,000 more people each year.
  - 50,000 more people enabled to live at home through additional home care and other support.
  - Carers' respite care services extended to a further 75,000 carers and those they care for.

  Each local health and social care system needs to establish a method of responding to crises, or impending crises caused by sudden change in circumstances. This should involve rapid assessment, diagnosis and immediate treatment followed by referral to the most appropriate services. This will include, as well as emergency hospital admission where that is appropriate, the following options which can be delivered close to or in people's own homes:
  - Counselling, information and advice to enable care to be provided at home.
  - Intensive support at home for a short period, including community nursing, community therapy services and home care support (sometimes known as 'hospital at home') step-up care in a residential or other setting (eg community hospital, nursing home, residential care home or very sheltered housing) for a short period in conjunction, where necessary, with:
  - Further, specialist assessment and diagnostic services.
  - Other ambulatory services, eg diagnosis, treatment or rehabilitation at a day hospital.
  - Community equipment services and housing improvement services.
  - Support to carers – family and friends.

  Intermediate care services will be provided by a core team of professionals including general practitioners and hospital doctors, nurses, physiotherapists, occupational therapists, speech and language therapists and social workers, with support from care assistants and administrative staff.

  For medical care the underlying principle is one of shared care between general practitioners and hospital based specialists. Locally agreed protocols and care pathways will determine the precise arrangements within a particular intermediate care service, and ensure that at any time the locus for medical responsibility is clear.
  - A named nurse will be responsible for co-coordinating nursing care and for ensuring the effective transition between hospital and community based services.
  - Intermediate care services will always include a program of active rehabilitation involving the contribution of one or more of the following: occupational therapy, physiotherapy, and speech and language therapy.
  - Social work is an integral part of the intermediate care service and the team should include a nominated social worker to be fully involved in the development of the team's practice.
  - A clinical team leader will be accountable for professional development and clinical governance issues.
- New or increased support from care assistants may be required while patients recover independence within a rehabilitation program following an acute event or after hospital discharge.
- The UK provides a variety of **flexible rehabilitation** programs, **care at home** and **care in the community**, as well as inpatient care and short term intensive rehabilitation with the stated aims of reducing avoidable admissions to acute hospitals, facilitating timely discharge from acute hospital, promoting effective rehabilitation, and minimising premature or avoidable dependence on long term care in institutional settings. Reported developments with these aims include:

- Appointment of a **social worker** to partner the discharge coordinator and intermediate care coordinator.
- Increased number of admissions directed to intermediate care schemes.
- A measurable reduction in the number of delayed transfers from hospital.
- Development of a **staff rotational program**.

- The **Stockport Health Improvement Program** (Greater Manchester) describes these future directions in reducing the occurrence of avoidable hospital admissions.
  - **Community and other intermediate care services**, fostering independence and rehabilitation, to prevent unnecessary admission to acute hospital care and promote early discharge from acute care.
  - Sufficient **acute hospital capacity** to ensure that patients presenting at A & E or referred by their GP, and needing acute hospital admission, are admitted to a bed within four hours of the decision to admit.
  - Length of hospital stay is reduced or admission avoided, through rapid and timely **access to assessment and diagnostic procedures**.
  - Length of hospital stay is reduced, or admission avoided, through provision of **community-based treatment**, following assessment and diagnosis.
  - The majority of patients admitted as an emergency are **seen by their GP** before the decision to admit.
- **Cornwall** and other counties are implementing a new strategy called **Homeward Bound Units**. The aim of this initiative is to facilitate hospital admissions of people who have been identified as requiring a period of intensive therapeutic intervention before being able to resume independent living. People should experience this service as offering them an opportunity to regain and maintain the skills that they consider important in improving their independence and quality of life. Staff trained to work as rehabilitation care assistants will be working closely with therapists to offer this service.
- **Without walls.** This intermediate care project has grown out of collaboration between **South West Dorset Primary Care Trust** and **Dorset Social Services**. The spur was the difficulties in recruiting and retaining domiciliary care staff and a need to improve the effectiveness of existing homecare services. But the project's broader aims are to facilitate earlier discharge of hospital patients, to help prevent avoidable hospital admissions of older people and to reduce the incidence of re-admissions. A key factor in the Dorset approach is that it involves working with the client before their discharge on activities to regain independence, with the support continuing post-discharge for a finite period at home.

