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MINIMISING ADVERSE CONSEQUENCES OF HOSPITALISATION IN THE OLDER PERSON

Series on clinical management
problems in the elderly

No 3

Report of the Health Care Committee
Expert Panel for health care of the elderly

NHMRC

National Health and Medical Research Council

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The objective of the National Health and Medical Research Council is to advise the Australian community on the achievement and maintenance of the highest practicable standards of individual and public health and to foster research in the interests of improving those standards.

This report was prepared by an expert panel of the former Health Care Committee. It was endorsed by the Health Care Committee in September 1993 and by NHMRC at its 116th Session in November 1993.



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Foreword

As the numbers of older people increase in the community so too does hospital admission rate, length of stay and readmission rate. Older people are especially prone to co-morbidity and to numerous complications secondary to being hospitalised. Many of these are potentially avoidable or at least should be able to be minimised. With appropriate training of all health care professionals working in hospitals, be they public or private, care of the older person can be optimised. This is critical in the face of the changing demographics of more hospitalised older patients needing to be treated with less health resources. There is a need to carefully monitor and make use of casemix information systems, such as the Australian National Diagnosis Related Groups (AN-DRGs), to ensure that the health and well being of our older patients is enhanced and uncompromised.

This paper outlines the key issues that lead to adverse consequences of hospitalisation and offers strategies to identify 'at risk' patients and how to deal with these. It is targeted at a broad audience of health care providers within public and private hospitals. In order to achieve this level of exposure this paper is being distributed to every Chief Executive Officer of these hospitals to draw their attention within the first instance to the issues involved in hospital care of older people. It is hoped that the paper will be widely distributed through each and every hospital in Australia — not only to doctors, but to nurses, allied health staff and to administrators.

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Health Care of the Elderly

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Membership

This publication is one of a series on clinical management problems in the elderly produced by various Working Groups of the Health Care Committee Expert Panel on Health Care of the Elderly. Other publications in the series are:

1. *Pneumonia in the elderly* (1991)
2. *Exercise and the older person* (1994)

Minimising adverse consequences of hospitalisation in the older person was prepared by a Working Group which comprised:

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Recommendations

1. Every hospital, public and private, should review its **policies** regarding care of the older person.
2. Regular **inservice** training programs should be developed for all levels of staff to ensure they are able to identify and cope with the needs of at risk older people.
3. **Time spent on trolleys** in Accident and Emergency Departments should be minimised. If unavoidable delays are anticipated, then use of sheep skins, frequent turning and hospital beds (rather than trolleys) should be considered to reduce likelihood of pressure sores.
4. Hospitals should make every effort to ensure that patients presenting to Accident and Emergency Departments have access to **staff with expertise in the management of older patients**.
5. **Early mobilisation** of older patients should be encouraged.
6. **'At risk' older patients** should be identified early and appropriate action taken to minimise secondary complications (**see Tables 1 and 2**).
7. **Confusion, incontinence** and **pressure care** problems should be recognised and aggressively treated.
8. Close liaison should take place between hospital medical staff and general practitioners in an effort to rationalise medication and **reduce morbidity associated with polypharmacy**.
9. Each ward and unit should hold at least a **weekly multidisciplinary team meeting** to help identify and plan management of older patients.
10. **Medical practitioners should attend** and contribute to these meetings to ensure optimum goals are set.
11. The **general practitioner** should remain a central focus in care of older patients.
12. **Discharge planning** should commence soon after hospitalisation. The general practitioner and carers should be involved in discharge planning.
13. No patients should be discharged until they have regained sufficient balance, mobility and endurance to allow them **to remain safely at home**.
14. Formal links should exist with the local **geriatric medicine services or the Aged Care Assessment Teams (ACAT)** to ensure that early referral, where necessary, can take place.

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Our ageing population

Demography of ageing

In their 1990 discussion on the effect of population ageing on the Australian hospital system, Andrews and Carr report that each year 56,000 people aged 65 and over are added to the Australian population.¹ In 1991, 11.3 per cent of our population were 65 years and over. This will rise to 12 per cent in 2001 and to 18 per cent by 2021. Within the older population, it is the oldest component that will increase most dramatically, so that by the turn of the century one in two people, 65 years and over, will be aged over 75.

Detailed analysis of trends in morbidity associated with increased survival have produced ambiguous results as to whether levels of disability and chronic illness in future aged populations will be higher, the same or lower than at present.

Whatever these trends, higher use of hospital services is likely to demand access to advanced medical care, while a population with more disability and chronic illness will have greater need for care. It is likely that there will be a greatly increased number of people suffering episodes of illness requiring hospital admission and other forms of medical management. Gibberd et al, 1991, projected admissions by age categories between 1986 and 2001². They predict that **admissions will increase by nearly 80 per cent in the 65 years and over age group** (from 694,000 to 1,248,000 per year).

The rate of hospital admission increases steeply with age in all adult age groups, as can be seen in **Table 1**, with the older person having the highest probability of admission to hospital.

Most older persons live successfully at home. If admitted to hospital, many of these individuals will recover and return home after a short stay; their hospitalisation will be little different from that of younger patients. However, others with illness or disability, may rely heavily on carers, who are often partners (husbands and wives) or children, especially daughters. It is essential that such family members and carers are taken into account in assessing the health care needs of older people and that their potential role in minimising adverse consequences of hospitalisation for the older person is recognised. It is important to identify those 'at risk' patients by appropriate screening, so as not to over generalise to all older people.

Are older people 'bed blockers'?

Length of stay increases significantly and progressively with age in all types of hospitals (public, repatriation, and private). Gillett et al 1991, demonstrated that 30 per cent of all hospital separations and approximately 50 per cent of occupied bed days relate to older people.³ The average length of stay (LOS) increases rapidly after the age of 60 years, from about six days at age 60 to 64, to between 15 and 20 days for people aged over 84. Hospital re-admissions similarly increase with advancing age. Severity of illness, multiple pathology and psychosocial factors all contribute to this.

While there is a widespread perception that large numbers of hospital beds are 'blocked' by older people who will ultimately be discharged to nursing homes, in reality these people make up only 0.4 per cent of admissions and account for 8.6 per cent of bed days. Depending on the definition of the acute phase of illness, only between 5 per cent and 9 per cent of beds can be claimed to be 'blocked'. The majority of older patients who occupy hospital beds for 'non-acute' reasons are discharged home.

The Commonwealth and State governments began actively developing casemix measures for Australian hospitals in 1988. The major achievement to date has been the development of Australian National Diagnosis Related Groups (AN-DRGs) — a classification system for acute inpatients. The DRG system has been extensively modified for Australian use, following recommendations of the Australian Casemix Clinical Committee. It is important that multiple pathology or complex psychosocial difficulties does not disadvantage older people by preventing their admittance to hospital or by encouraging premature discharge before their conditions have sufficiently stabilised to allow them to attain their highest level of functional independence. A specialist group of geriatricians is currently looking at possible changes for version three of AN-DRGs.

The ageing process

Without ageing, the risk of dying would be constant at any one time.

Ageing is a continuous process which does not take place at a uniform rate and which varies from person to person. Hence different organs may show age related changes at different times. Ageing is associated with a **decrease in viability** and an **increase in vulnerability** — a **decreased reserve capacity**.

Vision, hearing and the ability to smell decrease with age. Kidney function is reduced by approximately one-third, but may present a problem only when the older person becomes acutely ill or dehydrated, or is given drugs that are excreted by the kidney. Great care is required in prescribing drugs because of the older person's altered reactions to drugs. **Muscle bulk and strength** are decreased in the older person. While there is some argument as to whether this is part of the ageing process or disuse, the decline in function is great if an older person becomes immobile or has prolonged bed rest.

Ageing as such does not affect the ability to learn or remember. New techniques and programs may be taught effectively to the older patient.

Chronological age is of little value for anything other than the pension or retirement. It is the **biological age** that determines the functional status of the individual.

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Illness in the older person

Atypical presentation of disease

An older person who is unwell may present with vague symptoms and **without the classical signs** seen in a younger person, for example, myocardial infarction may be painless; an infection may occur without a rise in temperature or white cell count; an acute abdomen may present without severe pain or guarding.

Other **atypical and non-specific presentations**, such as those that do not clearly help to attribute the patient's symptoms to a physical cause or to pin-point an organ system, include acute confusion (delirium), depression, fatigue, weight loss and 'failure to thrive'.

There is a risk that, if such presentations are taken at face value, the older person may be denied hospital admission and the appropriate investigation and care.

Co-morbidity

Older patients are more likely than other patients to be suffering from chronic illness or disability and are more likely to present with **multiple disorders or illnesses (co-morbidity)**. Common syndromes such as immobility, postural instability, intellectual impairment and incontinence can be the presenting symptoms of almost any disease process in the older patient, and hence be the reason for hospital admission. This coexistence of disease states can lead to misdiagnosis or underdiagnosis, particularly as there is reduced sensitivity and specificity of many laboratory tests in older people.

Iatrogenic disease

Multiple illnesses or disorders can lead to **multiple drug prescribing**. This compounds the predisposition of the older person to develop problems with drug compliance, drug interactions and adverse drug reactions. The more drugs the patient is taking increases this risk. Underlying health problems and ageing processes rather than the age of the patient, are likely to be the cause of these problems. '**Rest in bed**' may be required during the acute phase of illness, but should be kept to an absolute minimum for older patients, since this can lead to many complications (**see Table 2**). Despite this there is still a tendency for older inpatients to stay in bed.

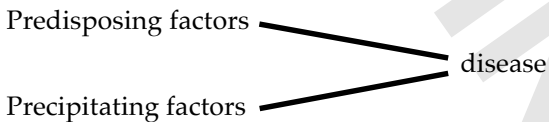
Impairment, disability and handicap

In 1980 the World Health Organization introduced a new system of classification relating to the consequences of disease, known as the International Classification of Impairments, Disabilities, and Handicaps. The sequence of disease-related phenomena is conceived in the following way: disease — impairment — disability — handicap. This concept is especially useful for describing patients with chronic problems.

An **impairment** is defined as any loss or abnormality of psychological, physiological, or anatomical structure and function. **Disability** is the functional consequence of an impairment and **handicap** is the social consequence. The multidisciplinary health team (see below) has a very important role to play in assessing and managing patients with disabilities and handicaps.

Acute illness is a major threat to the independence and autonomy of older people. Effort must be directed towards the prevention of disability and handicap during hospital admissions.

Another useful concept that can precede the word 'disease' in the above sequence, is the inclusion of the words '**predisposing factors**' and '**precipitating factors**'. Predisposing factors are those that increase the risk or vulnerability of the older person for a particular condition, while the precipitating factors are the immediate causes that lead to its onset.



When dealing with illness in the older person, it is important to address both sets of factors. As an example, many older women are predisposed to develop urinary incontinence as a result of multiple pregnancies and post-menopausal oestrogen deficiency. They remain continent, however, until a precipitating event, such as a urinary tract infection, decreased mobility, or faecal impaction, occurs. In this example, the predisposing factors would be dealt with by better public education and preventive measures. The precipitating factors can be dealt with by direct attention to these problems.

Factors leading to increased morbidity in hospital

The combination of the normal ageing process and illness takes a toll on older people. When medical or surgical interventions are added, the effect of prolonged inactivity or bed rest can be disproportionately negative, resulting in diminished physiological potential, functional capacity and reserve, including loss of muscle strength and cardiovascular fitness. Even in healthy younger subjects, **prolonged inactivity causes multiple physiological decrements**, such as loss of muscle strength and cardiovascular fitness.⁴ **Table 2** outlines the numerous potential consequences of inactivity and bed rest on the older person.