Canada

Proposed initiatives reported to be in current or future development in Canadian hospitals include:

- **ED-based support programs** that reduce the need for hospitalisation (eg outpatient IV antibiotics; outpatient anticoagulation for venous thromboembolism; ED procedural sedation for appropriate minor operative procedures).
- **12–24 hour rapid diagnosis and treatment units** that aggressively investigate, treat and discharge patients who would in the past have been admitted to hospital. These units may be based in EDs.
- **Increased ED access** to diagnostic tests if tests may preclude the need for inpatient investigation.
- **Discharge coordinators** for EDs.
- **Multi-disciplinary ED-based rapid response teams** to coordinate community supports and enable discharge of patients who will not benefit from hospitalisation (including the frail elderly).
- Closer **liaisons with primary care providers** to assist with patient disposition.

- **Information systems** to facilitate the transfer of valuable patient information from the community to the ED and from the ED to the community.
- **Utilisation coordinators** in hospitals.
- A **Most Responsible Physician** to be accountable for every admission.
- **LoS benchmarks** for key casemix groups, **expected LOS** for patients at the time of admission, LOS targets, and performance measures.
- **Discharge planning begun at the time of admission,** including a discharge notification process.
- **Electronic monitoring of key discharge processes**, including time from discharge to bed availability, and time from bed availability to transfer.
- Lobbying for appropriate availability and use of **community subacute and ALC beds**.
- A designated **discharge lounge** and suitable waiting areas, and patients who are "just waiting" (eg for investigations, a ride home) moved out of hospital areas that are staffed for acute care.
- **Care provided matched to care required** (eg do not occupy acute care beds with patients who do not need them, move ALC patients to defined units or holding areas where staffing levels and care resources provided match what the patient requires).
- S**upervised hostel-type facilities** in new services.
- **Community support services** in liaison with acute care.
- Easier access to **convalescent and palliative care units**.

Appendix 2: Informants to the project

Dr Zahid Ansari, University of Melbourne, Vic
Ms Regina Barry, Morling Lodge, ACT
Ms Helen Bedford, Department of Health, ACT
A/Prof Julie Byles, University of Newcastle, NSW
Ms Ann Cansdale, DON Tappeiner Court, SA
Dr Gideon Caplan, Prince of Wales Hospital, NSW
Ms Gloria Caruso, Department of Human Services, Vic
Mr Ian Coverdale, Department of Human Services, Vic
Ms Sue Daly, Department of Human Services, Vic
Mr Bruce Edwards, DON, Royal Hobart Hospital, Tas
Dr Terry Finnegan, Royal North Shore Hospital, NSW
Prof Leon Flicker, University of Western Australia, WA
Ms Christine Foran, NSW Health, NSW
Ms Sue Fowler, DHHS Northern Tasmania, Tas
Dr Gavin Frost , Chief Medical Officer MBF, NSW
Dr Mukesh Haikerwal, GP, AMA Care of Older People Committee, Vic
Mr Bruce Harrison, Australian Health Service Alliance, SA
Ms Wendy Hubbard, Ballarat Health Services, Vic
Ms Julia Hudson, Royal District Nursing Service, SA
Mr Peter Kahn, Mayne Health, Vic
Ms Deborah Law, Flinders Medical Centre, SA
Ms Pip Leedham, Deputy Director Primary Health, DHHS, Tas
Ms Lorraine Lovitt, NSW Health, NSW
Dr Peter Martin, Eastern Palliative Care Services, St Vincent's Hospital, Vic
Ms Kylie Mayo, WA Health, WA
Mr Chris McGowan, Noarlunga Health Service, SA
Ms Lorraine Millar, Royal Hobart Hospital, Tas
Dr Michael, Murray, Australian Association of Gerontology, Vic
Mr Angus Norris, Health Benefits Association, Vic
Mr Chris Overland, Department of Human Services, SA
Ms Barbara Potter AM, Consumer representative, Vic
Dr Michael, Price, Westmead Hospital, WSAHS, NSW
Ms Schon Robertson, DHHS Northern Tasmania, Tas
Ms Jo Root, Queensland Health, Qld
Ms Kim Scanlon, NSW Health, NSW
Mr Russell Schneider, Australian Health Insurance Association, NSW
Dr Elizabeth Shannon, Dept of Health & Human Services, Tas
Mr Bruce Shaw, Senior Policy Advisor Aged Care AMA, ACT
Ms Irene Stein, Baptist Care, NSW
Mr Francis Sullivan, Catholic Health Australia, NSW
Ms Margaret Tweeddale, Mater Adult Hospital, Brisbane
Ms Jenny Upton, Dept of Health &Community Services, NT
Dr Paul Varghese, Princess Alexandra Hospital, Qld
Dr Paul Woodhouse, Australian Medical Association Victoria, Vic
Dr Mark Yates, Ballarat Health Services, Vic