The compromised status of the older person, caused by the combined effect of the ageing process, chronic disease, disabilities and psychosocial factors can result in greater functional impairment than that caused by the primary disease. Unless there are timely and purposeful rehabilitative efforts, the hospitalisation of an older patient can start a negative process that can result in institutionalisation, even when the needed medical and surgical intervention, that prompted the initial hospitalisation, is itself successful.

One of the complicating factors is the '**sick role model**' that hospital systems tend to promote. This can manifest as passive and excessively dependent behaviour and a sense of powerlessness, in frail older patients. There is a scarcity of day rooms, dining rooms and adequate resources for post acute rehabilitation. There is also the tendency for older people to rest in bed. During the early phase of hospitalisation it is quite common for the older patient to experience episodes of confusion, disturbed behaviour, incontinence and immobility. There is a scarcity of single room facilities to accommodate this problem. This can lead to the patient **becoming heavily dependent** on nursing staff, particularly as muscle wasting and joint stiffness develops rapidly. Once this early cycle of dependency begins, it is difficult to break, because the patient **soon develops many sequelae of bed rest** which limit rapid rehabilitation. Good hospital care should minimise these problems. Unfortunately, undue delay in admitting a sick older patient to hospital, commonly precipitates a similar cycle at home.

All health care staff dealing with older patients need the **skills to identify 'at risk' patients** and to be able to provide restorative or rehabilitation care.

Preventing complications of hospitalisation

For many older people, the **hospital environment is disorientating and threatening**. The impact of a modern hospital may be so overwhelming as to contribute to the development of delirium (acute confusion) in some older people.⁴ Some of these patients have previously unrecognised early dementia. Admission to hospital can be a 'stress test' that unearths dementia as a recognisable illness. Where appropriate, efforts should be taken to keep older people at home with timely domiciliary intervention (see later chapters).⁵

The role of the general practitioner is pivotal in the care of older people. As access to hospital beds can be very difficult, especially for older patients, general practitioners need to be able to determine which of their older patients are not coping in their home environment and to be able to access a full range of services to help support these patients.

The carers of older people are also a critical component in their care. They may need support to care for the older person at home, including access to respite care.

All older patients are at risk of developing **secondary complications**. **Table 3** lists some of the more common factors that increase this risk. It is generally easier to prevent these, than to treat or cure them. Therefore, a program aimed at returning the sick or hospitalised older patient to a productive life-style is critical to their outcome. To be most effective, a flexible, functionally oriented program should be started as early as the patient's medical or surgical condition permits. This can help promote a more positive approach, not only by the health care team, but most importantly by the older patient who is otherwise at risk of rapidly becoming dependent.

A critical and individualised review of the **standard bed rest protocols**, used for conditions such as myocardial infarction, congestive cardiac failure and deep venous thrombosis, is required. These should be adjusted to minimise the consequences of prolonged bed rest, while at the same time avoiding programs that are too rapid or excessively strenuous.

This approach requires the efforts of a **team of health professionals** consisting of nursing staff, occupational therapists and physiotherapists, coordinated by the patient's general practitioner or consultant. An appropriate ward environment is most important to achieving these goals, eg adjustable height furniture, especially lower beds and high chairs; good lighting and signs; promoting mobility rather than use of wheelchairs; selected patients getting dressed in day clothes.

Acquiring premorbid information

Knowing and understanding the patient's level of mental, physical and social function prior to hospitalisation is an important factor in preventing complications once the patient is admitted. Such information can be obtained from the family, neighbours and the patient's doctor. Invariably this will be different to that observed in hospital. Ignoring the importance of such information can easily lead to a gross underestimation of the patient's rehabilitation potential. Obtaining the premorbid information and assessing the patient for 'at risk' characteristics is essential and should be the norm for all health professionals working with the hospitalised older person. Clear documentation of this information is most important and should include a statement on relevant physical, psychological and social factors that might affect the optimal management of the patient.

Minimising early complications of hospitalisation

Older patients are frequently subjected to **prolonged delays on trolleys** in the casualty or emergency department. This may contribute to early pressure sore development. Rapid triage should be the accepted philosophy to minimise undue delays. It is desirable to have someone with expertise in the care of older people in the department, to ensure that patients are dealt with appropriately. Unless there is considerably more training of medical and nursing staff, in casualty, inappropriate discharge or admission of older people is likely to keep occurring. Ideally hospitals should have a geriatric service that is available to do a 'round' of the Accident and Emergency Department at least once, or preferably twice, a day to ensure that patients are dealt with appropriately and expediently.

Where delays are unavoidable, softer trolleys and sheepskins should be readily available and staff should perform an immediate assessment of pressure ulcer risk using one of the rating scales (see Appendix 1). Where **risk is rated as high** the patient should be nursed on a proper bed, with attention to pressure care, pending transfer to the ward.

Minimising late complications of hospitalisation

Early mobilisation is the cornerstone for the prevention of a considerable amount of morbidity in the older person. While there may be some relative contraindications to this, generally the benefits far outweigh the risks.

The various **complications and sequelae of prolonged bed rest are listed in Table 2**. Preventive approaches to some of these are discussed in more detail below.

Prevent venostasis by passive and active **exercise programs** and promoting **early ambulation**. Subcutaneous heparin and anti-embolic stockings should be used when this is not possible.

Minimise respiratory complications with **breathing exercises**, gentle coughing and the use of humidification if necessary. This will assist pulmonary ventilation

and clearing of pulmonary secretions. Sitting out of bed and ambulation are major stimulants to improved respiratory function.

Prevent pressure sores and ulcers and maintain skin integrity by identifying at risk patients and by meticulous attention from day one to pressure care principles. The frail, incontinent, immobile, confused, acutely ill patient with poor nutritional status or those with at risk skin (excessively thin, dry or moist) are at **highest risk**. The use of **assessment scales** can assist identification (**see Appendix 1**). The use of sheep skin pads or boots, bed cradles, air or water mattresses and other support surfaces are important adjuncts. Eliminating shearing and friction forces (eg by better positioning in bed) and moisture (eg by achieving continence and good skin care) is critical.

Maintain and improve joint flexibility by ensuring that three to five repetitions of full **range-of-motion (ROM) exercises** are performed at least once daily to maintain flexibility and prevent contractures. These exercises progressively involve the patient. The exercises begin with gentle stretching and progress to passive ROM exercises, active ROM exercises, with assistance and finally active ROM exercises performed unassisted by the patient.

Prevent abnormal cardiovascular response to upright posture. Many **medications** will aggravate this situation such as diuretics, antihypertensives and various psychotropic drugs. It should be standard practice to measure postural blood pressure early after hospitalisation, during the early convalescent stages and particularly if the patient is not progressing as expected. It is not uncommon to find **postural hypotension** in the absence of dizziness or light headedness in this age group, with up to 20 per cent of otherwise well older people having a postural drop of 20 mmHg or more.

Full length elastic stockings can be useful, but the most important management aid is **sitting out of bed and early ambulation**. If symptoms are severe then a tilt table may be required to enable eventual tolerance of the upright position. Other medical interventions such as salt, fludrocortisone or sodium supplements, if not contraindicated, may help assist in volume expansion.

Minimise incontinence and restore continence. **Reversible causes** of incontinence (such as urinary tract infection, constipation, night sedation, diuretics or inadequate fluid intake) should be sought. There are many **environmental** obstacles to achieving continence, including inappropriate chair or bed height, cot sides, poorly labelled toilets, distance to toilets, time it takes to get staff attention or walking aids not being readily accessible. Patients with Alzheimer's disease may have difficulty locating the toilet because of poor memory, visual agnosia, or communication problems.

With promotion of mobility, correction of acute brain syndromes and implementation of a strict toileting program 'dependent' continence can be regained. That is, the patient is continent due to assistance or reminders provided. The next step is to achieve 'independent' continence by involving the patient in a personalised bladder retraining program. **Bladder charts** are a most useful adjunct to continence management (**see Appendix 2**).

Preserve muscle strength and endurance with therapy programs aimed at strength, flexibility, coordination, balance and endurance. These skills can be rapidly lost after even short periods of bed rest (**deconditioning**). When an older person has difficulty in walking, the physician and therapist must search for the cause, including foot or footwear problems and take corrective measures.

Older patients may require ambulation aids, such as a cane, or walking frame, especially during the early period of ambulation. When there is tendency to **backward lean** with ambulation, the use of a **frame with wheels** can be most helpful in throwing the centre of gravity forward. Regaining balance and mobility may be a slow process, particularly as a patient may rapidly lose confidence. In such circumstances the patient may actually have to learn to walk again through a graduated therapy program.

Improve cardiorespiratory fitness. The **exercise tolerance** of the sick older person is **low**. The doctor should evaluate the patient's medical condition regularly, preferably daily, and work closely with the therapist in prescribing therapeutic exercises. As the patient's condition improves, more vigorous exercises should gradually be permitted, with appropriate intervals for rest between them. Shortness of breath, cyanosis of the lips or nail beds, excessive perspiration, tachycardia and complaints of dizziness or faintness are signs of over exertion.

The simplest and most useful exercises are those functionally orientated incorporating **transfers and walking**. These include practising transfers from bed, chair, toilet, or walking to the toilet, day room, or doing laps around the ward. When this is not possible wheeling a wheelchair can provide not only a cardiorespiratory workout and improved upper limb strength, but also encourage a sense of independence.

Restore or maximise ability to carry out Activities of Daily Living (ADL). The ability to feed oneself, dress, groom, bathe, transfer from bed to chair and walk should be evaluated. The **occupational therapist** can help identify deficits in self-care, provide assistive devices and adaptive equipment, and train patients in ADL (see Appendix 3).

Minimise social isolation. The older person may become separated from functioning social networks and may find it difficult to re-establish these. Every effort should be made to maintain social contacts throughout hospitalisation and facilitate the patient's reintegration after discharge.

Minimise adverse drug reactions. Prescription of multiple drugs is common in the hospitalised older person, especially the use of **sedatives** and other **psychotropic medications**. **Drug effects are altered** with advancing age and adverse drug reactions are common. These include confusion, instability and falls (due to postural hypotension), incontinence and constipation. All medications should be **reviewed regularly** and kept to the essential minimum. Patients should be **educated** to understand and to manage their medication, thus reducing the likelihood of adverse reaction or compliance problems. **This topic is the subject of a separate NHMRC paper in this series.**

Reduce the hostile hospital environment. Distances to toilets can be great, heights of the bed and chairs may be inappropriate, and access to aids including glasses, hearing aids (checked to be working) and dentures may not be readily available. **Lighting**, noise levels, pace of the ward activities and inflexible ward routines are other contributing factors. **Primary nursing**, where one nurse is designated as the principal coordinator for each patient, may provide more continuity. Dressing in day clothes and proper footwear help negate these negative factors and is usually appropriate and helpful for at least some patients in every ward.

Minimise negative attitudes. There are numerous psychological effects of hospitalisation. These include **loss of self-esteem** and **personal dignity**, depression and confusion. These further aggravate the patient's motivation and ability to perform at their optimal level. These sorts of problems may easily lead to negative attitudes or expectations being developed, not only by **staff** and **relatives**, but also the **patient**. This in turn can adversely affect outcome.

Maintaining personal social relationships. The older person's family should be included in planning, especially as they are likely to be critical to the older person's well-being, both in the support they provide and in their role as carers.

Recognition and management of confusion

While many older patients are admitted to hospital with delirium, (acute organic brain syndrome; acute confusion) many more develop it in hospital, with at least 16 per cent of admissions being affected.⁶ The decision to hospitalise an older person should be made with a clear knowledge of the possible secondary morbidity of hospitalisation. The prevalence of delirium in older post-operative patients is even greater.⁷ A **Mental State Examination** with particular emphasis on orientation, attention and short-term memory should therefore be a routine component of the assessment of older hospital patients (see **Appendixes 4 and 5**).