Appendix 3: Interview protocol

Avoidable Hospital Admissions Study

Interview protocol

The Commonwealth Department of Health and Ageing has commissioned Siggins Miller Consultants Pty Ltd to complete a project that will:

- review national and international literature on interventions to reduce avoidable hospital admissions in the elderly. The scope of the review will include community-based interventions, interventions in emergency departments, and discharge planning (but does not include clinical pathways)
- document current effort in Australia to reduce avoidable hospital admissions in the elderly
- draw conclusions about how Australian effort shapes up in relation to evidence and or expert opinion about what works

The Commonwealth, or members of the reference group, have nominated you as a key person for the project who could contribute to achieving its outcomes. We are seeking your views and advice on the following subjects:

We are interested in your views about the *key determinants* of avoidable admissions in the elderly - for example,

- ? things that community-based providers of health care or residential aged care do or don't do
- ? things that carers or relatives do or don't do
- ? things about the person, such as their level of social integration or access to social support
- ? the health literacy of the patient
- ? structural issues such as the physical availability of services - for example, domiciliary allied health or nursing services
- ? access to home visits by GPs
- ? the impact of rurality and remoteness
- ? the availability of nursing home or hostel beds
- ? any other determinants you regard important to include

We are interested in your views on the *key elements of ideal or good practice* in interventions to reduce avoidable admissions in the elderly? (For example, elements that address structural issues in the system, availability of service types, &c)

What can you tell us about *current effort, special projects, demonstration projects or good practice* in your sector/jurisdiction? (Actual projects or processes, locations and key people involved. If possible, can you give us a list of such initiatives, or refer us to documented sources.)

We have completed a systematic search of electronic databases and government websites to identify and retrieve articles and documents relevant to our terms of reference. We are also want to make sure we access as much unpublished literature on current practice in Australia as possible. Are you aware of any unpublished reports in your sector or jurisdiction? If so, how could we access them (contact names, details of authors or facilities, &c)?

Thank you for your participation and help.

Appendix 4: Search strategy

For the purposes of the literature review, a comprehensives search strategy was developed for the database Medline (1966+ Silverplatter WebSPIRS). The following key phrases and Medical Subject Headings (MeSH) were used:

#1 (avoid* OR inappropriate OR unnecessary)
#2 #1 NEAR (hospitali?ation OR admit* OR admission*)
#3 Explode hospitalization
#4 Explode Patient-Admission
#5 Ambulatory-Care-utilization
#6 Health-Services-Misuse
#7 Explode Emergency-Service-Hospital
#8 #3 OR #4 OR #5 OR #6 OR #7
#9 #1 AND #8
#10 #2 OR #9
#11 Explode Aged
#12 #10 AND #11

After testing, this search strategy was modified for variant thesaurus terms and run against the following databases: CINAHL, Cochrane Library, Australasian Medical Index and the UK National Research Register. The search results were loaded into an Endnote Library with duplicates removed, and two reviewers identified relevant items separately. All relevant items were retrieved and these were manually checked for further references.

We also used the literature reviews on integrated bed and patient management by Anderson *et al* (2001) and Dwyer & Jackson (2001) for the Victorian Department of Human Service's Patient Management Task Force to identify relevant items.

Searches of the Internet were also made for more recent documents not indexed by the databases above. Variants on the key phrases in the search strategy were used with specific domain filters for Australia, New Zealand, the UK and Canada using the advanced functions of the search engines Google and Alltheweb. Supplementary searches were also undertaken for the US focusing on managed care strategies in addition to the key phrases of the search strategy.

A wide range of documents was retrieved by these searches. These documents were manually checked for further references, to be added to the search results from the bibliographic databases.

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