In the older person, **delirium** is usually a quiet state characterised by the **clouding of consciousness** and blurred awareness of the environment. The patient commonly appears drowsy and inattentive rather than wildly excited or overactive. Lucid intervals are a frequent feature of delirium and may lead to diagnostic difficulties. Delirium **must be distinguished from dementia** and other causes of delusions, hallucinations and disturbed behaviour in the older person.

Delirium may be **caused by a myriad of physical disorders**, including cardiorespiratory disease, acute infection, intoxication or withdrawal from alcohol or other drugs, organ failure, metabolic, endocrine and electrolyte abnormalities, and pain states including urine or faecal retention. Important associated factors may include an **unfamiliar environment**, sensory deprivation, **pain**, emotional distress and insufficient sleep. **Relocation** is a common precipitating factor for delirium. In the older person, delirium is frequently superimposed on an underlying dementia.

The management of the older patient with delirium must include an assiduous **search for underlying physical causes** (these may be multiple) while the patient's

safety is ensured. The patient should be nursed in a quiet predictable, non-stimulating, orientating environment with adequate lighting. Staff should be supportive and make frequent attempts to orientate the patient. Staff should introduce themselves each time they speak to the patient and explain the procedures about to take place because memory impairment is characteristic of delirium. Except in a minority of patients, who are so agitated and deluded that their potential for self-harm or to others requires such methods, psychotropic medication and physical restraint should be avoided, as they may aggravate the situation. **'Special' nursing** by skilled staff should be the first line of management.

Active treatment of the aetiological factors usually results in the resolution of the delirium, although this process may sometimes take several weeks and in some patients **residual cognitive problems may persist**. It is important that both the staff and the patient's family understand that delirium is a brain disorder that affects perception, thinking and behaviour, and that the **patient may not be responsible for their actions** while delirious.

The multidisciplinary approach

Restorative or post-acute care

Once the diagnosis has been made, and the patient's condition is stabilised, every effort should be made to return the patient to fully functional independence as outlined above. This process may be simple, or it may be hampered by numerous intercurrent factors such as confusion or incontinence. Hence a holistic approach to care is needed. The cornerstone is **early recognition** of patients who are likely to be slow in their progress (see Table 3) and to initiate a **coordinated multidisciplinary strategy for these patients**. The **correct targeting** of such patients is very important. If progress is likely to be slow, transfer to a rehabilitation or restorative care service may be appropriate.

Multidisciplinary team and team meetings

Team work is essential when caring for the older person, as numerous variables may be present, requiring the assessment and management skills of a range of health professionals (see Table 4). Unfortunately, not all hospital wards and units can draw on the expertise of the full spectrum of health professionals. This applies especially to those hospitals in the private sector.

The basic multidisciplinary team consists of a doctor (to make an accurate diagnosis and institute appropriate treatment), **physiotherapist** (to maximise mobility), **occupational therapist** (to ensure independence in daily living activities), **social worker** (to address social and financial issues) and the **nurse** (to monitor and coordinate all of the above and incorporate it in the Nursing Care Plan). Other members include the clergy, domestic staff, speech therapist, and podiatrist. Ideally, the basic team outlined above should attend the **weekly case conference** where all relevant problems are identified and the **short and long term goals set** (see Table 4). All members should respect the expertise of other professionals and acknowledge the input from both patient and carer to ensure that all are **working towards the common goal of achieving the maximal functional independence** of the older person.

Not all older patients need to be seen by a geriatrician. However, if progression to independence is not occurring then referral should not be delayed. Close interaction with family and other home-based carers is critical during these planning phases, as well as on discharge.

Few hospitals have a written policy on the importance of team meetings, or why, how, and when they should occur. While team meetings may take place in some wards in public hospitals they are **uncommon** in the private sector. When such meetings do occur, the **documentation** in the files is frequently absent or not clearly action orientated. This makes it more difficult for all staff to be clear about the short and long term plans and their role in these. **'At risk' patients, particularly, should be identified early and discussed regularly (see Table 3)**. Ideally this process should begin prior to hospitalisation, or at the latest at the time of hospitalisation. The development of an 'at risk' screening tool (based on Table 3) can assist this process.

Preventing institutionalisation

As the mortality rate of older hospitalised patients is not very high and co-morbidity is so commonly unnecessary, institutionalisation may become inevitable if an active management approach is not pursued.

When the patient has been unable to achieve a sufficient level of independence, transfer to a **nursing home becomes inevitable**, especially if the person has no carers who are able to provide the extra care and support required. The acute hospital may then become a 'holding facility' and the patient perceived to be a 'bed blocker'. These are significant negative stereotypes of the hospitalised older person. If nursing home transfer is required, the patient should be offered the opportunity to be involved in this decision and to see the facility that has been chosen on their behalf. **Active early intervention** as discussed throughout this paper should serve to **reduce the number of patients requiring institutionalisation**.

The interface between hospital and home

Discharge planning

Discharge planning is an integral part of the comprehensive health care of patients admitted to hospital. Effective discharge planning contributes to the quality of hospital care and is a **collaborative** process involving the patient, their family or carers, and the various health care professionals. Discharge planning attempts to **balance the medical, physical, psychological, and accommodation needs of patients with the economy, efficiency and productivity of the hospital.**⁸

Discharge planning should therefore **begin on the day of admission** or certainly within a couple of days of this.⁹ Staff should **identify patients who may be at risk** of developing complications of prolonged hospitalisation (**see Table 3**). This should **lead to multidisciplinary input** that should target and focus attention on these 'at risk' individuals. Regular multidisciplinary team meetings, or early referral to a geriatric service when necessary (**see Table 5**) can hopefully lead to greater preventive action and more purposeful discharge planning. This includes referral to **appropriate home and community support services (see Table 6)**.

It is generally recognised that where 'at risk' screening programs are in place there are considerable benefits to the patients, family and hospital. As part of the screening process the **central role of the carers must never be underestimated. The carers provision of information on premorbid status and their involvement throughout the period of care as well as in decisions on post-discharge options is vital. Formal family meetings** with all or some of the multidisciplinary team may be most helpful in planning a realistic and viable outcome for many patients.

Carers may also be stressed by the older person's illness or by the burden of care they have carried. They may need access to support, education and even counselling, to enable them to continue to play an active part in the home-based components of care or to provide support for the older person.

Predischarge

For some patients it may be practical and therapeutic to work towards discharge by offering planned **day leave**, and then **overnight leave**. This allows the confidence of both the patient and the carer to build up and suspected problem areas to be better identified and tackled.

Prior to discharge, a **home visit** by the occupational therapist or physiotherapist on the team may be necessary so that any adaptive equipment may be arranged and home facilities modified to permit the patient to function as independently as possible. Where indicated, the physiotherapist should prepare an individualised, written **home exercise program** to be given to the patient with proper instructions. In some instances, convalescence may be aided by outpatient attendance at a **day hospital** or temporary transfer as an inpatient to a geriatric or **rehabilitation hospital**. Referral to, and liaison with **community services**, such as district nursing, home help, meals on wheels, can provide important support during the early vulnerable stage post discharge.

Liaison with the **general practitioner** is most important. It is necessary to communicate with the general practitioner about changes to medication, services being arranged and the patient's functional status, as well as discussions regarding ongoing care needs especially in the short term. **Phone communication** is likely to be the most effective way of communicating in view of delays involved with writing or dispatching of discharge summaries. A hospital policy of 'no summary — no discharge', with a copy to go with the patient and one by mail to the general practitioner, can help ensure the availability of a discharge summary.

The role of the general practitioner

The general practitioner may have known the patient and their carers for quite some time prior to hospitalisation. Liaison provides extra knowledge about the **previous functional capacity** of the patients, as well as **investigation and management to date**. As general practitioners are rarely involved in inpatient care in major public hospitals, communication is all the more important, especially when **planning discharge and post discharge care**.

In private hospitals and non-teaching hospitals, general practitioners often have a more central role in the patient's immediate care. As outlined in the paper, it is important that the focus of care goes well **beyond the acute presenting problems**.

Preventing relapse

The greatest way to minimise the chances of relapse and hospital re-admission is to **accurately diagnose and treat all underlying conditions** and to actively rehabilitate the patient to the highest level of functional independence. This requires attention to medical, physical, psychological and social factors. **Liaison** with the general practitioner is crucial prior to discharge. **A written discharge summary** and phone call should be the rule rather than the exception, for the 'at risk' older person. The discharge summary should include information about **changes to medication** to ensure these are not inadvertently recommenced. It is most important to identify whether the patient is **capable of managing their own medication**. Proper written and verbal instruction should be given to the patient,

including advice to dispose of other medicines that are at home. Whenever possible, patients considered to be at risk of compliance difficulties should be given the opportunity to manage their own medication (under supervision) prior to discharge. Compliance can thus be monitored and appropriate action be taken thereafter.

Follow-up by the attending physician or general practitioner should focus **not only on the medical illness, but also on early identification of other factors** that might indicate failure to cope at home. Failed discharge should be minimised with good planning as discussed above.

Reducing hospitalisation of the older person

In the care of frail or 'at risk' older people, (see Table 3) assessment of all the underlying or contributing illnesses, medications and physical and psychosocial factors is most important. **Domiciliary visits** by doctors and other health professionals, as indicated, may provide a wealth of useful information which may prevent inappropriate or premature hospitalisation with its attendant secondary morbidity. The **general practitioner** should be in an optimal position to assess, or at least recognise, these various factors because of their longer involvement with the patient.

During a domiciliary visit, the patient is more likely to feel comfortable and secure and **less likely to develop the sort of fatigue** often associated with transport delays in getting to the surgery, clinic or hospital outpatient department. Relatives and other informants can more easily be seen. The **environment** can be assessed and **medications** and other substances can be viewed. Some symptoms (eg paranoid ideas) may only be present in the home environment, while others (eg dyspraxia) may be best examined using objects in the home. The patient's home provides information about the patient's history as well as their present functioning. Social environmental factors can often only be assessed at home.

Conversely, hospital-based assessments may lead to **false impressions** of the level of functioning of the patient. In particular, the capacity of dementia sufferers to remain at home cannot easily be assessed in hospital. Besides the general practitioner, **geriatricians** and **psychogeriatricians** and other members of their assessment team are available to do domiciliary or nursing home assessments.

As indicated previously, **carers** play a critical role in enabling the older person to remain living in the community. It is essential that they are involved as key members of the older person's care team. 'At risk' older patients may benefit from **regular home visits**, that deal with both medical and social problems. This may lead to dramatic reductions in the number of hospital admissions and readmissions.⁵

Notwithstanding the above comments, when admission is required this should be done in a **rapid and timely fashion** to reduce the likelihood of developing secondary complications.

What can a geriatric service offer?

Geriatric medical services operate in various hospitals throughout Australia. There are many organisational patterns, ranging from visiting consultation and liaison services through to Departments of Geriatric Medicine in teaching hospitals with dedicated bed-based units or operating as a general medical unit for an age-determined population, usually those aged 75 years and over. These services have a particular role, which is to assist in the **assessment or management of a target population, such as is listed in Tables 3 and 5**. It is therefore ideal to have mechanisms in place on every ward in every hospital to identify those patients who are 'at risk', and to facilitate early intervention by the ward staff and onward referral to the appropriate geriatric or rehabilitation service.

A number of geriatric units participate in conjoint services such as **orthogeriatric** or **psychogeriatric services**. In an orthogeriatric service, the geriatrician is responsible for the medical component of the patient's care, for rehabilitation and resettlement. This has proved a very fruitful collaboration, resulting in better use of orthopaedic resources and better outcomes for the patients.

The essential features of a geriatric service that distinguish it from general medical units are the leadership of **geriatricians** (physicians trained and experienced in all aspects of health care for the older person), the deployment of a **multidisciplinary team** comprising of experts in aged care from the disciplines of nursing, allied health, and social work, and **organisational links** with other elements of the aged care system, such as day care domiciliary services and residential services. Geriatric consultation especially for the 'at risk' older person may assist discharge planning and result in better outcomes.^{10,11}

Aged Care Assessment Teams (ACATs) (formally known as Geriatric Assessment Teams — GATs), consist usually of geriatricians and community nurses and allied health staff. They play a crucial role in the determination of the best care options for older people be it assessment, rehabilitation or use of community or residential services.

ACATs and other geriatric services are imbued with the rehabilitation philosophy of **restoring and maintaining the patient's independence** at all costs. They also **focus on the patient's family**, rather than just the patient and the illness. The routine and early involvement of families in goal-setting, may lead to earlier discharge and lower re-admission rates, by addressing the key issues from the carer's perspective and organising appropriate community and home-based support.

Summary points

- The population of older persons will **increase markedly** in the next 20 years.
- The ageing process results in a **decreased reserve capacity**.
- **Atypical presentation** of illness is common in the older person.
- Older people often have **multiple pathology or co-morbidity** which confuses and compounds diagnosis and management.
- **Home assessments** may avoid unnecessary hospitalisation or institutionalisation.
- **Rapid transit** through Accident and Emergency Departments may reduce early morbidity.
- Relocation may result in the older person suffering from **confusion**.
- Many possible **complications arise from hospitalisation**. Preventive action should be routine, and **early recognition** and intervention be taken as necessary.
- **Drugs** should be kept to a minimum and be re-evaluated regularly. Patients and their carers should be **educated** on the importance of compliance and the possibility and identification of adverse reactions.
- **“At risk”** older patients should be identified early during their hospitalisation and be targeted for special attention.
- Rehabilitation in a multi-disciplinary setting aims to **maximise the level of independence** of the older person.
- **Discharge planning** is essential to avoid early relapse and/or readmission and reduce the need for institutionalisation.
- Attention to the needs of the **principal carers** may facilitate successful discharge.
- Geriatric services involve **multidisciplinary teams** that include a physician specialising in geriatric medicine and other health professionals working in close consultation with patients, carers and the general practitioner.
- Liaison with the **general practitioner** is most important to optimise care and to reduce likelihood of relapse.
- There is a need to use, monitor and adjust casemix information systems, such as AN-DRGs, to ensure that hospital admission and discharge is clinically appropriate for the health care of the older person.

If in doubt, contact the local geriatric unit or Aged Care Assessment Team before, during or after hospitalisation.

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Tables

Table 1 Hospital admission rate

Age Group	Hospital admission rate (per 1000 population per year)
<1	414
1-14	98
15-34	195
35-49	180
50-64	244
65-74	376
75+	548

(Adapted from: Australian Institute of Health: *Australia's Health 1990*).¹²

Table 2 Physiological consequences of physical inactivity and bed rest on the elderly

Organ system	Effect
Musculoskeletal	Decreased muscle strength Decreased endurance Muscle atrophy Loss of dexterity Joint stiffness and contractures Osteoporosis
Nervous and psychological	Decreased motor coordination Decreased balance Psychological disturbance Acute brain syndrome (delirium) Loss of confidence 'Sick role model' (skills suppression)
Cardiovascular	Orthostatic hypotension Decreased physical work capacity Reflex tachycardia Venous stasis/thrombosis Pulmonary embolus
Respiratory	Impairment of coughing mechanism Decreased clearance of secretions Decreased pulmonary ventilation Decreased vital capacity
Genitourinary	Urinary incontinence Urinary retention Hypercalciuria Decreased sexual function
Other	Atrophy of the skin Pressure ulcers Constipation and faecal impaction Faecal incontinence Adverse reaction to medication

Table 3 The 'at risk' elderly: factors which influence outcome from illness and hospitalisation

MEDICAL

Impaired premorbid level of function
Severity of current illness
Coexisting incontinence

PHYSICAL

Inability to walk unaided and unsupervised
Inability to perform all personal activities of daily living independently

PSYCHOLOGICAL

Coexisting dementia
Depression
Motivation of patient
'Sick role model' (loss of confidence increased dependency, skills suppression)

SOCIAL

Not coping well prior to current illness
Absence of a supportive care giver or presence of a frail carer (care giver stress)
Lack of appropriate community supports
Suitability and availability of accommodation

GENERAL

Recent failed discharge from hospital
Prolonged hospital admission
Multiple hospital admissions

Table 4 Agenda for the multidisciplinary team meeting

MEDICALPROBLEMS

Identify current active problems

Identify major other problems

PHYSICALDEFICITS

Identify areas of disability

PSYCHOLOGICALPROBLEMS

Identify factors interfering with progress or outcome, eg confusion, depression, motivation

SOCIALCIRCUMSTANCES

Identify pre-existing problems, carer stress

GOALS

Define short term goals

 Define long term goals

REVIEW

The above should be reviewed and updated regularly

DISCHARGE

Plan discharge location, supports

 Liaise with carers

 Liaise with general practitioner

FOLLOW-UP

Plan follow-up process — by who? when? why?

Table 5 Role of geriatric services in post-acute care

Geriatric medical services have a special expertise in assisting in the care of frail and 'at risk' elderly patients including the following

Those who need hostel or nursing home assessment

Those who need rehabilitation or restorative care

Those who have persisting incontinence, immobility falls, or confusion

Those who require complex medical care (especially where major physical and psychosocial difficulties coexist)

Those for whom a consensus about appropriate management is unable to be reached between staff, family and the patient

Those for whom a second independent opinion is sought

Table 6 Home and community support services

Home nursing

Meals on Wheels

Home help

Home maintenance

Day Care (Adult Day Activity Services)

Day hospital

Home visitors

Respite care (in-home, day care)

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12. Australian Institute of Health. *Australia's Health 1990*, Australian Government Publishing Service, Canberra, 1990. (Table 2.2, P16).

Appendixes

Appendix 1. Pressure ulcer risk assessment — Norton scale

A. PHYSICAL CONDITION Encompasses current medical and physical health; including nutritional status, tissue integrity, condition of skin and muscle wasting.	GOOD	4 Stable medical condition. Appears healthy, well nourished.
	FAIR	3 Stable medical condition. Compromised skin integrity and nutritional status.
	POOR	2 Medically unstable. Appears unhealthy.
	VERY BAD	1 Critical medical condition.
B. MENTAL CONDITION Encompasses level of consciousness and orientation.	ALERT	4 Orientated; aware of surrounding.
	APATHETIC	3 Lacks motivation; orientation.
	CONFUSED	2 Disorientated in time and place.
	STUPOROUS	1 Generally unresponsive.
C. ACTIVITY	AMBULANT	4 Up and about.
	WALK WITH HELP	3 Ambulant with assistance.
	CHAIRBOUND	2 Sit out of bed only.
	BEDFAST	1 Confined to bed.
D. MOBILITY	FULL	4 Independent in moving.
	SLIGHTLY LIMITED	3 Requires some assistance.
	VERY LIMITED	2 Requires extensive assistance when moving.
	IMMOBILE	1 Complete immobility; unable to change position.
E. INCONTINENT Control of bladder and/or bowel.	NOT	4 Total control of bladder and bowel.
	OCCASIONALLY	3 1–2 episodes either/both in 24 hours.
	USUALLY/URINE	2 3–6 episodes either/both in 24 hours.
	DOUBLY	1 No control of either function.

(Adapted from Norton 1975)

A score of less than 13 indicates vulnerability to pressure ulcer.

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Appendix 2. Bladder chart

Example of a bladder chart of a women aged 69 years with detrusor instability following a stroke.

Date 3/7/93				
TIME	DAMP	DRY	VOLUME	ASSISTANCE
	WET		VOIDED	TOVOID
	SOAKED			
2am		X	350ml	Assisted
5am	Wet		30ml	Nil
7am		X	100ml	Nil
9am	Damp		50ml	Nil
10.30am		X	130ml	Reminded
12.15pm		X	170ml	Reminded
2pm		X	130ml	Nil
4.30pm	Soaked		50ml	Nil
6.30pm		X	100ml	Nil
10.45pm	Wet		150ml	Assisted

Appendix 3. The Barthel Index—Activities of Daily Living (ADL)

This instrument is useful for documenting a patient's ability to perform the basic activities of daily living. It serves as a descriptive and as a quantitative instrument. It can be used to document progress in a rehabilitation program or to record change over a long period for outpatients.

This instrument can be applied by direct observation or by interviewing the patient or relatives.

Activities Rated by Examiner	Points for performance		
	Independently	With Help	Unable
Feeding (if food needs to be cut up = help)	10	5	0
Moving from wheelchair to bed (includes sitting up in bed)	15	10	0
Grooming (wash face, comb hair, shave, clean teeth)	5	0	0
Getting on and off the toilet (handling clothing, wipe, flush)	10	5	0
Bathing self	5	0	0
Walking on a level surface	15	10	0
Propel wheelchair (score only if unable to walk)	[5]	0	0
Ascend and descend stairs	10	5	0
Dressing (includes tying shoes, button)	10	5	0
Controlling bowels	10	5	0
	(accidents)		
Controlling bladder	10	5	0
	(accidents)		
<hr/>			
Total possible score =100			
<hr/>			

Source: Adapted from Mahoney, FI and Barthel, DW, *Functional Evaluation: The Barthel Index*. Maryland State Medical Journal, 14(1965): 61-65.

Appendix 4. The Shortened Mental Status Questionnaire (MSQ)

This test is in widespread use. It is useful as a quick screening instrument for cognitive impairment, as time for completion is short.

A score of less than 8 points is considered abnormal (0–2) severe intellectual dysfunction: 3–7 mild to moderate).

Score

1	Age (+/-1 year)
1	Day (of week)
1	Time (+/-1 year)
1	Month
1	Year (+/-1 year)
1	Name of hospital
1	Name of current prime minister
1	Year of commencement of World War 1 (1914)
1	Month backwards (December, November, etc) (score 1 for 6 in correct sequence)
1	Count backwards from 20 to 1
<hr/>	
10	Total possible score

Appendix 5. The Mini-Mental State Examination

This instrument is widely used as a screening instrument for cognitive impairment. While it takes longer to complete than the MSQ, it is a more comprehensive instrument and is more sensitive to changes over time.

The majority of patients with dementia score less than 24 points.

Maximum score

Orientation

- 5 What is the (year) (season) (date) (day) (month)?
- 5 Where are we (country) (state) (city) (hospital) (ward)?

Registration

- 3 Name three objects: (eg ball, flag, tree) — one second to say each. Then ask the patient to repeat all three. Score one point for each item repeated. If the patient is not successful, repeat them until they learn all three. (This is preparation for the recall item below.) Record the number of trials.

Attention and calculation

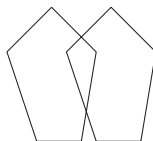
- 5 Begin with 100 and count backwards by 7 (stop after 5 answers). If (only if) the patient refuses to perform arithmetic, alternatively, spell 'world' backwards.

Recall

- 3 Ask for three items repeated above.

Language

- 2 Show a pencil and a watch and ask the subject to name them.
- 1 Repeat the following: 'no ifs, ands or buts'.
- 3 A three-stage command, 'Take this piece of paper in your right hand; fold it in half and put it on the floor'.
- 1 Read and obey the following: (Show the subject the written item)
CLOSE YOUR EYES
- 1 Write a sentence.
- 1 Copy this design:



- 30 Total score possible.

Source: Adapted from Folstein, MF, Folstein, S and McHugh, PR, 'Mini-mental State: A practical way for grading the cognitive state of patients for the clinician' *Journal of Psychiatric Research* 12 (1975): 189–198.

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